

# **An Experiment in the Registration of Vital Statistics in China**

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## CHAPTER I

### INTRODUCTION

This attempt at the registration of vital statistics in a Chinese community was undertaken as a joint enterprise of the Department of Agricultural Economics of the University of Nanking and the Scripps Foundation for Research in Population Problems, of Miami University. The original suggestion of a co-operative population study came from Professor J.L. Buck who had become much interested in population problems in China as a result of his work in agricultural economics. His proposal was that Mr. Thompson of the Scripps Foundation spend some time at the University of Nanking and that the two organizations collaborate in the effort to find out a little more about population movements in China. Mr. Thompson went to China in the fall of 1930 and stayed until the summer of 1931. During his stay the general plan of the present study was worked out. The responsibility for the finished product divides about as follows:

Mr. Chiao assumed responsibility for the general supervision of the project that had been drawn up, for the tabulation of the data and the preparation of the report, the general form of which had been agreed upon before Mr. Thompson's departure. Mr. Chen was made responsible for the actual gathering of the data but he was also to assist Mr. Chiao in the tabulation and in the preparation of the report after the field work was completed. Mr. Thompson was responsible for the decision to undertake the actual registration of vital statistics in a Chinese community rather than to rely solely upon the demographic data that might be secured at the time of a census enumeration. He is also responsible for the general form of the report and its preparation for publication from the draft provided by Mr. Chiao. The funds needed to carry out the field work, to provide for the tabulation of the data, to care for Mr. Chiao's general oversight, and to publish the report were supplied by the Scripps Foundation; while the University of Nanking cared for most of Mr. Chiao's time as well as those facilities which a going concern can provide, but the cost of which cannot be measured exactly in dollars.

In the editing of the report for American readers great care was taken to preserve the sense and even the wording of Mr. Chiao's draft where it threw light on Chinese customs, traditions, and social attitudes. Most of the changes made were in the interest of clearness, bearing in mind that this report was to circulate in English. If some of the modes of expression seem a little unusual it is because it was believed that they threw a light on Chinese life which would have been somewhat dimmed by the use of more conventional English.

The authors believe that the demographic picture of Hsiao Chi given here is basically true, although not absolutely accurate, and they very much hope that before long similar studies with which the results of this one can be compared will be made in various parts of China.

All students of population are well aware that the largest unknown quantity in the world's population is that of China; also that almost nothing is known regarding demographic movements in China. It is generally assumed that China has the largest population of any country in the world and that it is growing at a fairly rapid rate. Within the last 25 or 30 years there has been a tendency to increase the estimates of China's population almost steadily. Mr. Rockhill's writings on this subject shortly after 1900

aroused much interest in America about China's population, and his estimate of about 320 millions was quite commonly accepted as reasonable, although there were other foreigners in China who placed the numbers much higher. A little later, however, various so-called censuses, which were not censuses at all because the people were not actually counted, yielded considerably larger figures so that during the decade 1910-1920 there was a tendency to speak of "China's 400, or more, millions" while by 1920 or a little later the figure more commonly used was 450 millions. Today one frequently sees statements that China has 500 millions or about one-fourth of the total population of the world. It is needless to say that most such statements are mere guesses which probably should not be dignified with the name estimates. In fact, even the most careful attempts to estimate China's population must be regarded with skepticism since there are no reasonably certain data on which fairly reliable estimates can be based.

The University of Nanking in connection with its work in agricultural economics has gathered a considerable body of information regarding the population in certain areas of China. These data were gathered by enumerators whose principal task was filling in farm schedules for farm management studies. The population schedule thus secured gave a considerable amount of data regarding all enumerated members of the family. The births and deaths which had occurred in the family during the preceding year were also secured as far as this was possible. In view of the difficulties of registration recorded below, it would appear wise to use vital statistics secured by enumeration with great caution. Our experience in the United States in securing vital statistics at a single enumeration also indicates that the number of omissions is likely to be very large.

The data regarding Chinese farm communities secured in these studies tended to confirm the belief in a large population having a fairly rapid natural increase (6 to 8 per 1,000 per year). For reasons which need not be detailed at greater length it was decided that vital statistics gathered in this way in China needed to be checked against those gathered in other ways. It was believed that it would be wise to undertake the actual registration of vital statistics in some one community, hoping as was said above that before long many such experiments in registration could be carried out. Therefore, a scheme was drawn up for an intensive effort to register the births, deaths, marriages, and migration in a single community.

It was believed that by intensive work in an area fairly typical of the lower Yangtze delta, much could be learned that would be of interest to students of Chinese population. There was no expectation that any general conclusions regarding the growth of China's population as a whole could be drawn from this study, but it was hoped that (a) it might contribute a little to the knowledge of how to go about the registration of vital statistics in China, (b) it might arouse more interest both in governmental circles and among individual students in the actual registration of vital statistics, and (c) that it would add a little to the very scanty information regarding demographic movements in China.

Since the value of such a study consists fully as much in what it teaches about effective methods as in what it yields in actual results it will be well to describe the whole project in some detail.

#### Method of Study

It was obvious at the outset that a fairly accurate record of vital



statistics and migration in a Chinese community could not be had unless a plan were devised which would insure not only careful and conscientious supervision by a trained worker but also the co-operation of the leading people in the community in the gathering of the data day by day, or unless the study were confined to an area so small that one paid registrar could keep track of every demographic incident by personal contacts. In the latter case, its usefulness would be slight, since it would neither throw much light on the general problems involved in registering demographic data in China nor would it give a large enough statistical basis to be of much value. If several paid registrars were put in the field, in addition to the difficulty of finding trained workers, the funds available would not be sufficient to maintain the experiment for the length of time that would be necessary to assure that the period covered was fairly typical.

It was decided, therefore, to block out an area as large as a trained worker could cover as a supervisor and to attempt to secure a number of local unpaid helpers — persons who were so familiar with their neighborhoods that they could not fail to know when births, deaths, and marriages occurred. The problem then would not be one of unwittingly overlooking demographic facts so much as of securing the good will and co-operation of the people who were certain to know the facts. The size of the area and the number of people to be included were determined by these considerations.

#### Choosing a Supervisor

The first and perhaps the most important step was to find some one who was interested in such an experiment in the registration of demographic facts, who also had a general social science training on which special training in demography could be grafted rather quickly, and who was sufficiently familiar with the life in the area to be studied to be able to get on well with the people of this area. We were very fortunate in finding Mr. D.T. Chen, a graduate of Shanghai College and whose home was in one of the areas under consideration. He had specialized in social science and was in position to come to Nanking early in 1931 for special study with Mr. Thompson and Mr. Chiao. After getting acquainted with Mr. Chen it was definitely decided to locate the registration experiment in his home community in Kiangyin County. This would give him the advantage of family connections, of a thorough familiarity with the local dialect, and of being close enough to Nanking to confer with Mr. Chiao when it seemed necessary.

#### Area Chosen for Study

Hsiao Chi in Kiangyin County is located not far from the Yangtze River, north of Wusih, about half way between Nanking and Shanghai. It is believed to be fairly typical of the lower Yangtze delta in most important respects. At the time it was chosen for this study, it was believed to have about 200 small villages and possibly 20,000 inhabitants. Careful consideration also led to the belief that the area of Hsiao Chi was not too large (13.9 square miles) to be covered once a month by Mr. Chen personally and that there would be no unusual difficulty in finding some one in practically every village who would know the facts regarding births, deaths, marriages, and migration. The real difficulty would be to secure the co-operation of persons knowing the facts to act as local reporters.

In addition to the reasons mentioned above Hsiao Chi has other traits which make it appear typical of a fairly large delta region. It has a very good climate. The temperature during the summer months is about 20 to 30 degrees centigrade (68° to 86° Fahrenheit) and during the winter months is about six degrees below zero (about 20° Fahrenheit). The most pleasant weather occurs during spring and autumn. During these two seasons the mean temperature is around 15 degrees (60° Fahrenheit). Closely related to the temperature is the distribution of rainfall. A very large proportion of the rainfall occurs during the growing season for rice, from May to September, but especially during June, July, and August. The annual precipitation is around 45 inches.

The whole region is flat and very productive. The soils of the area are a brownish-gray silt loam. The land is utilized for rice during the summer and for wheat during the winter. Mulberry trees are widely grown and dominate the landscape. Silkworm culture is very important. The entire district is farmed intensively, there being no waste land except that utilized for graves.

The people are dependent upon agriculture except for a small number who live on trade and commerce. Most villages in this area are very small; those with twenty to thirty families are the most common. In this community, people with the same family name very often live together in one village. The houses are built of gray bricks and sometimes of sun-dried cakes of mud. The roofs are mostly of tiles laid upon rush mats and rice stock; these in turn rest upon the wooden rafters that lie on the main beams. Thatched roofs are not common in Hsiao Chi. Houses commonly face south. Windows are rarely found and if there are windows they are the small latticed type. During most of the year (except in summer months) the windows are kept tightly closed.

Most of the people living in this district have a very low standard of living. During the winter months when they have little work to do and the day is short, they have three meals a day; some very poor people have only two meals and have only enough food to keep life going. During the summer months when they have much work to do and the day is long the people generally have four meals. The meals are much the same day after day, rice and vegetables being the common food. In busy seasons, however, macaroni made of wheat is generally eaten at dinner. Very often the people eat imported rice. The rice from their own farms is sold to Wusih and Shanghai. During and just after the harvest time a number of rice traders appear in the country. Very often the people sell their products right after they are harvested, for at this time they have to meet many obligations, chiefly debts and taxes. After their debts are paid many people do not have enough food to see them through to the next harvest. Therefore, during the spring and early summer the shortage of food is more acute.

The whole district of Hsiao Chi is a very densely populated area. According to the census of 1932, there were 4,579 families with a resident population of 21,864. (See Table 1.) Since the total area of the district is 13.9 square miles there were 1,573 persons per square mile. But there were only 8.2 square miles of cultivated land, hence there were 2,673 persons per square mile of cultivated land. The cultivated land per capita was 1.45 shih mow (.24 acres). We were told that the population had greatly increased since its devastation during the Taiping Rebellion in 1860. Probably the population in the area has doubled during the past

**Table 1.**  
**Number and Percent Distribution by Size of Rural Families and Households**  
**in Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932,**  
**and Percent Distribution by Size of Rural Families in China, 1929-31,**  
**and of Rural-farm Families in the United States of America, 1930.**

Number of persons in the family	Hsiao Chi Rural families March 1, 1932		China Rural* families 1929-31 %	United States Rural-farm** families 1930 %	Hsiao Chi Households, 1932	
	Number	Percent			Number	Percent
1	355	7.8	3.1	5.2	339	7.4
2	534	11.7	8.3	18.3	527	11.5
3	675	14.7	14.6	18.0	667	14.6
4	801	17.5	18.7	16.6	785	17.1
5	747	16.3	17.5	13.3	741	16.2
6	601	13.1	13.8	10.0	609	13.3
7	384	8.4	8.6	7.1	387	8.4
8	193	4.2	5.2	4.8	205	4.5
9	115	2.5	3.4	3.1	109	2.4
10	65	1.4	2.3	1.8	79	1.7
11	28	0.6	1.6	1.0	35	0.8
12	26	0.6	0.9	0.8***	27	0.6
13	18	0.4	0.4	...	22	0.5
14	9	0.2	0.4	...	10	0.2
15	13	0.3	0.4	...	12	0.3
16	8	0.2	0.8****	...	10	0.2
17	3	0.1	...	...	4	0.1
18	2	...	...	...	3	0.1
21	1	...	...	...	2	...
22 and over	1	...	...	...	6	0.1
<b>Total:</b>						
Families	4,579	100.0	100.0	100.0	4,579	100.0
Persons	21,343				21,864	
Size of family or household:						
Mean	4.7		5.25	4.6	4.8	
Median	4.9		4.48	4.0	5.0	
Mode	4.5			2.8	4.5	

- \* Reference (11) Vol. 11, pp. 338-339. (For references by number see Appendix III following the text.)
- \*\* Reference (33) Vol. 6, pp. 14 and 16.
- \*\*\* 12 and over.
- \*\*\*\* 16 and over.

sixty or seventy years. Owing to the pressure of population in the locality a large number of people leave the farm each year and the land is more intensively cultivated year by year. For the same reason local disturbances have frequently occurred and the number of wandering people has been increasing. We believe that the whole region is representative of the usual conditions in East Central China, that is to say, in the lower Yangtze valley.

Since it seemed probable that it would take several months to get this registration work organized, Mr. Chen went to Hsiao Chi in April, 1931, although it was planned not to use any of the data that might be collected before September-first of that year. Mr. Chen's first task was to visit all of the villages, explain his work, and get acquainted with persons willing to act as local reporters. This was a long and discouraging task.

When starting the work of vital registration, the supervisor found it very difficult to approach the farmers and to gain their confidence. In village after village he found very few people who were willing to co-operate with him. In the first place the people in the country were not interested in vital statistics but in things which would materially help them, such as food, clothing, and money.

Secondly, the people were quite superstitious. The word "death" was almost forbidden in some villages since it was believed to be unlucky to talk about the dead. They often wondered why a death had taken place in this family and not in that family. They always had some superstitious way of explaining it. For instance, at the time of starting the organization of vital statistics registration — in the spring of 1931 — measles was prevalent in the Hsiao Chi area. This disease had taken a large toll of deaths among the young children. Because some children died in homes where inquiry regarding births and deaths had been made, many people thought that these deaths must have some connection with the work of vital registration. (See the quotations from Mr. Chen's letters which follow.)

Thirdly, the people were full of fears and ignorance. They feared that following the work of vital registration a poll tax would be levied and compulsory military service would be required of the people. When the census was taken in 1932, there was a rumor in the country that the government was going to tax every person five cents and was going to use the census as a basis for the selection of soldiers. Nobody liked to pay more taxes and nobody wanted to be a soldier. As regards being a soldier there is a saying that "A piece of good iron will not be hammered to be a nail, and a good man will not become a soldier."

Fourthly, the people were full of prejudice. Female children were despised, hence they were likely to be under-reported. Furthermore, the birth of the first child is considered of unusual importance, therefore they are especially anxious that it should not be recorded. The following case described by the supervisor also indicates how the registration of an abnormal person was regarded in the community.

"May 2, 1931, I went to a village named Tong Yang Chen to call on the reporter named W-. But he was not at home. I then interviewed his wife regarding the matter of vital registration. 'No birth and no death have occurred in past one month,' said she. Another woman standing beside me said, ' -'s child died of measles in the third moon.' 'Why,' said W-'s wife, 'That was a very small baby.

His body was crooked. He did not look like a baby. What's the use of having the death of such a baby reported?"

But even this statement of difficulties does not give as enlightening a picture of the actual situation as will some quotations from Mr. Chen's reports sent in from the field.

June, 1931:

"..... I paid my second visit to 10<sup>4</sup> reporters (local assistants) within more than 120 villages. From this visit I found that only eight reporters actually filled up our schedules, 61 reported me no birth and no death, and 35 gave their oral reports and I filled up their schedules myself.

"Some of our reporters fear having objections of their neighbors after the actual birth or death is given in our schedules.

"In one village ..... the people greatly objected me to collect birth and death among them. I visited that village already four times. The attitude of people there toward me now somewhat has been changed."

July, 1931:

"In the very beginning I had had a very hard time to deal with those females in the country since we know they are more conservative, more superstitious, and suspicious than the males.

"During the past three months, there was a rumor in some villages telling that the names and ages of small children which were written in our population schedules were for the use of building up bridges. The bridges could be built up only by means of having small babies' names and ages laying down at the bottom of the river as the bridge foundation. Because of using babies' names and ages for building the bridges, many children had measles and died of it. I went to a village named Tong Hwai Tsuen. The reporter there is Hsu Chi-hwa. Arriving at Tong Hwai Tsuen, I saw a group of children playing outside of the houses. I asked them, 'Is this called Tong Hwai Tsuen?' 'We do not know,' they answered. Later, coming to Hsu Chi-hwa's home, I had learned that those children disliked me coming to their village, Tong Hwai Tsuen. Mrs. Hsu Chi-hwa told me thus: 'Because you came to collect births and deaths last time, we had a quarrel with some of our villagers. They said that we had lost our conscience for letting you to have their babies written down in your population schedules. Because we cannot bear this kind of disturbances, Hsu Chi-hwa went to Siao Gyi market town for inquiring your work and your personal affairs. Coming to the market town, he happened to meet your father in the tea house and had a talk with him. Now the problem becomes no more problem. All the question was settled. Many people in your village married the people in this village.'

"Many similar cases are happened to me during the course of my field work. I shall not cite them again. But I may say that it was an exceedingly difficult job for me to attack so many villages, more than two hundred, at the very beginning. Many people just gave me their round faces. Many villagers asked me to change my profession and not to do this kind of business. During the past four weeks, certainly I have had a better time with those farmers."

August, 1931:

"My work is much easier than ever before. Now I say that my work is going on with success. During the past one week I found no people who spoke against my work except asking some old questions."

"Some time in April I went there to see him (Chang Tse-Ching) again (second visit). But he was not at home. I then interviewed his mother and his wife. They were like barking dogs, and gave me a great disappointment. They asked me to leave that village very soon and they would have nothing to do with my research work. After going back to my home I talked this matter over with the Shan head..... He promised to see Mr. Chang personally about this collection of vital statistics..... I went there again on the 14th of August. .... But the reporter was also not at home. I then interviewed his mother again. She was rather kind this time. 'All right,' she said, 'we will do the same way if other villages do likewise.' I met Mr. Shu (the Shan Head) on the street on the 17th. He called me and told me ..... 'Mr. Chang promised me to be your reporter. There will be not any other problem.'"

October, 1931:

".....Noting down the attitudes of our reporters toward me, I am doubtful of the reports in some villages. On October the sixth, I visited a village named Zan Chang Chen. The reporter there is Li F-dong. He was not at home in the time of my visit. I then interviewed his wife. 'No birth and no death,' she said. I asked to examine the population schedules which I gave to Mr. Li F-dong, so I might know whether her answer is true or not. When the woman handed me the population schedules, I asked this question: 'No birth and no death in your village? All births and deaths are required to be registered.' 'N - o,' Mrs. Li answered me. After saying this she directly went out from the door. She again came back to the house and repeated her answer: 'No birth and no death in this village.' 'They do not like to have birth registered,' she also said. Her attitudes and saying made me think that there must be some birth or death occurred during past one month in Zan Chang Chen. By the way, there were two young women in the house washing their clothes. They both kept quiet and said nothing to me. I remembered when I paid my visit to their home on the 9th of August the same two young women treated me rather cordially. They asked me whether the case of stillbirth should be registered or not. Their attitude toward me this time makes me quite doubtful about Mrs. Li's answer. Going to the neighboring village of Chi Chia Chen, I got the fact that there was one birth occurred in Zan Chang Chen. Now I went back to Zan Chang Chen again in order that I might get the case right straight. Besides this, Mrs. Li and her people would think that I have a determination to get all births and deaths registered, and also would think that it wastes their and my time by not reporting the true facts. I went into the door, and met Mrs. Li F-dong. 'Mrs. Li,' I said, 'we like to have no omission of either birth or death in our schedules. Now I have learned that there is one birth omitted in your village. Will you please give me the case. You may remember that in doing this kind of registration we

have permission from the city and local governments.' 'Who told you that there is one birth occurred in this village?' Mrs. Li questioned. 'The one who told you would get the case for you. .... Is this what the people in Chi Chia Chen told you so? .... Even though she was given a female baby she does not like it to be registered. That is her first child.' 'Well, Mrs. Li,' I said, 'I like to see the child's parents. I will explain to them.' 'You go there yourself,' the people in the house said. 'One omission is no importance. You should not take it too seriously,' a man about thirty said. 'Getting the case, you may come next time,' the people said. 'I like to see Mr. Li F-dong,' I said this time, 'and he will come back today, anyhow.' 'Oh, he will not come back until the evening time,' a young woman quickly joined by saying. I sat on the chair and waited for Li F-dong to come home. Seeing that I had a strong determination to get the case, Mrs. Li F-dong went out from her house second time. A little while, she again came back to the house while there was another woman followed her. The other woman seeing me, she said, 'Why should you like our new-born granddaughter registered?' After hearing my explanation, she finally gave her consent letting her granddaughter be registered."

#### A current rumor regarding the work:

"One out of every three members in each family is required to go to army, is a common belief among the people of the country. 'Probably he is going to find out how many fighting men (we have) since now China is ready to fight Japan,' some people said when I collected vital statistics among them."

### Schedules

In a study of this kind, reliable and comparable data depend a great deal upon the form of the schedule. In preparing the schedules used in Kiangyin we first looked over similar schedules used in foreign countries and then made schedules of our own suited to local conditions. These were then tried out in Hsiao Chi and revised as seemed necessary. Five different schedules were used: (a) for census, (b) for births, (c) for deaths, (d) for marriages and (e) for migration. Every schedule was made out in duplicate. The first sheet was turned in to the Department of Agricultural Economics at the University of Nanking and the duplicate sheet was left in the local reporter's home for future reference.

### Field Organization

In this area there are 221 villages including four market towns. The supervisor was expected to visit each village at least once a month. On the whole he did somewhat better than this. During the first few months of his work he called on the village heads, talked to them about the importance of vital registration, and tried to enlist their assistance. For the 221 villages he finally secured 180 reporters. Generally they were people recommended by the community leaders or by the relatives and friends of the supervisor. Because the community leaders supported the work, many

people who otherwise would not have been willing to be reporters undertook the work without undue urging. Many of the reporters were the local leaders themselves.

Those 180 reporters were generally (a) men respected by their villagers, (b) men who were literate, (c) men who had stable families, (d) men with liberal minds, and (e) the men who had helpful wives and children. To the work of vital registration in Hsiao Chi the women and children made valuable contributions. This was because women and children spend most of their time in their homes. The supervisor could meet them almost any time, while the men were busy on their farms and often could not be found in the day time. Furthermore, women and children have more leisure time and have better memory than men for such matters of purely village interest as births and deaths. If anything takes place in the village, women and children know it first. Thus it happened that in the villages where women and children co-operated readily with the supervisor the work of vital registration was easiest and most successful. It was our experience that unless the supervisor can get the co-operation of women and children the work of vital registration can scarcely be expected to be successful.

All the village reporters in the Hsiao Chi registration area were volunteers and received no pay. Once every month the supervisor called on them and cultivated friendship with them. After he had worked in the country for several months he got well acquainted with all the reporters and their family members. They knew what information he wanted and knew that gathering vital statistics would do them no harm. They knew that when the supervisor came to their homes they were first to show him the registration schedules which they had in their homes and then to inform him of the births, deaths, marriages, and migration which had occurred in their villages so that he could check up on the schedules they had filled in.

When omissions of births and deaths were found in some of the big villages more reporters were secured. According to our experience each reporter and his family members should not be responsible for more than 200 people or about 40 families. If there are more than 200 people or more than 40 families in the village another reporter should be added. In the end the number of local reporters was raised to 202.

After careful consideration it was decided not to take a census in Hsiao Chi until the registration work was well started. A census was taken just after the Chinese New Year, the latter half of February and the first half of March, 1932. This gave a population base for the middle of the first registration year. After that, the population base was calculated by subtracting deaths from births during the ensuing year and adding or subtracting net migration into or out of the community during this period. The results of the census will be presented in some detail following this introductory chapter devoted to a description of the general method of the study.

#### Field Checks

As has been said, the supervisor interviewed the reporters at least once a month. He paid attention to their attitudes toward the work and the ways they talked about registration. Very often he checked the information given by the people of one village by questioning the people



who lived in the neighboring village; thus he often secured additional reporters. He made friends with all sorts of people — midwives, church members, Taoists, quack doctors, sorceresses and others. They all helped in the work of vital registration to some extent. By paying attention not only to the attitudes of the people and their casual talk but also to the number of pregnant women in each village, and the number of married women between ages 15 to 49 the supervisor got an additional check on births. For the registration of deaths he paid attention to the notes written "nothing untouchable" pasted on every door in the village, the spirit tablet sitting against the wall in the house, the remnant of the mat and the bed straw from the deceased's bed burnt outside the village, the half-mourning worn by the people, the new tombs, and the small coffins or straw packets with corpses hanging in trees. These are the outward signs of deaths having occurred in the locality.

The census was taken as of March 1, 1932. To take this census, eight people from the region were hired to help in the work. They were all well recommended by people known to the supervisor and were chosen by him. They lived in different sections of Hsiao Chi. Each person was responsible to complete his work in the section where he lived and which he knew well. During the first few days the supervisor took his time to explain the census schedules to his helpers, to go with them to the villages and to show them how the schedules should be filled in and what attitudes they should take towards the people. It took one month to make the enumeration but the data were adjusted to March 1 so that the census figures were stated as of that day. After all the census records were returned, the supervisor checked the figures by going to each family himself. In the course of going around in this way to check the census records he was accompanied by the Militiaman who was appointed by the Bureau of Local Safety. He spent more than three months at this work. During the time of checking the census records the supervisor also checked the registration of births, deaths, marriages, and migrations from September 1, 1931. In this way he assured himself that the data on age and sex given in registration schedules checked with those given in census returns. It is believed that this cross checking added materially to the accuracy of both the census and the registration. All the births and immigrants were registered and copied down in census schedules and all deaths and out-migrants were marked in census schedules with special signs. Thus the discrepancies between the registration data and the census data were brought to light.

## CHAPTER II

### RESULTS OF THE CENSUS IN HSIAO CHI: THE CHINESE FAMILY AND ITS LAND

Before discussing the Chinese family, we should first make clear the use of the terms "family" and "household". The term "family" means the group consisting of all relatives living and eating together. It may be a family consisting of only husband, wife and their children, or consisting of persons having more than seventy different degrees of relationship. The term "household" means the group consisting of all relatives and the non-relatives, such as hired laborers, living and eating together.

We are frequently told that the Chinese family is of the "large family" type. It was the "large family" in former times so it is still in some cases. But careful observers have noted that the "large family" type is becoming less common. In the Kiangyin registration area we found that the mean size of the family was 4.7 persons, the median size was 4.9, and the modal family was 4.5 (Table 1). Obviously the family was not "large" in type. The household also was small. In this group the mean, median, and mode were 4.8, 5.0 and 4.5 persons per household respectively. This small family in Hsiao Chi can be compared with the size of the family as ascertained from other studies in China and with that of the farm family in the United States. The median size of the former was 4.48, and in the United States in 1930 was 4.02. Thus we see that the size of the family in Kiangyin was somewhat larger than that in other parts of China and considerably larger than the farm family in the United States.

It is believed that the size of Chinese families is becoming smaller from year to year. The chief reasons for the belief are: (a) The growth of communication and transportation facilities is broadening the contacts of the people in this community, with the result that the family is losing its hold over the younger people. They are no longer willing to have the family dominate their lives as it has done heretofore. The solidarity of the Chinese is breaking up. (b) New and often better economic opportunities are offered in the cities. In order to get better wages, people leave their homes in the country and go to the cities hunting jobs. Naturally they desire to spend the money or save the money for themselves or for their own wives and children rather than to send it back to their family. As a result the old family economic pooling system has become weakened. (c) The large type of family is penalized by the heavy taxation levied by the government. In order to avoid the taxes and to shift their burdens to their sons the parents very frequently send their children to live by themselves as soon as they are grown. For instance, since the "ten-mow contribution" was levied in 1927 on the people in this area, many families have split up in order to make the size of farm smaller for each family and to avoid the so-called "ten-mow contribution". By "ten-mow contribution" is meant that if a farm family owns ten mow of land the family is required to pay three dollars to the Bureau of Local Administration to support the corps of local police; if it possesses more it is required to pay accordingly. But those who own less than ten mow of land are free from this contribution. It has come about, therefore, that many families owning more than ten mow of land have divided it among the sons in order to make the size of farm smaller, thus avoiding the ten mow contribution.

### Economic Status of the Families

The families have been classified by size and by economic status. Table 2 shows that the rich families were largest and the poor families were smallest. There were 6.8 persons per family among the rich, 5.7 persons among the well-to-do and 4.1 persons among the poor. The criteria adopted for determining "rich", "well-to-do" and "poor" are as follows. It is very difficult to group families according to "rich", "well-to-do" and "poor" since many items should be taken account of and many people will not tell the truth. Furthermore, the so-called rich family in this section might be rated as the poor family in another section. Each locality has its own standard. Because of difficulties in defining the terms and in getting people to tell the truth we were very careful to choose competent local enumerators who were carefully instructed how to rate the families before going out to take the census. After the data were returned the supervisor checked them by going to the village heads, his relatives, and friends. It was understood that those families which had sufficient food to eat and sufficient clothes to wear were classed as rich families; those families which had a doubtful sufficiency of food and clothes were classed as well-to-do families; and those families which had very insufficient food and clothes were classed as poor families. On this basis the rich families in Hsiao Chi region would receive an annual income of about four hundred dollars (Chinese) or more; the well-to-do families one hundred to four hundred; and the poor families one hundred or less.

Table 2. Economic Status and Size of Family and Household in Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932

Economic status	Number of families	Percent of families	No. of persons in the families	No. of persons in the households	Persons per family	Persons per household
Rich	198	4.3	1,346	1,660	6.8	8.4
Well-to-do	1,242	27.1	7,066	7,198	5.7	5.8
Poor	3,139	68.6	12,931	13,006	4.1	4.1
Total	4,579	100.0	21,343	21,864	4.7	4.8

Table 2 shows that the higher the economic status of the family the larger is its size. In western countries large families are more common among people with lower economic status than among families with higher economic status. Probably in the West the voluntary limitation of children is more common among the well-to-do than among the poor, and more common among the rich than among the well-to-do. That the rise of the standard of living tends to decrease the number of children born to a family is a common observation. In China there is no evidence that the upper classes have much, if any, knowledge of contraception. A study made by J. B. Criffin (18) (See Appendix III) showed that 74 literate fathers with literate wives had an average of 4.38 living children; 197 literate fathers with illiterate wives had 3.94; and 39 illiterate fathers with illiterate wives

had 3.38. Of these three groups the figures for dead children were respectively: 1.91, 1.73, and 1.77. In a study of the relation of education to the size of the family, Professor H.D. Lamson (20) found that fathers who were returned students (from abroad) had an average of 5.44 living children; fathers with college education (in China) had 5.29; fathers with middle school education had 4.98; and fathers with primary school education had 4.65. Tentatively we may assume that the number of births was not materially affected by the social and the economic standing of the family but the number of surviving children increased as the economic standing of the family was raised. In the Kiangyin registration area it is only reasonable to believe that a larger proportion of all children born in families with higher economic status do survive and remain at home. This is because of the higher child mortality in poor families, and the larger emigration of children from these families into other districts. Besides, the rich families are increased by the fact that more relatives come to live with them. In general, the lower the economic status of a family the weaker and more unstable the family is. Because of economic stringency, very often the husbands leave their wives or the wives leave their husbands to go to the city to earn a living. Each year many people from the poorer families leave the farm. Since the term "family" is understood as a family consisting of all relatives who share the family budget, the size of the family with poor economic status is almost certain to be smaller. Because of hardship the members of the poorer families more frequently emigrate. In this way they build up more contacts with other communities than the people with higher economic status. This situation encourages the poor people to be more individualistic. Folkways and mores more rapidly lose their hold among the poor. In many poor families the family head has a very difficult position. The separation between him and his brothers or his sons is always earlier than in the case of the rich.

In the household the situation is the same as in the family -- the higher the economic status of a household the larger its size. But the decline in the size of the household followed the decline in the economic status more rapidly than did the decline in the size of the family. Table 2 shows that the size of poor families and the size of poor households are almost the same. This is the result of the very small size of farms among poor people. The poor farmers rarely hired any farm laborers. On the other hand the large landowners, i.e., the rich farmers, hired laborers to cultivate the land. Sometimes they did not even go to the field themselves. Furthermore many of the rich people live in market towns rather than in the farm villages. They are often engaged in business and employ a large number of clerks. This is a very important reason for the much larger size of household than of family among rich people (See Table 2).

#### Families Classified According to Ownership of Land

When grouped by land tenure the family of part-owners was larger than that of either owners or tenants (See Table 3). It may be that when a family has been growing larger, the family buys or rents more land in order that all the family members may have enough work to do and enough food to eat. Generally the successful farmers in the country do not like their sons to leave the farm and to change into other occupations. It happens, therefore, that in spite of the occurrence of flood and drought and

the decline in the prices of farm products in the past several years there is a continuous buying and renting of land because there is not much profit from cultivating the land by hiring farm laborers.

Table 3. Number and Percent Distribution of Families and Size of Families by Land Tenure, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Land tenure	Number of families	Percent of families	Number of persons	Persons per family
Owner	306	8.3	1,329	4.3
Part owner	1,809	48.8	10,363	5.7
Tenant	1,587	42.9	6,864	4.3
Total	3,702	100.0	18,556	5.0

#### Size of Farm and Size of Family

The size of the farm is measured in terms of crop area farmed by a family. In this community an increase in the size of the farm seems to be rather closely related to an increase in the size of the family (Table 4). The families with smallest farms had 3.5 persons as compared with 7.6 persons on the largest farms. It would naturally happen that the family with a higher economic status would add to the size of its farm both with a view to having enough land for its labor force and with a view to having a piece of land for each descendant. The family with a low economic status which is unable to increase its land might decrease its size by migration to the cities (Shanghai and Wusih), by premature deaths from inadequate nourishment and care, by sale or gift of children, by infanticide, or by sending the children to an infant asylum.

Table 4. Number and Percent Distribution of Families and Size of Families by Crop Area of Farms, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Crop area (shih-mow)*	Number of families	Number of persons	Percent of families	Persons per family
Under 2.50	718	2,535	19.4	3.5
2.5 - 4.99	1,005	4,216	27.2	4.2
5.0 - 7.49	614	2,957	16.6	4.8
7.5 - 9.99	278	1,532	7.5	5.5
10.0 -12.49	297	1,628	8.0	5.5
12.5 -14.99	223	1,356	6.0	6.1
15.0 and over	567	4,332	15.3	7.6
Total	3,702	18,556	100.0	5.0

\* 1 shih-mow equals 0.06667 Hectare or 0.1644 Acre.

The size of farm in Kiangyin registration area is very small. Of 3,702 total farm families about 70.7 percent had less than ten mow (10 shih-

mow = 1.64 acres) per family and 46.6 percent had less than 5 mow (.82 acre). This small size of farm is the result of an increasing population in a region where the area of tillable land cannot be increased.

#### Economic Status and Size of Farm

When grouped by rich, well-to-do, and poor there is a significant increase in crop area per family or per person as the economic status of the family improves. It is noted that an average rich family possessed 29.7 mow of cultivated land as compared with 13.4 for the well-to-do family and 4.8 for the poor family (See Table 5). It is further noted that of 3,702 families 64.6 percent were poor families, 30.9 percent were well-to-do, and only 4.5 percent were rich. The large majority of families in the Kiangyin registration area must be classed as poor. Most families were poor because of the smallness of their farms. In order to increase the economic status of the family an expansion of the size of farm is essential. According to the agricultural experts a farmer must have at least 10 mow of cultivated land before he can earn a good living. In the Kiangyin registration area the rich family possessed but 4.3 shih-mow of cultivated land for each member. In western countries a farmer possessing 4.3 mow (.7 acre) for each member of his family cannot possibly be called rich.

Table 5. Size of Farm Classified by Economic Status of Family, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Economic status	Number of families	Crop area (shih-mow)	Percent of families	Percent of crop area	Crop area per family	Crop area per person in family
Rich	165	4,900	4.5	15.4	29.7	4.3
Well-to-do	1,146	15,368	30.9	48.3	13.4	2.3
Poor	2,391	11,529	64.6	36.3	4.8	1.1
Total	3,702	31,797	100.0	100.0	8.6	1.7

Unfortunately, the small farm is found not only in this area but throughout China. In a survey (14) made in May, 1934 through its 6,000 reporters situated in 22 provinces, the National Agricultural Research Bureau of the Ministry of Industries found that 36 percent of the farms in China were under 10 mow (1.64 acres), 25 percent were between 10 and 20 mow (1.64 and 3.28 acres), 14 percent were between 20 and 30 (3.28 and 4.93 acres), 17 percent were between 30 and 50 mow (4.93 and 8.22 acres), and only 8 percent were over 50 mow (8.22 acres). Obviously, most of the Chinese farmers had very small holdings. Dr. D.K. Lieu had estimated (23) that the average area of crop land per farm family in China was 21 mow (3.45 acres), and Mr. C.C. Chang estimated (8) 3.4 mow (.56 acre) of farm land per person. Furthermore, it seems that there is little hope for expansion in the future. All those lands which are uncultivated (about 88 percent) are largely submarginal lands. There is little possibility of agricultural expansion. Dr. G. B. Cressey (15, p.21) states, "Except in portions of northern Manchuria, almost all land suitable for cultivation is utilized

to the limit. Even in remote valleys amid almost inaccessible mountains the industrious farmer has taken advantage of every possibility of tilling the soil. The experience of the writers and that of others who have traveled extensively in China agree on this point. Contrary to certain misconceptions, China does not possess vast areas of good unused agricultural land. There are, to be sure, large tracts with but a scanty population, but these regions are too dry or too cold or have too infertile a soil to support many more people than they now have. Merely to state that six-sevenths of the population are concentrated in one-third of the area is to give the impression that the population problem is largely one of maldistribution. The fact is that two-thirds of the country has the capacity to support a population only one-sixth as great as the remaining third. All parts of China are essentially filled to their capacity under available methods of production.\*\*

#### Size of Farm and Land Tenure

The size of farm varies with the land tenure of a family. In Table 6 it is shown that the part-owners had the largest farms and the tenants the smallest. The part-owners also had the largest families. Generally speaking, people living in a larger family work more co-operatively and can farm more land proportionally than those living in a smaller family. Besides, the larger sized farm generally has a better equipment of farm tools and hence a more efficient use of capital. The tenant with a small farm is at a decided disadvantage. There were 2.2 shih-mow per capita for part-owners as compared with 1.7 shih-mow for owners and 1.0 shih-mow for tenants.

Table 6. Number and Percent Distribution of Farm Families and of Shih-mow in Crops, and Crop Area per Family and per Capita, by Land Tenure, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Land tenure	Number of families	Crop area (shih-mow)	Percent of families	Percent of crop area	Crop area per family	Crop area per person in family
Owner	306	2,257	8.3	7.1	7.4	1.7
Part-owner	1,809	22,754	48.8	71.6	12.6	2.2
Tenant	1,587	6,786	42.9	21.3	4.3	1.0
Total	3,702	31,797	100.0	100.0	8.6	1.7

Of 3,702 farm families, 42.9 percent were tenants, 48.8 percent part-owners, and 8.3 percent owners (Table 6). This shows the high proportion of farm tenants in Kiangyin. Probably the Kiangyin registration area has a higher proportion of tenants than most parts of China. Making a survey (14) during May, 1934 through its 6,000 crop reporters situated in 22 provinces, the National Agricultural Research Bureau of Ministry of

\* See Appendix I, Part I, for Thompson's opinion on this point.

Industries found that of all farm households 46 percent were owners, 25 percent were part-owners, and 29 percent were tenants (Table 7).

Table 7. Percent Distribution of Farms by Land Tenure, Provinces of China, 1934.

Province	No. of Hsien reporting	Tenants (%)	Part-owners (%)	Owners (%)
Chahar	6	27	25	48
Suiyuan	11	19	20	61
Ningsia	6	30	9	61
Tsinghai	7	20	25	55
Kansu	21	20	18	62
Shensi	51	20	22	58
Shansi	78	14	20	66
Hopei	107	11	21	68
Shantung	85	9	19	72
Kiangsu	48	32	28	40
Anhwei	42	41	27	32
Honan	73	20	24	56
Hupeh	28	39	28	33
Szechuan	59	58	22	20
Yunnan	31	41	31	28
Kweichow	21	43	25	32
Hunan	39	46	30	24
Kiangsi	24	30	35	35
Chekiang	45	47	33	20
Fukien	29	43	32	25
Kwangtung	39	49	30	21
Kwangsi	41	41	27	32
Wt. average	891	29	25	46

The high proportion of tenancy in the Kiangyin registration area is largely due to the very high fertility of the land, the stability of local government, and the availability of working capital. Since land is immovable many people have thought that buying the land was the safest investment. Before 1928 the value of farm land in Kiangyin registration area was exceedingly high. It was one hundred to two hundred and fifty dollars per mow (\$600 to \$1,500 per acre). Owing to the low prices of farm products and tightness of money since 1928 the prices of land have gone down. In the year 1934, the value of farm land had declined to fifty or one hundred dollars per mow (\$300 to \$600 per acre). But despite the decline in the prices of farm products and the tightness of money, there is a continuous buying and selling of the land at the present time. The proportion of farm tenants is increasing. We have noted that most farmers in the



country were in debt. Because many of them were unable to pay the interest on their debts for some years many farms were taken by the creditors. Thus many debtors who were owners and part-owners have now become tenants.

There is no doubt that the tenancy system affects the economic conditions of a community. Table 8 shows the relationship of the economic status of a family to its farm ownership. Obviously the owners and part-owners are much better off than the tenants. In order to raise the economic status it seems necessary for a tenant to advance from his tenant position to the owner position. People are poor because they have no land of their own. We would advocate that those who till the land should own it. But how is it possible for those who cultivate the land to have land of their own? How is it possible for the poor farmers with very small farms to buy back the land from the landlords?

Table 8. Number and Percent Distribution by Farm Ownership, of Families by Economic Status, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Economic status	Number of families				Percent of families			
	Owner	Part-owner	Tenant	Total	Owner	Part-owner	Tenant	Total
Rich	47	117	1	165	28.5	70.9	0.6	100.0
Well-to-do	104	937	105	1,146	9.1	81.7	9.2	100.0
Poor	155	755	1,481	2,391	6.5	31.6	61.9	100.0

In Table 9 we note that of owner families 50.6 percent were poor families; of part-owner families 41.7 percent; and of tenant families 93.3 percent. Half of the owners and about two-fifths of the partowners were poor people. Clearly, farm ownership in Hsiao Chi does not prevent poverty. The fundamental question is the question of the shortage of farm land. Professor J.L. Buck, discussing this problem, states, (7) "The remedies for this too small size of farm business are difficult to find. Colonization seems scarcely the solution, since lands for such extensive colonization as would be needed are limited, even in Manchuria and the Northwest. Moreover, unless something is done to check the growth of population, colonization will do little permanent good. The same may be said of drawing men from the land to industry. As China becomes modernized, it is inevitable that industries will develop and a certain number of the country people will be absorbed into them. Yet it can scarcely be hoped that sufficient numbers of them will be so absorbed as to relieve the present agricultural situation very much. The best future solution of the problem seems to be in some method of population control, and the best immediate solution, more intensive methods of raising crops and the growing of crops that produce more food per unit of land. Such productivity, however, will also be useless if population continues to grow." (7, p.424).

Table 9. Number and Percent Distribution by Economic Status of Families by Farm Ownership, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Farm ownership	Number of families				Percent of families			
	Rich	Well-to-do	Poor	Total	Rich	Well-to-do	Poor	Total
Owner	47	104	155	306	15.4	34.0	50.6	100.0
Part-owner	117	937	755	1,809	6.5	51.8	41.7	100.0
Tenant	1	105	1,481	1,587	.1	6.6	93.3	100.0

### CHAPTER III

#### RESULTS OF THE CENSUS IN HSIAO CHI (Continued):

##### THE COMPOSITION OF POPULATION

###### Age Composition

Getting reliable information on age from the people is sometimes very difficult. The Chinese people are very superstitious, suspicious, and conservative. They do not like to have their ages known to others. When the investigator inquires their ages the people are likely to add one or two years to their actual ages. By doing so they feel that they are growing and also may be able to claim to be beyond military age. On the other hand, they not infrequently subtract one or two years from their actual ages in order to fall below the military age — 20-40. In taking the census we encountered much superstition and misunderstanding. Owing to the importance of getting reliable data on age we checked the total number of people and their ages two times from family to family. Also, satisfactory birth rates, deaths, and marriage rates can be computed only when reliable statistics with regard to age, sex, and marital status are available.

The age composition varies considerably between one population and another. The differences in age composition among different populations very often account for the different birth rates and death rates. Table 10 shows the age distribution of the population in the Hsiao Chi registration area. In this area the population had some very peculiar features in its age composition. In the first place there was some unevenness in the distribution by single years under 5. The number of male survivors at age 3, which should be less than the number of male survivors at age 2, was larger. This irregularity might result from a larger number of births three years earlier than two years earlier, from the inability to secure the exact age of young children in China, or from unusual infant mortality in a given year. The general rule for calculating age in China is that a person on reaching the first day of a new year will automatically increase his age by one year, regardless of the day of the year he was born. It happens, therefore, that a child born on the eve of the Chinese New Year is said to be one year old at time of birth and two years old on New Year's Day. Although we have adjusted the Chinese ages to the western ages by subtracting one year from the Chinese it is quite possible that some errors are still present and the effect of those errors on the distribution by single years of age may account for some irregularities. Besides, getting reliable data on the ages of children in China is sometimes very difficult.

In the second place there was a very large drop in number of people between the ages of 60-64 and 65-69 in both the male and the female population, but especially the male population. This is probably the result of the Taiping Rebellion which occurred in 1856 to 1860. During this period, hundreds and thousands of people in Kiangyin were killed by the rebel army. This event is well remembered by aged people. We are told that in Kiangyin city only three persons were not killed during that time. Of course this is an exaggerated statement, but we are sure that during the time of the disturbance most people left Kiangyin and went to the north of the Yangtze River for refuge. After the Taiping army was defeated they

Table 10. Number and Percent Distribution by Age, of Rural Population by Sex, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Age	Number of persons			Percent		
	Both sexes	Males	Females	Both sexes	Male	Female
0	823	458	365	3.8	4.0	3.6
1	795	433	362	3.7	3.8	3.5
2	703	374	329	3.2	3.2	3.2
3	700	409	291	3.2	3.5	2.8
4	554	328	226	2.5	2.8	2.2
0-4	3,575	2,002	1,573	16.4	17.3	15.3
5-9	2,817	1,591	1,226	12.9	13.8	11.9
10-14	2,289	1,266	1,023	10.5	11.0	9.9
15-19	1,936	1,072	864	8.9	9.3	8.4
20-24	1,803	927	876	8.2	8.0	8.5
25-29	1,637	855	782	7.5	7.4	7.6
30-34	1,516	751	765	6.9	6.5	7.4
35-39	1,344	662	682	6.1	5.7	6.6
40-44	1,125	590	535	5.1	5.1	5.2
45-49	956	530	426	4.4	4.6	4.1
50-54	950	505	445	4.3	4.4	4.3
55-59	802	382	420	3.7	3.3	4.1
60-64	666	301	365	3.1	2.6	3.6
65-69	207	62	145	0.9	0.5	1.4
70-74	93	28	65	0.4	0.2	0.6
75-79	93	25	68	0.4	0.2	0.7
80-84	40	8	32	0.2	0.1	0.3
85-89	15	1	14	0.1	...	0.1
Total	21,864	11,558	10,306	100.0	100.0	100.0

returned to Kiangyin. During the time of the disturbance and during several years following the Taiping Rebellion the birth rates among the people of Kiangyin were bound to be very low. This low birth rate (for about 10 years after 1856) was responsible for the very low percent of people at age 65-69 and above. In the third place the population of Kiangyin registration area when compared with population of western countries was found to have a very large proportion of children, especially under 5, and a small proportion of people above 40 years of age. The very large proportion of children and small proportion of people above 40 are caused by the high birth rate, the emigration of young people, and the very short span of life. We found that the birth rate for four years combined was 45.1, while the death rate was 38.7. In the fourth place a larger proportion of the male population than of the female population was found in the younger age groups, 0-4, 5-9, 10-14, and 15-19, but especially under the age of 10. Also a smaller proportion of male population than of the female population was found in the age groups 20-24 and above, except in the age groups 45-49 and 50-54. The smaller proportion of female population at young ages is caused chiefly by the higher mortality of female children which in turn is

caused by the lower esteem in which females are held and by the larger emigration of female children. In middle age the proportions of males are generally smaller. The large number of male emigrants in those ages is one of the causes. The large proportion of females in the older ages is accounted for by the greater expectation of life among females.

Taking into consideration the points mentioned above we see that the population in Kiangyin registration area has a different age distribution from that in western countries. In Table 11 a comparison is made between the population in Kiangyin with that of China, of 11 European countries, of India, and of the total and rural-farm population of the United States of America. The age groups in which the people of Kiangyin have a distinctly higher percentage than those in European countries are 0-4 and 5-9. Those in which the Kiangyin people have a distinctly lower percentage are 15-19 to 45-49 and 65-69 and older.

Table 11. Percent Distribution by Age, of the Population of Hsiao Chi Registration Area, China, Eleven European Countries, India, and the Total and Rural-farm Population of the United States.

Age	Kiangyin 1932	China 1929-31	11 European countries 1900 (34,p.93)	India 1921 (19)	United States 1930	
					Total (33, Vol. 2) p.576	Rural-farm (33, Vol. 2) p. 591,597
0	3.8	3.2	2.46	2.9	1.8	2.1
1	3.7	2.4	2.43	1.4	1.8	2.1
2	3.2	2.3	2.41	2.4	1.9	2.2
3	3.2	3.1	2.38	2.9	2.0	2.3
4	2.5	2.5	2.35	2.9	1.9	2.3
0-4	16.4	13.5	12.03	12.5	9.3	11.1
5-9	12.9	11.9	11.35	14.7	10.3	12.5
10-14	10.5	9.9	10.61	11.7	9.8	12.4
15-19	8.9	9.2	9.82	8.3	9.4	11.3
20-24	8.2	8.8	8.98	8.3	8.9	8.1
25-29	7.5	8.4	8.12	8.8	8.0	6.0
30-34	6.9	6.9	7.25	8.3	7.4	5.5
35-39	6.1	6.9	6.40	6.0	7.5	5.9
40-44	5.1	5.6	5.57	6.2	6.5	5.5
45-49	4.4	5.6	4.79	3.7	5.7	5.2
50-54	4.3	4.0	4.04	4.4	4.9	4.6
55-59	3.7	3.6	3.36	1.8	3.8	3.7
60-64	3.1	2.3	2.70	2.8	3.1	2.9
65-69	0.9	1.6	2.08	0.8	2.3	2.1
70-74	0.4	0.9	1.46	1.7	1.6	1.5
75-79	0.4	0.5	0.89	...	0.9	0.9
80-84	0.2	0.2	0.41	...	0.4	0.4
85 and over	0.1	0.1	0.14	...	0.2	0.2
Age unknown ...	...	0.1	...	...	0.1	...
Total	100.0	100.0	100.0	100.0	100.0	100.0

### Age Distribution in Farm Villages and in Market Towns

There are altogether 217 farm villages and 4 market towns. The market towns are rather small. There were 343 families with a total population of 1,709 in these towns. Although these towns are small and also rural in their general characteristics the population in them has quite a different age distribution from that of the farm village (See Tables 12 and 13). In the first place there was a larger proportion of children in the

Table 12. Number and Percent Distribution by Age, of the Farm Village Population by Sex, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Age	Number of persons			Percent		
	Both sexes	Males	Females	Both sexes	Males	Females
0	771	427	344	3.8	4.0	3.6
1	735	405	330	3.6	3.8	3.4
2	656	348	308	3.3	3.3	3.2
3	660	387	273	3.3	3.7	2.8
4	528	312	216	2.6	3.0	2.3
0-4	3,350	1,879	1,471	16.6	17.8	15.3
5-9	2,649	1,508	1,141	13.1	14.3	11.9
10-14	2,117	1,166	951	10.5	11.0	9.9
15-19	1,748	942	806	8.7	8.9	8.4
20-24	1,644	834	810	8.2	7.9	8.4
25-29	1,498	775	723	7.4	7.3	7.6
30-34	1,382	665	717	6.9	6.3	7.5
35-39	1,234	595	639	6.1	5.6	6.7
40-44	1,037	536	501	5.1	5.1	5.2
45-49	861	474	387	4.3	4.5	4.0
50-54	867	455	412	4.3	4.3	4.3
55-59	739	349	390	3.7	3.3	4.1
60-64	611	273	338	3.0	2.6	3.5
65-69	194	59	135	1.0	0.6	1.4
70-74	85	26	59	0.4	0.2	0.6
75-79	89	24	65	0.4	0.2	0.7
80-84	35	5	30	0.2	0.1	0.3
85-89	15	1	14	0.1	...	0.2
Total	20,155	10,566	9,589	100.0	100.0	100.0

farm villages than in the market towns. In the market towns there were larger proportions of young people and middle-aged people such as in age groups 15-19 to 50-54 with the exception of age 40-44. This is largely explained by the fact that in market towns there is a large proportion of young and middle-aged immigrants. These immigrants come to market towns to become shop clerks, business men, mechanical laborers, apprentices, servants, and coolies. Furthermore, parents coming to market towns often leave their young children in the country, especially the young male children. They do this because the cost of living in farm villages is considerably lower.

Table 13. Number and Percent Distribution by Age, of Market Town Population by Sex, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Age	Number of Persons			Percent		
	Both sexes	Males	Females	Both sexes	Males	Females
0	52	31	21	3.1	3.2	2.9
1	60	28	32	3.5	2.8	4.5
2	47	26	21	2.8	2.6	2.9
3	40	22	18	2.3	2.2	2.5
4	26	16	10	1.5	1.6	1.4
0-4	225	123	102	13.2	12.4	14.2
5-9	168	83	85	9.8	8.4	11.9
10-14	172	100	72	10.1	10.1	10.0
15-19	188	130	58	11.0	13.1	8.1
20-24	159	93	66	9.3	9.4	9.2
25-29	139	80	59	8.1	8.1	8.2
30-34	134	86	48	7.8	8.7	6.7
35-39	110	67	43	6.4	6.8	6.0
40-44	88	54	34	5.1	5.4	4.8
45-49	95	56	39	5.6	5.6	5.4
50-54	83	50	33	4.9	5.0	4.6
55-59	63	33	30	3.7	3.3	4.2
60-64	55	28	27	3.2	2.8	3.8
65-69	13	3	10	0.8	0.3	1.4
70-74	8	2	6	0.5	0.2	0.8
75-79	4	1	3	0.2	0.1	0.4
80-84	5	3	2	0.3	0.3	0.3
Total	1,709	992	717	100.0	100.0	100.0

Migration accounts for the fact that the age distribution of the market town population is much more uneven than that of farm village population. In the second place the proportions of children 0-4 and 5-9 were much larger for females than for males in market towns, while in farm villages just the opposite conditions prevailed. To explain this difference we should take into consideration the better care of female babies living in market towns than of their sisters living in farm villages. Generally the people living in market towns are much more liberal and open-minded than people living in farm villages. Cases of infanticide and of female babies being sent to the public nurseries were rarely found in market towns. Besides, many parents coming to market towns from farm villages were inclined to bring their female children rather than to bring their male children. Female children brought to the towns are more help to their mothers in domestic affairs than boys are to their fathers in business or in the handicrafts. Probably this is the main reason why the percentage of males who were aged 5-9 in Table 13 was especially low and much smaller than the percentage of female children at the same age.

## Type of Population

The Hsiao Chi population when judged by Sundbärg's standard (Table 14) is shown to be slightly progressive. Generally it has been assumed that the Chinese population is a growing population, that it is a population of distinctly progressive type. A number of young people go from Hsiao Chi to the cities each year. The loss of these young people by emigration affects the age and sex composition of the population to some extent, lowering the proportion in the 15-49 group and raising that in the younger and older ages. The death rate in Hsiao Chi is exceedingly high and few people can hope to reach the age of 50. The very short expectation of life for the Chinese explains the relatively slow growth of the population.

Table 14. The Farm Population by Broad Age Groups in Hsiao Chi Registration Area Compared with the Rural Population of China; the Total Population of Sweden; the Probable Normal Age Distribution of the People in Eleven European Countries; the Rural-farm Population of the United States; and Sundbärg's Progressive, Stationary, and Regressive Types of Populations.

Place	Percent of population by age groups		
	0-14	15-49	50+
Kiangyin (1932)	40	47	13
China (1929-31), (11)	35	51	14
Sweden (1751-1900), (34, p. 190)	33	50	17
11 European countries (1900), (34, p. 193)	34	51	15
United States (1930), (33, vol.2, p. 591)	36	48	16
Sundbärg's standard: (34, p. 189)			
Progressive type	40	50	10
Stationary type	33	50	17
Regressive type	20	50	30

When compared with the probable normal age distribution of the people in 11 European countries, or with the total population of Sweden or the rural-farm population of the United States, the population in Kiangyin had a larger percent of people at age 14 and under and a smaller percent of people at other age groups (Table 14). Thus Kiangyin had a relatively large child population. But at ages 15-24, in young adulthood, Kiangyin had much the same proportion as most of the other countries (Table 15). France and Germany were somewhat lower on account of their low birth rates during the War, while Austria and the United States were somewhat higher, partly owing to immigration from older countries and partly owing to the rapid decline in birth rates in recent years.

We have mentioned that in the farm villages there was a larger proportion of children and in the market towns there was a larger proportion of young adults and middle-aged people. This is shown even more clearly in Table 16 where both the farm population and the market town population are grouped into: under 10, 10-19, 20-29, 30-39, 40-49, 50 and over. The farm villages have a much higher proportion of their population in the



Table 15. Distribution by Age Groups of Each 1000 Persons in Hsiao Chi, 1932, and Selected Countries\*, about 1931.

Age	Hsiao Chi 1932	England & Wales 1931	Australia 1933	New Zealand 1926	United States 1930	France 1931	Germany 1933
0-4	163.5	75	86	100	93	87	73
5-14	233.5	164	190	199	201	143	169
15-24	171.0	173	181	177	183	156	156
25-44	257.2	297	293	293	294	297	323
45 & over	174.8	291	250	231	229	317	279
All ages	1000.0	1000	1000	1000	1000	1000	1000

\* Reference 22, pp. 23-33. For Germany see the corresponding table in the 1936-37 volume.

Table 16. Percent Distribution by 10-year Age Groups of the Market Town and Farm Village Population of Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Age group	Market town	Farm villages
Under 10	23.0	29.7
10-19	21.1	19.2
20-29	17.4	15.6
30-39	14.2	13.0
40-49	10.7	9.4
50 and over	13.6	13.1
Total	100.0	100.0

under 10 group than the market towns. In the other ages they have lower proportions. This further proves that there is a relatively large migration of population into the market towns.

#### Sex Composition

In China the males predominate. Some people have found 110 males per 100 females as the sex ratio of the Chinese population. Others have found ratios of 115 and even of 120. This is certainly a very abnormal situation. This abnormality of sex composition in the Chinese population raises difficult sex problems. It has a great influence on the social life and also on the economic life of the community. It affects both the birth rates and the death rates.

In the Kiangyin registration area the sex ratio, i.e., the number of males to each 100 females was 112.1. Another way to express the same idea is to say that the male population of the district formed 52.9 percent of the whole and the female population 47.1 percent. This abnormal sex ratio can be better understood when the number of males to 100 females is studied by age groups.

Table 17. Males and Females by Age in Hsiao Chi, 1932; and Ratio of Males to 100 Females by Age, Hsiao Chi, 1932, China, 1929-31, and the United States, 1930.

Age	Hsiao Chi, 1932			China (1929-1931) (11, Vol. 12, p.95)	United States (1930) (33, Vol. II, p.567)
	Number		Ratio		
	Males	Females			
0	458	365	125.5	114	....
1	433	362	119.6	103	....
2	374	329	113.7	114	....
3	409	291	140.5	107	....
4	328	226	145.1	105	....
0-4	2,002	1,573	127.3	109	103.0
5-9	1,591	1,226	129.8	116	102.5
10-14	1,266	1,023	123.8	128	102.2
15-19	1,072	864	124.1	118	99.4
20-24	927	876	105.8	108	96.4
25-29	855	782	109.3	107	97.7
30-34	751	765	98.2	114	100.1
35-39	662	682	97.1	113	103.3
40-44	590	535	110.3	107	107.3
45-49	530	426	124.4	100	108.9
50-54	505	445	113.5	107	110.1
55-59	382	420	91.0	86	109.3
60-64	301	365	82.5	91	107.3
65-69	62	145	42.8	78	104.8
70-74	28	65	43.1	66	103.5
75-79	25	68	36.8	66	98.0
80-84	8	32	25.0	64	88.6
85 and over	1	14	7.1	25	75.4
Age unknown ...	...	...	.....	238	.....
All ages	11,558	10,306	112.1	109	102.5

Table 17 shows the great dominance of males at ages under 20 and at ages 40-54. The large excess of males in young ages is caused mainly by the unequal death rates of males and females in infancy and early childhood, although, as elsewhere, the number of male births exceeds that of female births. Also because female babies are less esteemed than male babies they are more frequently killed right after they are born than are males. Then, too, the very fact that female babies are less esteemed than male babies leads to greater neglect of the former in the early days and weeks of life when the quality of the care is decisive. It is probably neglect rather than infanticide which is responsible for the higher infant mortality among females. Girl babies are also more frequently sent to the Kiangyin nursery and they are more frequently brought to cities such as Shanghai and Wusih for sale. This is especially true in times of crop failure, economic depression, political disturbance, and social instability. During the four years, 1931-1935, the death rate of female children was much higher than that of male children and a larger number of female child-

ren were moved out. At ages 20-24 the ratio of males to females declined greatly and at ages 30-39 females were more numerous than males.

The explanation of this large reduction in masculinity at ages 20-24 up to 35-39 is to be found in the large emigration of males at those ages in recent years. We recall vividly the events which occurred in 1927 in Hsiao Chi. It was the year when the communists raged. Nearly two-thirds of the buildings in the Hsiao Chi first market town were burned down and more than five hundred thousand dollars were lost. In 1927 and the following year a large number of young men left the farm. This large movement of young men was largely responsible for the lower sex ratio from ages 20-24 to 40-44 and especially at ages 30-34 and 35-39. The lower sex ratio at ages 55-59 and over is probably to be explained chiefly by the longer span of life for females.

Probably the factors mentioned above are the main causes that have tended to disturb the normal sex ratio of the population in the Kiangyin registration area. The high degree of masculinity found in other rural districts in China may be due to the same reasons. In a study of 22 localities in 11 provinces, C.M. Chiao found 109 males to 100 females (Table 17). This proportion of males to females is certainly much higher than in most other lands. In European countries, more females than males are generally found. For instance the sex ratio in England and Wales was 91, in France 91, in Germany 94, and in Sweden 96.

The low masculinity in these European countries, except Sweden, is due in part to the loss of many young men in the World War and in part to over-seas migration. In Sweden this latter is the chief factor. In the population of the United States a slight excess of males is found. In 1930 the sex ratio for the whole country was 102.5. This excess of males is caused by a larger immigration of males than females into the country. The effects of immigration into the United States are particularly noticeable in the high sex ratios at ages 40-44 to 60-64. (Table 17). The excess of males at these ages can be attributed directly to the excess of males among the immigrants arriving between 1890 and 1915. The limitation of immigrants since 1921 has resulted in a more normal sex distribution of population in the United States at the younger ages. We have mentioned that the sex ratio for the population in the United States of America in 1930 was 102.5; in 1920 it was 104.0.

The sex ratio of the farm village population is much lower than that of the market town population (See Table 18). The sex ratio of the

Table 18. Sex Composition of the Market Town and Farm Village Population in Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Place	Total Population	Percent of total population		Ratio of males to 100 females
		Males	Females	
Market town	1,709	58.0	42.0	138.4
Farm village	20,155	52.4	47.6	110.2
Total	21,864	52.9	47.1	112.1

farm population was only 110.2, while that of the market town population was 138.4. This is explained by the fact that the opportunities for employment are less for women than for men in market towns.

#### Educational Composition

Educationally China is a backward country. The general mass of the people are illiterate. They are unable to read or write. Some students have estimated that more than eighty-five percent of the people in China are illiterate, while others have placed the proportion still higher. In the Kiangyin registration area we have found that of 13,183 people aged above 15 years only 11.9 percent were literate (See Table 19). This large proportion of illiteracy made our vital registration work difficult from the beginning. Probably the greatest obstacle to rural reconstruction is the illiteracy of the people. Furthermore, many so-called literate people in China might still rank as illiterate if they are judged by the standard of literacy in western countries. When inquiring the educational status of the Hsiao Chi population we used this standard: those who were able to read and to write farm business accounts and contracts for the sale of rice fields were ranked as literate, otherwise they were ranked as illiterate.

Table 19. Number and Percent Distribution by Literacy of Persons 15 Years of Age and Over, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Educational status	Number of persons			Percent		
	Both sexes	Males	Females	Both sexes	Male	Female
Literate	1,572	1,491	81	11.9	22.3	1.2
Illiterate	11,548	5,201	6,347	87.6	77.6	97.9
Unknown	63	7	56	0.5	0.1	0.9
Total	13,183	6,699	6,484	100.0	100.0	100.0

When the population is divided by sex it is found that 22.3 percent of the male population is literate as compared with only 1.2 percent of the female population. This is another evidence of the lower esteem in which females are held. There is a Chinese saying that "women without talents are virtuous".

#### Marital Composition

In the population 15 years old and over the excess of males over females amounted to 215 or 3.3 percent (See Table 20). Among single persons the males exceeded the females by 898, i.e., they were almost two and one-half times as numerous. The number of divorced persons, both males (32) and females (2) was negligible. Among married persons the excess of females was 200 or 4.5 percent, while among the widowed, females were about twice as numerous as the males, there being 1120 widowed females and only 582 widowed males. The disparity in the unmarried is caused by the excess of males over females and the later age at which men marry. The principal reason for the disparity in the married is that more married men left their

wives in the country while they went out to seek jobs; for the disparity in the widowed the explanation is found in the tradition of not allowing the women, especially the rich women, to remarry, and the greater longevity of women than of men; for the disparity in the divorced the reason is found in the lesser difficulty of women than men in finding a new partner after being divorced. The women generally take the initiative in securing divorce. This area is not far from the industrial cities of Wusih and Shanghai. There are a number of people each year who leave the farm and go to these cities seeking jobs. After working in cities two or three years they are often greatly influenced by urban life. It often happens that after a girl has worked in the city she is not willing to marry a farm boy. When a married woman goes to the city she will not love her husband again since her husband is still a farmer. An example may be cited: in D- village there is a farmer whose name is L-. His wife had worked in Shanghai for several years. Sometime in July of the year 1933 she ran away with her lover, a factory laborer, to Shanghai even though the woman had given several children to L-'s family. Again in a village named Sh- divorce cases frequently occur. The people living in other villages were quite embarrassed to let their boys become engaged to and marry the girls of Sh- village. In 1930, two girls living in Sh- village broke their engagements and two women got divorced.

Table 20. Number and Percent Distribution by Marital Condition of Persons 15 Years of Age and Over, by Sex, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Marital status	Number of persons			Percent		
	Both sexes	Males	Females	Both sexes	Male	Female
Single	2,064	1,481	583	15.7	22.1	9.0
Married	9,112	4,456	4,656	69.1	66.5	71.8
Widowed	1,702	582	1,120	12.9	8.7	17.3
Divorced	34	32	2	0.3	0.5	....
Unknown	271	148	123	2.0	2.2	1.9
Total	13,183	6,699	6,484	100.0	100.0	100.0

#### Occupational Composition

The occupational composition of the population in the Kiangyin registration area is shown in Table 21. Of the total population, 25.4 percent engaged in the work of agriculture; 24.6 percent in housekeeping; 6.8 percent in mechanical industries, commercial work, professional service, domestic work and public service; and of the rest, 29.4 percent were dependents and 13.8 percent did not report an occupation. The largest proportions of the people were engaged in agriculture and housekeeping. By the latter is meant the work of cooking, sewing, cleaning, and weaving cotton cloth both for home use and on contract, and other domestic tasks. The women rarely go to the fields to cultivate the land. They sometimes help to thrash wheat and rice after they have been harvested but they spend most of their time at domestic affairs. That "men take charge of work

outside the house and women inside" is the custom. When there is no farm work the men generally have no work at all, but many of the women weave cotton cloth. The local industry of weaving cotton cloth is well-developed in Hsiao Chi. In almost every family there is at least one loom. That "the man farms, the woman weaves" is the saying. The dependents given in Table 21 are the children under seven years of age, the aged, and also the unemployed workers. The number of unemployed workers has been increasing. Because of the decline in the price of farm products few people could hire farm laborers. The mechanical workers are largely the tailors, carpenters, masons, barbers, and others. Then, there are the domestic servants, those engaged in professional service -- largely the local physicians, the school teachers, the sorcerers and fortune tellers; and those engaged in public service -- the militiamen.

Table 21. Number and Percent Distribution by Occupation, of the Population by Sex, Hsiao Chi, Kiangyin, Kiangsu, China, March 1, 1932.

Kind of occupation	Number of persons			Percent		
	Both sexes	Males	Females	Both sexes	Male	Female
Dependents*	6,429	3,576	2,853	29.4	30.9	27.7
Agriculture **	5,553	5,498	55	25.4	47.6	0.5
Housekeeping	5,382	15	5,367	24.6	0.1	52.1
Mechanical industries	694	667	27	3.2	5.8	0.2
Commerce	559	488	71	2.6	4.2	0.7
Professional service	159	142	17	0.7	1.2	0.2
Domestic service	52	20	32	0.2	0.2	0.3
Public service	20	20	....	0.1	0.2	....
Unknown	3,016	1,132	1,884	13.8	9.8	18.3
Total	21,864	11,558	10,306	100.0	100.0	100.0

\* No occupation, school children and children under age 7.

\*\* Farm operator, farm hand, and farming with other occupation.

## CHAPTER IV

### MARITAL CONDITION

The proportion of married people, especially in early adult life, is largely determined by the marriage customs of a locality. In the male population 15 years old and over on March 1, 1932, the proportion married for Hsiao Chi was 66.5 percent; in the female population the proportion married was 71.8 percent (Table 20). This is a very high proportion of married people. Of the total male population in the United States over 15 years of age on April 1, 1930 (33, Vol. 2, Chap. 11) only 60.0 percent were married while 34.1 percent were single, 4.6 percent were widowed and 1.1 percent were divorced; of the total female population, only 61.1 percent were married, 26.4 percent were single, 11.1 percent were widowed and 1.3 percent were divorced. The very high proportion of people married in the Kiangyin registration area is principally determined by the high marriage rate and the practice of early marriage.

#### Marriage Rate

By marriage rate is meant the number of marriages per thousand persons in the population. It is influenced by the age distribution of the population and the ratio of the sexes at marriageable ages as well as by the social, economic, and climatic conditions. In the Kiangyin registration area, November, December, and January are the most popular months for weddings. The most unpopular months for weddings are June, July, and August. For the unpopularity of weddings during summer months there are several reasons. In the first place, it is so hot during these months that the food prepared for feasts is likely to spoil. The Chinese people generally are greatly concerned over such an event as marriage. At wedding time they enjoy receiving a large number of guests and they like to prepare the feasts lavishly. Many people go into debt to celebrate a wedding ceremony. "Only once within one life" is the saying. In the second place, the people in the country are so busy during the summer time that they are not inclined to hold weddings. In the third place, the Chinese people are quite superstitious. The marriage date must be a good day. All the dates, good and bad, are well described and fixed in the lunar calendar. One must marry on a good date according to this calendar. We have looked over the lunar calendars of several years and we have found but a very few good days assigned to the summer months. Under these conditions one would not be much surprised to find few weddings during the summer. During November, December, and January the people have most leisure and they also have money since they have recently sold their farm products. Besides, during this time the climate is favorable for preserving the food, hence the feasts can be arranged without danger of spoilage.

The marriage rate varies from season to season and from year to year. The marriage rate for the first year, 1931-1932, was 10.0 as compared with 8.1 for the second year, 1932-1933, 7.9 for the third year, 1933-1934, and 9.3 for the fourth year, 1934-1935 (See Table 22). The change in the marriage rate from year to year is due to changing economic conditions, the cholera epidemic in 1932 and the malaria epidemic in 1933.

Because of economic stringency many people found it impossible

Table 22. Marriages and Marriage Rate by Months, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931 - August, 1935.

Months	No. of marriages				Marriage rate*					Percent of annual rate				
	1931 -32	1932 -33	1933 -34	1934 -35	1931 -32	1932 -33	1933 -34	1934 -35	1931 -35	1931 -32	1932 -33	1933 -34	1934 -35	1931 -35
Sept.	4	6	4	7	2.2	3.4	2.3	4.0	2.9	22	42	29	43	33
Oct.	12	9	10	10	6.6	5.0	5.7	5.7	5.7	66	62	72	61	65
Nov.	30	23	19	18	16.5	12.8	10.8	10.3	12.6	165	158	137	111	143
Dec.	37	21	16	28	20.3	11.7	9.1	15.9	14.3	203	144	115	171	162
Jan.	48	26	34	51	26.3	14.5	19.3	29.1	22.3	263	179	244	313	253
Feb.	15	20	26	24	8.2	11.2	14.7	13.7	11.9	82	138	186	147	135
Mar.	18	28	22	30	9.9	15.6	12.5	17.1	13.7	99	193	158	184	156
Apr.	30	28	12	9	16.5	15.6	6.8	5.1	11.1	165	193	86	55	126
May	13	3	13	9	7.1	1.7	7.4	5.1	5.3	71	21	94	55	60
June	7	3	1	4	3.8	1.7	0.6	2.3	2.1	38	21	8	25	24
July	2	2	6	3	1.1	1.1	3.4	1.7	1.8	11	14	43	18	20
Aug.	2	4	5	3	1.1	2.2	2.8	1.7	2.0	11	27	35	18	23
Year	218	173	168	196	10.0	8.1	7.9	9.3	8.8	100	100	100	100	100

\* Number of marriages per total mid-year population.

to spare money for a wedding; also because of lack of economic opportunity more young men and young women have left the area and gone to other places to earn their living. Many of them are bound to postpone marriage. Furthermore, the catastrophes of cholera and of malaria killed many who were ready to be married. Hence, it is to be expected that the marriage rate would decline in the second and third years of registration.

In recent years the rearing of a fiancée for a son or for a grandson has been more widely practiced than ever before. When the parents believe that it may be difficult to find a life mate for their sons when they come to marriageable age they adopt the practice of buying female children from poor families when prices are low. The female children thus brought to their homes later become the wives of the sons of the family. Very recently we have observed that in order to save the money involved in a regular marriage the parents let the boy and the girl sleep together stealthily. When later the first-born child of the girl is delivered it is then announced that the marriage has taken place. Owing to economic difficulties, the practice of rearing a fiancée for a son or for a grandson is probably going to be more widely practiced. We are, therefore, inclined to think that the marriage rate in the future will go back to 10.0 or 10.5

The marriage rate in the Kiangyin registration area for the four years combined, 1931-1935, was 8.8. This rate is higher than the rates in most countries in the world (1, p.806; 2, p.805; 3, p.585; 4, p.477; 22, p. 47).



## Age at Marriage

In the Kiangyin registration area the desire for sons is strong. "Provided you expect to have bountiful rice crops you should plant the seed in barley field; provided you expect to have sons you should have them before you are twenty." "Early you have sons, early you get strength". "Getting sons is to safeguard one's old age, storing the farm products is to prevent the coming of famine." "Full blessing, long life, and many males; much wealth, great eminence, and much glory." These are some of the well-known sayings among the people. Everywhere we go we find many people who are very much worried over the prospect of "no posterity" and who pray for sons. The woman having no sons generally has an unsatisfactory position in the community. Traditionally, only the sons inherit property, carry on the line of descent, and worship ancestors. Thus everybody knows that "Of the three unfilial acts the greatest is to have no heirs", and knows that an addition of one son to the family means an addition of one laborer on the farm. Thus everybody tries to marry and to marry very early. And everybody hopes to have sons. When a first male child is born, as splendid a ceremony as is allowed by the financial condition of the family is staged. All the relatives and friends of the family send presents either in cash or in silver ornaments on cloth for the child. To the people in China the arrival of a boy is the "arrival of jade" and is the greatest good fortune for the family. Thus many people are betrothed when they are very young, usually between five and ten. And, as already said, for fear of inability to get life mates for their sons in the future, many parents buy the small girls from the very poor families and rear them as fiancées for their sons. Many people who have dangerous diseases also marry. The following notes collected by the supervisor are illuminating.

"Being very anxious to have a grandson, a widow named C- of D- village let her son S- marry last winter despite the fact that the latter was only seventeen years of age and had severe tuberculosis at the time. Being much worried about his squandering of money and the acts of committing adultery, or we say the stealing of women, a widow named T- of S- village let her son C- marry recently. She expected that after marriage, her son might stay at home and use money carefully. Ts-, a boy of eighteen, was attacked by the disease of gonorrhoea. His parents worried a great deal because he was the only son in the D- family. They expected to have a grandson and expected the disease of their son to be cured. With these two wishes in their minds, they let Ts- marry last month. Because his fiancée had pneumonia, L-, a farmer of So- village, married her recently. He believed, as did many other people, that through marriage the evil spirit or Zen ho-bing (so-called by the people) might be driven from her body."

Understanding all these thoughts in the minds of Chinese people, one would not be much surprised to find the existence of early marriage in Kiangyin. In Kiangyin the modal age of bachelors at marriage was 20.5 and that of spinsters was 18.6 (Table 23). The people getting married at 20 and 18 are certainly too young. The practice of early marriage was also found in other areas throughout China. C.M. Chiao found that the age of bachelors at marriage for China was 20.2 and the mean age of spinsters at marriage was 18.8. This young age at marriage is one of the most important causes of the very high birth rate in China. The maximum fertility of

Table 23. Average and Modal Age at First Marriage, Each Sex, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931 - August, 1935.

Year	Average age		Modal age	
	Male	Female	Male	Female
First year (1931-1932)	21.2	18.8	20.5	18.7
Second year (1932-1933)	22.2	18.7	20.4	18.6
Third year (1933-1934)	22.4	18.7	20.4	18.5
Fourth year (1934-1935)	22.6	19.4	22.4	18.7
Total	22.0	18.9	20.5	18.6

women is in early adulthood with a progressive decline in fertility with advancing age. The proportion of women married is principally determined by the marriage customs in the locality.

Comparing the ages of Chinese women at marriage with that of Western people we see that the age of people at marriage in most Western countries is around 25. (See Table 24).

Table 24. Mean Age at Marriage of Women in Kiangyin and Selected Countries.

Place	Year	Mean age at marriage
Kiangyin	1931-1935	18.9
China (11)	1929-1931	18.8
United States (27)	1900-1905	21.4
Italy (31, p. 134)	1930	23.1
France (31, p. 134)	1911-1913	23.7
Australia (3, p. 586)	1930	25.5
England and Wales (31, p. 134)	1927	25.6
Sweden (31, p. 134)	1930	26.4

Girls are commonly younger than boys at marriage (See Tables 25 and 26). Table 26 shows that of 593 couples 19.0 percent were of the same age, in 64.7 percent of the cases the husbands were older than the wives and in 16.3 percent the wives were older. The larger proportion of women than of men marrying at an early age is caused by biological, social, and economic factors. Because of the greater fertility of women in earlier years of the child-bearing period of life and because of the earlier physical development of women they marry earlier. On the other hand, among men there is not much decline of fertility with increase of age until middle life is passed. In the second place, the women in Chinese society are almost wholly dependent. The inability of men to support a family leads them to postpone their marriage. Since women are scarce they have little difficulty in finding husbands. Few remain unmarried after 25.

The disparity between the ages of married couples is a matter of importance in the sociological study of various problems connected with family life. Generally we presume that the husband should not be more

Table 25. Frequency Distribution of Age at First Marriage, Each Sex, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931 - August, 1935.

Age	Number									
	Males					Females				
	1st year (1931- 1932)	2nd year (1932- 1933)	3rd year (1933- 1934)	4th year (1934- 1935)	Total (1931- 1935)	1st year (1931- 1932)	2nd year (1932- 1933)	3rd year (1933- 1934)	4th year (1934- 1935)	Total (1931- 1935)
14	..	..	..	..	..	4	3	..	..	7
15	2	..	..	..	2	5	3	5	2	15
16	1	3	..	1	5	22	21	15	15	73
17	7	6	8	6	27	15	15	21	11	62
18	17	7	16	11	51	51	29	27	37	144
19	25	19	19	18	81	31	25	21	23	100
20	53	31	27	21	132	29	17	20	21	87
21	27	15	13	21	76	25	17	20	20	82
22	16	19	15	22	72	13	13	4	16	46
23	11	12	7	13	43	1	1	..	3	5
24	8	9	11	6	34	3	1	2	5	11
25	7	1	10	9	27	1	1	1	1	4
26	6	7	4	5	22	..	..	..	..	..
27	7	4	1	2	14	..	..	..	..	..
28	2	3	1	8	14	..	..	..	1	1
29	2	2	3	4	11	..	..	..	1	1
30	..	..	1	1	2	1	..	..	..	1
31	..	2	..	1	3	..	..	..	..	..
32	..	2	1	1	4	..	..	..	..	..
33	2	..	1	3	6	..	..	..	..	..
34	..	1	2	1	4	..	..	..	..	..
35	..	..	1	2	3	..	..	..	..	..
36	..	..	..	1	1	..	..	..	..	..
37	1	1	..	..	2	..	..	..	..	..
38	..	2	..	..	2	..	..	..	..	..
39	..	..	2	..	2	..	..	..	..	..
40	..	..	1	..	1	..	..	..	..	..
43	..	..	..	1	1	..	..	..	..	..
46	..	1	..	..	1	..	..	..	..	..
49	..	..	1	..	1	..	..	..	..	..
52	..	..	1	..	1	..	..	..	..	..
Total persons	194	147	146	158	645	201	146	136	156	639

than six years the senior. The large differential of the age between husband and wife is a common cause of family maladjustment. In the Kiangyin registration area 15.0 percent of the couples married during 1931-1935 had husbands who were more than six years older than their wives. Marrying men much older than themselves usually creates a problem. In the United States, this is a common cause of divorce. Judge George A. Bartlett (5, p. 212) states, "This disparity of marriage age that is so often forced

upon our girls by economic urge is one of the commonest bases of divorce. It is an evil that a high standard of living must bring in its train so long as young men cannot earn enough to reach it early. There is no sign at the moment that they will, in our time at least. The adjustment must come, I think, and is coming, from the other direction. Girls are earning money on their own account to help their young men; and they are also, in a few cases at least, learning temperamentally to adjust themselves to the standard that their young men can afford."

Table 26. Age Difference Between Husbands and Wives at First Marriage, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931 - August, 1935.

Age relation-ship	Number of couples at first marriage					Percent				
	1931-1932	1932-33	1933-34	1934-35	1931-35	1931-32	1932-33	1933-34	1934-35	1931-35
Husband and wife of same age	38	16	28	31	113	20.2	11.7	21.9	22.1	19.0
Husband older than wife by										
1 year	30	21	10	14	75	16.0	15.3	7.8	10.0	12.6
2	27	12	21	22	82	14.3	8.8	16.4	15.7	13.8
3	15	13	14	10	52	8.0	9.5	10.9	7.1	8.8
4	14	12	4	9	39	7.4	8.8	3.1	6.4	6.6
5	9	7	6	9	31	4.8	5.1	4.7	6.4	5.2
6	6	3	5	2	16	3.2	2.2	3.9	1.4	2.7
7	8	7	8	6	29	4.3	5.1	6.2	4.3	4.9
8	2	7	4	3	16	1.1	5.1	3.1	2.2	2.7
9	6	2	3	3	14	3.2	1.5	2.3	2.2	2.4
10	3	7	1	3	14	1.6	5.1	0.8	2.2	2.4
11	1	1	2	3	7	0.5	0.7	1.6	2.2	1.2
12	..	3	1	..	4	....	2.2	0.8	....	0.7
13	..	..	..	1	1	....	....	....	0.7	0.2
14	..	..	..	2	2	....	....	....	1.4	0.3
16	..	..	1	..	1	....	....	0.8	....	0.2
Husband younger than wife by										
1 year	19	13	13	15	60	10.1	9.5	10.2	10.7	10.1
2	8	11	5	6	30	4.3	8.0	3.9	4.3	5.0
3	..	2	2	..	4	....	1.4	1.6	....	0.7
4	1	..	..	..	1	0.5	....	....	....	0.2
6	1	..	..	1	2	0.5	....	....	0.7	0.3
Total	188	137	128	140	593	100.0	100.0	100.0	100.0	100.0

Any change in the age at marriage might affect the proportion of married women and in turn the proportion of married women would affect the birth rate. It is very interesting to note that there was not much change in age at marriage during the past forty or fifty years in the Kiangyin registration area. Table 27 shows that the age at marriage of spinsters for some years past was around 19 and the age of bachelors at marriage was around 22. In most Western countries, the age at marriage has declined since the end of the nineteenth century. The slight change in the age of the Chinese people at marriage is largely due to the fact that the social and economic conditions affecting marriage have changed but little in China during recent decades.

Table 27. Number of Marriages and Average Age at First Marriage of Persons Married from 1887 to 1931, Hsiao Chi, Kiangyin, Kiangsu, China.\*

Period by years	Number		Average age	
	Male	Female	Male	Female
Prior to 1887	4	6	22.3	21.8
1887-1891	17	21	21.8	18.5
1892-1896	22	27	21.8	19.5
1897-1901	45	45	22.2	20.2
1902-1906	53	54	22.9	19.7
1907-1911	72	71	22.8	19.4
Total prior to 1912	213	224	22.5	19.6
1912-1916	108	106	22.0	19.3
1917-1921	115	121	22.4	19.9
1922-1926	182	184	21.7	19.4
1927-1931	237	240	22.1	19.8
Total 1912-1931	642	651	22.0	19.6
Grand total	855	875	22.1	19.6

\* (Data gathered in 1932 census).

## CHAPTER V

### THE BIRTH RATE

Both Chinese and foreign observers are well aware that millions of people in China live at a minimum subsistence level and are constantly undernourished. Hundreds of thousands have not even a foothold on the land. Living in extreme poverty, the great masses still breed like rabbits. Many observers of Chinese life are convinced that the birth rate is close to the biological maximum (40-50). In so far as the results of this study are typical, it would appear that China has one of the highest birth rates in the world.

#### Ratio of Male to Female Births

The sex ratio of Chinese children at birth has always been a puzzle to students of population. The few studies in this field in the past have shown ratios of 112 and up, some giving a ratio of 125 or more male births to 100 female births. In Western countries (26, p. 87) 104 to 106 male per 100 female births is the rule. For example, the sex ratio at birth was 105.6 in Germany in 1914; 104.1 in France in 1911; 104.8 in Ireland in 1912; 105.9 in Austria in 1913; 104.0 in Belgium and 105.2 in Denmark in 1915; and 105.1 in Italy in 1914. Why is the proportion of male to female births so much larger in China? The higher ratio of males at birth found in the Chinese population in previous studies is probably due to several causes: (a) to the greater underregistration of female babies arising from the low esteem in which females are held, (b) to the larger number of deaths of girl babies in the first few days after birth, largely due to neglect, for which it is impossible to get a report of either birth or death, (c) to the practice of female infanticide for which, again, it is almost impossible to get a report, and finally (d) to the possibility that most samples have been too small or the period covered too short to be representative. It is by no means certain that this study does not suffer from some of these same defects, but the method followed here leads us to believe that these data are more nearly complete than has been the case in studies where a single enumeration at the end of the year was relied upon for vital statistics. The results for the last year, 1934-1935, however, leave us no choice but to assume that for some reason which we cannot explain, there was a larger underregistration of female births and deaths in that year than in the preceding years.

In the Kiangyin registration area the ratio of the sexes at birth for the first year, 1931-1932, was 109.3 (See Table 28); for the second year, 1932-1933, 105.9; for the third year, 1933-1934, 101.9; and for the fourth year, 1934-1935, 130.0. The great variation from year to year in the ratio of the sexes at birth is due in part no doubt to the small sample. It is very interesting to note that the ratio for the first three years combined was 105.9 which is approximately the same as that found in most other countries. But in the fourth year the ratio was so high that the average for the entire period was raised to 111.7.

Table 28. Male and Female Births and Sex Ratio at Birth, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931 - August, 1935.

Years	Number of births		Sex ratio at birth
	Male	Female	
First year (1931-1932)	552	505	109.3
Second year (1932-1933)	487	460	105.9
Third year (1933-1934)	428	420	101.9
Fourth year (1934-1935)	572	440	130.0
Total	2,039	1,825	111.7

#### Crude Birth Rate

In most Western countries the variation in birth rates from one month to another is small. In the Kiangyin registration area, however, the distribution of births by months is rather unusual. Almost two-thirds of all births occur in the six months from September to February (See Table 29).

Table 29. Births and Crude Birth Rates by Months, and Ratio of Monthly to Annual Birth Rates, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931 - August, 1935.

Months	Births				Birth Rate					Percent of annual rate				
	1931	1932	1933	1934	1931	1932	1933	1934	1935	1931	1932	1933	1934	1935
	-32	-33	-34	-35	-32	-33	-34	-35	-35	-32	-33	-34	-35	-35
Sept.	117	95	108	67	64.2	53.1	61.2	38.2	54.2	133	120	153	80	120
Oct.	104	108	93	101	57.1	60.3	52.7	57.5	56.9	118	137	132	120	126
Nov.	108	111	79	97	59.3	62.0	44.7	55.3	55.4	123	141	112	115	123
Dec.	123	104	126	124	67.5	58.1	71.4	70.6	66.9	140	132	179	147	148
Jan.	98	122	111	154	53.8	68.1	62.9	87.7	68.0	111	154	157	183	151
Feb.	113	68	93	114	62.0	38.0	52.7	64.9	54.4	128	86	132	135	121
Mar.	75	71	54	65	41.2	39.7	30.6	37.0	37.1	85	90	77	77	82
Apr.	68	46	50	41	37.3	25.7	28.3	23.4	28.7	77	58	71	49	64
May	64	41	32	42	35.1	22.9	18.1	23.9	25.1	73	52	45	50	56
June	52	45	18	43	28.5	25.1	10.2	24.5	22.1	59	57	26	51	49
July	52	55	25	78	28.5	30.7	14.2	44.4	29.4	59	70	36	93	65
Aug.	83	81	59	86	45.6	45.2	33.4	49.0	43.3	94	102	84	102	96
Total	1057	947	848	1012	48.3	44.1	40.0	48.0	45.1	100	100	100	100	100

The large proportion of births occurring in these months is probably caused in part by the fact that the wedding season is from November to March; but seasonal emigration, the busy summer season on the farm, and climatic conditions play their part. Because most weddings take place from November to March it is reasonable to assume that many newly-married women conceive during this period or shortly after. It is a common phenomenon that a

woman who married last year delivered a child this year. Because the people in the country are busiest on their farms in summer and early autumn and more people who leave their families temporarily go out to become hired laborers at this season we may presume that fewer women have chances to conceive during this period. Furthermore, as a rule the people who work outside Hsiao Chi — for example, in Shanghai and Wusih — generally come back to visit their families at the end of each Chinese year. After the Chinese New Year they go back to their work again. This helps to explain why conceptions are high in January and February. Furthermore, the climatic conditions vary from month to month. Probably the changing climatic conditions also affect the reproductivity of women. An American geographer, H.R. Mill, has argued that women are most fertile when the temperature is around 65 degrees Fahrenheit. We are also told that many Anglo-Saxon women after migrating to tropical areas are irregular in their menstruation and some of them become sterile. If this is true, spring is the most favorable time for women to conceive while summer is the most unfavorable. Besides the reasons given above, we are inclined to think that the cholera epidemic which occurred in July and August of 1931 had some effect upon the very small number of births which occurred in April, May, and June of 1932, and that the malaria epidemic of October to December affected the number of births in the following July to September. During the time of the cholera epidemic it would be expected that the conception rate would be low; also that during the malaria epidemic there would be more miscarriages than usual.

Not only did the birth rate vary from one season to another, it also varied from one year to another. In the first year, 1931-1932, it was 48.3 per thousand (See Table 29); in the second year, 1932-1933, it was 44.1; in the third year, 1933-1934, it was 40.0; and in the fourth year, 1934-1935, it was 48.0. The decline in the birth rate from 1931 to 1934 is to be explained in part by economic depression which caused fewer marriages and a larger migration of young people during these years and in part by the severe epidemic already referred to. That the depression is likely to have caused postponement of marriage and an unusual amount of emigration can be better appreciated if a brief statement is given of the way in which it affected agriculture.

Data gathered by the Department of Agricultural Economics of the National Agricultural Research Bureau showed that for twenty-two provinces, irrigated land declined in value eighteen percent from 1931 to 1934, plain dry land declined seventeen percent, and the mountainous dry land eighteen percent (See Table 30). Closely related to the decline in value of farm land is the decline in the prices received by farmers for their produce.

Table 30. Indexes of the Value of Farm Land in China, 1931-1934, when 1931 = 100

Kinds of farm land	Index of value, 1931 = 100			
	1931	1932	1933	1934
Irrigated land	100	95	89	82
Plain dry land	100	93	87	83
Mountainous dry land	100	94	88	82



According to preliminary data compiled at the University of Nanking in a study of land utilization, prices received by farmers have declined much farther than prices paid by farmers (See Table 31). Because of the declining prices of farm products and the consequent decline in the incomes of farmers, more people than usual moved out from the registration area despite the fact that the economic depression was almost universal.

Table 31. Indexes of Prices Received by Farmers for Farm Products, of Prices Paid for Commodities Purchased, of Farm Wages, of Farm Taxes, and of Farm Land Values, when 1926 = 100

Year	Prices received by farmers	Prices paid farmers	Prices received by farmers	Wages		Taxes on farm land	Prices received by farmers	Value of farm land
				of farm labor	Prices received by farmers			
	For 11 localities, 6 provinces		For 27 localities, 11 provinces		For 13 localities, 6 provinces		For 26 localities, 12 provinces	
1926	100	100	100	100	100	100	100	100
....								
....								
....								
1931	118	152	122	135	140	152	119	109
1932	117	154	108	151	107	116	108	101
1933	57	108	107	110	...	...	81	103

Epidemics and crop conditions affect births as well as deaths. Hence at the risk of tiresome repetition we should mention the cholera epidemic which occurred in 1932 and the malaria epidemic which occurred in 1933. Besides we should not forget the great flood of 1931 and the droughts in 1932 and in 1934. Because the registration area, Hsiao Chi, is high land, less than twenty percent of the farm land was inundated in 1931. Really, the economic condition in 1931 was much better than that in the following years. In 1931, only a small number of people left the farm. Because it rained frequently, the weather throughout the year was quite favorable to the preservation of life. On the farm the people had less work than usual since they were free from pumping the water to irrigate their rice fields. They spent most of their time in their homes. But in 1932 and 1934 the situation was quite different, as it rained very little during those two summers. A large percentage of the rice crops failed and a large number of people left the registration area. "Flies appear in crop-failure year and mosquitoes in good-harvest year" is a saying among the farmers. What the people worry about most is the lack of rain. They worry more about the coming of drought than the coming of flood.

The birth rate for the four years combined was 45.1. This is an exceedingly high birth rate. Most countries in the world not only have much lower rates but also declining rates. At the present time, only in Egypt, Russia, Palestine, Mexico, and a few smaller countries, is the

birth rate above 40 per 1000.

### Fertility of Married Women

The crude birth rate fluctuated rather widely. It declined from 1931 to 1933 and then rose sharply in the fourth and last year of registration. This is also true of the specific birth rates, and fluctuations in both are to be attributed largely to the favorable or unfavorable health conditions which prevail in Kiangyin at different times. A good crop with little disease encouraged marriage and this in turn led to a high birth rate in the following year. Poor crops and much sickness produced just the opposite effects (Table 32).

The annual fertility rate for married women 15-44 in the Kiangyin registration area fluctuated greatly, from 282.5 in the first year to 233.8 in the third year. The average rate for the four years was 265.0, higher than any other rate known to the authors. For comparative purposes the following fertility rates (31, p. 133) are given: Italy (1920-22), 252.4; the Netherlands (1920-22), 238.0; Bulgaria (1926), 233.9; Spain (1920-22), 231.6; Japan (1925), 230.4; Scotland (1920-22), 226.7; Norway (1930), 162.4; New Zealand (1930), 149.8; India (1920-22), 139.0; England and Wales (1927), 130.8; France (1926), 130.5; Sweden (1930), 130.2; and Germany (1930), 119.0.

As has been shown (Table 32) the fertility rate varies greatly at different ages. In Western countries the highest fertility rate for married women is generally found at the ages under twenty. It is usually the case that the higher the age of married women the lower is the fertility rate. But in the Kiangyin registration area the highest fertility was found at age 20-24 for three years and at 25-29 for the second year rather than at age 15-19. That the highest fertility rate of married women was generally in the age group 20-24 is largely due to the age of women at marriage. Most women are married at the age of eighteen or nineteen. At the time of their marriage, therefore, they are in the age group 15-19; but by the time they are delivered of their first child many have passed into the age group 20-24. Quite a different picture might be presented if nine months were subtracted from the length of time married. Besides, we should mention the different organization of the family and the frequent separations between the two newly-married people in China. In Western countries young couples after being married generally separate from their parents and establish their own homes. But the situation in China is quite different. The people after being married still live in a large family. A newly-married woman is required to obey the father-in-law and mother-in-law. She should get up early and go to sleep late. She is required to look after much of the business in the family. Under these conditions a newly-married woman goes back to her parents' home very frequently. And the first New Year after being married she is sure to spend at her parents' home. Commonly she leaves her husband on the sixth day of the first moon and goes back on the fifteenth of the month. Thus the manner of life of a newly-married couple in China is quite likely to lower the birth rate.

There was a very large proportion of married women in Kiangyin. Of the total women in age group 15-19, 38.1 percent were married, and in age group 20-24, 93.1 percent were married. Rarely does a woman reach the age of twenty-five or twenty-six and remain single. Most of the women

Table 32. Total Women, Married Women, and Percent of Women Married, by Five-year Age groups, 15-49, March 1, 1932 - 1935; Births by Age of Mother and Specific Birth Rates, September, 1931-August, 1935, Hsiao Chi, Kiangyin, Kiangsu, China.

Age group	Mar.1	Mar.1	Mar.1	Mar.1	4 yr.	1931	1932	1933	1934	1931
	1932	1933	1934	1935	av.	-32	-33	-34	-35	-35
Total Women						Births				
15-19	864	842	852	861	855	82	56	68	60	266
20-24	876	859	814	791	835	295	273	222	294	1,084
25-29	782	779	791	802	788	258	263	219	275	1,015
30-34	765	737	700	652	714	198	178	177	188	741
35-39	682	667	688	712	687	171	135	123	141	570
40-44	535	534	535	535	535	51	39	37	51	178
45-49	426	465	456	471	454	2	3	2	2	9
15-44	4,504	4,418	4,380	4,353	4,414	1,055	944	846	1,009	3,854
15-49	4,930	4,883	4,836	4,824	4,868	1,057	947	848	1,011	3,863
Married women						Births per 1,000 married women				
15-19	334	315	326	331	326	245.5	177.8	208.6	181.3	203.7
20-24	818	796	756	737	777	360.6	343.0	293.7	398.9	348.9
25-29	758	734	764	771	757	340.4	358.3	286.6	356.7	335.3
30-34	734	693	670	628	681	269.8	256.9	264.2	299.4	271.9
35-39	625	601	633	658	629	273.6	224.6	194.3	214.3	226.5
40-44	466	458	469	469	466	109.4	85.2	78.9	108.7	95.6
45-49	325	357	358	385	356	6.2	8.4	5.6	5.2	6.3
15-44	3,735	3,597	3,618	3,594	3,636	282.5	262.4	233.8	280.7	265.0
15-49	4,060	3,954	3,976	3,979	3,992	260.3	239.5	213.3	254.1	241.9
Percent of women married						Births per 1,000 women				
15-19	38.7	37.4	38.3	38.4	38.1	94.9	66.5	79.8	69.7	77.8
20-24	93.4	92.7	92.9	93.2	93.1	336.8	317.8	272.7	371.7	324.6
25-29	96.9	94.2	96.6	96.1	96.1	329.9	337.6	276.9	342.9	321.8
30-34	95.9	94.0	95.7	96.3	95.4	258.8	241.5	252.9	288.3	259.6
35-39	91.6	90.1	92.0	92.4	91.6	250.7	202.4	178.8	198.0	207.3
40-44	87.1	85.8	87.7	87.7	87.1	95.3	73.0	69.2	95.3	83.2
45-49	76.3	76.8	78.5	81.7	78.4	4.7	6.5	4.4	4.2	5.0
15-44	82.9	81.4	82.6	82.6	82.4	234.2	213.7	193.2	231.8	218.3
15-49	82.4	81.0	82.2	82.5	82.0	214.4	193.9	175.4	209.6	198.4

unmarried at the age of 25-29 and over are probably widows. In rural China practically no woman remains single throughout her life. But when a woman becomes a widow she has a somewhat different position. That "A good horse does not turn back to eat the grass, and a good woman does not remarry" is the saying. Traditionally, a woman is not allowed to remarry if she is rich. And traditionally, a man with high social and economic status does not like to take a widow. In recent years, however, the cases of remarriage among rich women have occurred more frequently. The weakening of this local tradition is due to the influence of urban life.

The forbidding of remarriage on the side of a widow, the practice of infanticide and the practice of abortion are the general checks adopted by the people in the Kiangyin registration area to slow up the growth of population. But this check of forbidding remarriage has had little practical effect on the birth rate since local tradition does allow the poor young widow to remarry and there is a large excess of men aged 15 to 30 demanding wives. With this fact and the practice of early marriage in mind one is not surprised to find a very high percentage of married women in the childbearing period and very high fertility among all women. The birth rate for all women aged 15-44 for the four years combined was 218.3 In comparison with the 1932-1934 rate of 71.4 per thousand for all women 15-44 in Australia (4, p. 460) the rate in Kiangyin is extremely high. A very high birth rate is to be expected where a very high percentage of all women are married and contraception is practically unknown. (See Table 32).

#### Differential Birth Rate

"The differential birth rate has been widely discussed and there has been much speculation concerning its effects on the quality of the population stock. It is clear that if the high birth rate of certain groups is not offset by a correspondingly high death rate, the more prolific groups will gradually displace the less prolific. If the more prolific are at the same time the less capable, and if their incapacity is in the nature of heritable variation, the differential birth rate must inevitably result in a lowering of the native worth of the population." In Western countries, the birth rate is generally lowest in the economic and cultural upper classes and highest among the classes lowest in the economic and cultural scale. But among the people in this country, some students have found different results. The students like H.D. Lamson (20), J.B. Griffing (18), and Warren Chen (10) all found the highest cultural upper classes with the largest size of family and the lowest cultural class with the smallest size of family. J.B. Taylor (29) has found a direct ratio between size of family and size of farm among farmers who make up more than 75 percent of the population of China. Surely we need further enlightenment.

Being very anxious to know the relationship of the economic status to the birth rate in the Kiangyin registration area we attempted to group the 4,579 rural families into rich, well-to-do, and poor and we carefully recorded the births that occurred in these family groups. As a result we found that the birth rate for the well-to-do families was highest and for the rich was lowest (Table 33). The rate for the four years combined was 36.5 for the rich as compared with 48.7 for the well-to-do and 44.2 for the poor. The explanation of these differences is probably to be found in

Table 33. Births and Crude Birth Rates by Economic Status in Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Economic status	Number of births					Birth rate				
	1931	1932	1933	1934	1931	1931	1932	1933	1934	1931
	-32	-33	-34	-35	-35	-32	-33	-34	-35	-35
Rich	62	58	58	69	247	37.3	34.7	34.5	39.4	36.5
Well-to-do	364	333	324	388	1,409	50.6	46.3	44.9	52.9	48.7
Poor	631	556	466	555	2,208	48.5	44.1	37.9	46.3	44.2
Total	1,057	947	848	1,012	3,864	48.3	44.1	40.0	48.0	45.1

the known fact that the well-to-do families had a larger proportion of married women than the rich families. Generally the people with lower economic status marry younger. This results in a lower birth rate in the rich families than in the well-to-do families. But why was the birth rate lower in poor families than in well-to-do families? This is due to the fact that the well-to-do people and the rich people in the country do not migrate very much. In the poor families husbands frequently leave their wives to go to other villages as hired laborers or go to Shanghai and Wusih as factory laborers and coolies. This reduces the exposure to conception in this class and tends to lower the birth rate. Furthermore, the poor women, owing to the heavy work they perform, may have more miscarriages and stillbirths than the well-to-do. It is also probable that poor women are more given to the practice of abortion.

The fertility rate as well as the crude birth rate was highest in well-to-do families but there was not much difference between the rich families and the poor families. Table 34 shows that the nuptial birth rate was 267.0 in rich families as compared with 290.7 in well-to-do families and 250.6 in poor families. The birth rate when computed for all women was also highest in well-to-do families and about the same in rich and poor families. The birth rate per thousand, all women 15-44, was 212.4 in rich families, 238.1 in well-to-do families, and 207.9 in poor families.

The birth rate when computed according to land tenure was highest in part-owner families and lowest in owner families for all years combined (Table 35). Generally we assume that a larger proportion of owners than of part-owners and tenants are rich people. But why was the birth rate in Table 33 higher in well-to-do families than in poor families? The principal reason is that the number of poor people given in Table 33 includes much of the nonfarm population living in the Hsiao Chi district. The migration rate of these people is largest because they cannot find any land at home to cultivate, hence they must move about hunting work. Because of the frequent prolonged absence of the men from home in the poorest families the birth rate among them is bound to be the lowest.

Table 34. Total and Married Women 15-44 Years of Age and Percent of Women 15-44 Married, March 1, 1932-1935; Births to Women under 45 and Birth Rates for Total and Married Women 15-44, by Economic Status, September, 1931-August, 1935, Hsiao Chi, Kiangyin, Kiangsu, China

Economic status	Mar.1 1932	Mar.1 1933	Mar.1 1934	Mar.1 1935	Av. 1932-35	1931	1932	1933	1934	1931
					-35	-32	-33	-34	-35	-35
	<u>Women 15-44</u>					<u>Births</u>				
Rich	296	291	289	287	291	62	58	58	69	247
Well-to-do	1,506	1,477	1,464	1,454	1,475	362	332	323	388	1,405
Poor	2,702	2,650	2,627	2,612	2,648	631	554	465	552	2,202
Total	4,504	4,418	4,380	4,353	4,414	1,055	944	846	1,009	3,854
	<u>Married women 15-44</u>					<u>Births per 1,000 married women 15-44</u>				
Rich	238	229	229	229	231	260.5	253.3	253.3	301.3	267.0
Well-to-do	1,238	1,194	1,205	1,196	1,208	292.4	278.1	268.0	324.4	290.7
Poor	2,259	2,174	2,184	2,169	2,196	279.3	254.8	212.9	254.5	250.6
Total	3,735	3,597	3,618	3,594	3,636	282.5	262.4	233.8	280.7	265.0
	<u>Percent of women 15-44 married</u>					<u>Births per 1,000 women 15-44</u>				
Rich	80.4	78.7	79.2	79.8	79.5	209.5	199.3	200.7	240.4	212.4
Well-to-do	82.2	80.8	82.3	82.3	81.9	240.4	224.8	220.6	266.9	238.1
Poor	83.6	82.0	83.1	83.0	83.0	233.5	209.1	177.0	211.3	207.9
Total	82.9	81.4	82.6	82.6	82.4	234.2	213.7	193.2	231.8	218.3

Table 35. Births and Crude Birth Rates of Farm Families by Land Tenure, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Land tenure	Number of births					Birth rate				
	1931	1932	1933	1934	1931	1931	1932	1933	1934	1931
	-32	-33	-34	-35	-35	-32	-33	-34	-35	-35
Owner	62	50	51	55	218	46.7	38.4	39.2	42.2	41.6
Part-owner	501	498	435	576	2,010	48.3	47.8	41.9	54.7	48.2
Tenant	361	294	283	297	1,235	52.6	43.6	42.4	45.0	46.0

## CHAPTER VI

### THE DEATH RATE

The death rate is closely associated with the sanitary practices and the standard of living of a community. In the Kiangyin registration area, as in practically the whole of China, the conditions are quite favorable to the spread of disease. There is no sanitary sewage system, the garbage is generally thrown in front of the door, unsanitary open toilets are near the house, coffins with corpses are often unburied, being set on the ground near the dwelling. Houses are crowded, dirty, and badly ventilated. In the Kiangyin registration area the most common diseases are malaria, dysentery, tuberculosis, measles, influenza, cholera, diphtheria, and meningitis. The people are very ignorant, conservative, and superstitious in health matters. For instance, they do not believe that dysentery is caused by eating filthy food and drinking unboiled water, or that malaria is caused by the bite of a certain kind of infected mosquito. They believe that "Life and death are destined five hundred years ago". Those who are familiar with the health conditions in the country will not be surprised to find that China has a very high death rate.

#### Crude Death Rate

The distribution of deaths by months, like the distribution of births, is unusual (Tables 29 and 36). It is noted that in the first year,

Table 36. Deaths and Crude Death Rates by Months and Ratio of Monthly to Annual Death Rate, Esiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935

Months	Number of deaths				Death rate				% of annual rate			
	1931	1932	1933	1934	1931	1932	1933	1934	1931	1932	1933	1934
	-32	-33	-34	-35	-32	-33	-34	-35	-32	-33	-34	-35
Sept.	69	80	96	60	37.9	44.7	54.4	34.2	89	124	105	144
Oct.	83	106	186	60	45.6	59.2	105.3	34.2	107	164	203	144
Nov.	64	87	138	54	35.1	48.6	78.2	30.8	82	135	150	129
Dec.	55	44	110	41	30.2	24.6	62.3	23.4	71	68	120	98
Jan.	56	57	76	36	30.7	31.8	43.0	20.5	72	88	83	86
Feb.	57	85	95	47	31.3	47.5	53.8	26.8	73	132	103	113
Mar.	46	55	107	32	25.2	30.7	60.6	18.2	59	85	117	76
Apr.	60	38	58	22	32.9	21.2	32.8	12.5	77	59	63	53
May	47	36	61	29	25.8	20.1	34.5	16.5	60	56	66	69
June	43	28	33	18	23.6	15.6	18.7	10.3	55	43	36	43
July	139	57	60	56	76.3	31.8	34.0	31.9	178	88	65	134
Aug.	216	103	81	47	118.6	57.5	45.9	26.8	277	159	88	113
Total	935	776	1,101	502	42.8	36.1	52.0	23.8	100	100	100	100

1931-1932, a very large proportion of deaths occurred from September to November and in July and August; in the second year, 1932-1933, the great-

est number occurred from September to November and in February and August; in the third year, 1933-1934, the high point occurred from September to March and in August; in the fourth year the deaths amounted to little more than half those in either the first or third years and the largest proportion occurred from September to November and in July and August. We are inclined to think that wherever the positive checks — disease and hunger in particular — are important there is a large variation in death rates from month to month and year to year. But clearly the deaths in this area are highly concentrated in the latter part of the summer and in the fall.

The death rate for the first year was 42.8. This high death rate is to be attributed largely to the diseases of dysentery, malaria, and cholera. Just after the flood in 1931 the diseases of dysentery and malaria broke out in violence. Those two diseases caused a very considerable number of deaths in September to November. In 1932, the cholera epidemic was even more severe than the dysentery and malaria epidemic which occurred in 1931. The monthly death rate for July, 1932, was 76.3 and for August was 118.6. These high rates can hardly be realized. During the whole summer the weather was very hot and dry. Temperatures of 90 to 100 degrees were common. Hot dry weather is very favorable to the development of cholera. The raising of water to the rice fields kept the rural people very busy as water was raised chiefly by human power. Almost all the ponds dried up in the late summer. In many fields the crops failed completely. During the time that the ponds were dry the water supply of the people became a serious problem. They could not get it so freely as before. Many people got their water from ponds of filthy and stagnant water. Furthermore, many people drank unboiled water. Then, too, flies were numberless. The people did not pay any attention to them. They did not believe that flies could carry disease from one person to another through lighting on food. Most people in the country, being poor people, used all their food even though the food had spoiled. During the time of the cholera epidemic we noticed that when one member in the family got the disease the other members were almost certain to get it. From July to early October the cholera epidemic raged. An unusual number of people died of it. The China critic (17) said of the epidemic in China, "This year's cholera outbreak has been one of the worst on record. In Shanghai, the first patient was discovered on April 26, followed by more and more cases until the beginning of August when the epidemic reached its height; after this there was a gradual decline and the last cases were recorded in the first week of October. Altogether nearly 5,000 persons were attacked by the infection and 317 died, thus producing a mortality of 7.4 percent — which seems to be a record in the annals of cholera. Unfortunately, the epidemic spread over practically all parts of China from Canton in the South to Harbin and Sansing in the North. The National Health Administration, Nanking, estimated that 21 provinces with 303 cities were invaded and that about 103,000 persons fell ill and 34,000 died. Never before, except perhaps in 1919, has there been such a widespread epidemic during the present century. Of neighboring countries, Japan reported only 8 cases, Korea 20, Philippines 6, Siam 10, and French Indo-China 26. As compared with China, these figures are infinitesimal; though in the preceding year, while China was almost free, thousands succumbed from the infection in Siam, India, French Indo-China, and the Philippines. The ways of nature are strange, and no definite explanation can be made as to why such a scourge as cholera should show partiality to one territory at one time and not at another. But all things being equal,



it may be said with confidence that a land possessing safe water supplies, wide-awake health authorities, and inhabitants who are sanitarily trained, will manage to keep away epidemics of cholera, plague, and smallpox more easily than conservative and nonscientific people. Chinese people should realize that real progress must embrace scientific and medical efficiency as well as political tutelage and party discipline."

The year 1932 was a year of drought. It was dry in autumn and winter as well as in summer. After the occurrence of the cholera epidemic, the diseases of diphtheria and meningitis broke out. Under the condition of very dry weather these two diseases developed rapidly. They had taken a large toll of deaths in October and November in the second year. In January and February, 1933, whooping cough was active. It caused a considerable number of deaths during that time. Further, the malaria epidemic appeared in August. The high death rate of this month was caused by it. In 1933 the diseases of malaria, typhoid, and dysentery, especially malaria, were exceedingly severe. They took a large toll of deaths during the time from September to December. After the passing of the diseases of malaria, typhoid, and dysentery, the diseases of diphtheria and meningitis broke out in January and February in 1934, and afterwards the disease of measles which occurred chiefly in March. From August, 1933, to early April, 1934, one epidemic after another occurred in the Kiangyin registration area. The annual death rate for this third year was 52.0 This is an unusually high death rate even in a high death rate country. Fortunately, this high rate was largely offset by the very low death rate — 23.8 — the following year.

During the time of these epidemics in the Kiangyin area we found that many farmers did not believe in the usefulness of medicine but rather relied upon the sayings of the Taoists, sorcerers, and necromancers. Besides believing in the efficacy of these rites many people put their lives into the hands of quack doctors. In Hsiao Chi district there are probably no less than 30 such doctors generally recognized. These so-called doctors know nothing about modern medicine and modern sanitation. From our observation we would say that a considerable number of people died between August, 1933, and early April, 1934, because they had taken medicines prescribed by these local doctors. The Chinese people generally like to be cured quickly; if they are sick and take medicine this morning they expect to recover by afternoon; and it very often happens that a patient who is rich will send for two or three doctors within one day and take one medicine in the morning and another but different medicine in the afternoon. These local doctors know nothing about the cure or prevention of such diseases as malaria, typhoid, meningitis, and diphtheria; nor do the masses of the people. The malaria epidemic and the diseases of typhoid and dysentery occurred in autumn and early winter. After these epidemic diseases had spent their force diphtheria and meningitis often appeared. The spreading of diphtheria and meningitis in Hsiao Chi was closely connected with the disease of malaria. We noted that those who were worn out with fighting malaria were more readily the victims of these other diseases. Ignorance of the people as to the nature of these contagious diseases caused them to spread rapidly from one person to another. It is a common phenomenon that one after another of the people in the same family or in the same village died of the same disease. We were told by a reputable physician in Kiangyin Christian Hospital that the larger number of deaths occurring in December, January, and February were also fundamentally due to malaria. Malaria can be treated so that the symptoms will disappear

before a real cure has been effected. Some weeks or months after, the victim frequently suffers relapse. Since the people will not submit to prolonged treatment after the disappearance of the symptoms many of them are never really cured and, hence, are ready to be the victims of any other contagious disease.

The death rate for the four years combined was 38.7 (Table 37). This is an exceedingly high death rate. The death rate for most Western countries in the present generation is 15 per thousand or under. Only in countries such as Egypt, Ceylon, Rumania, Soviet Republic, and Japan are the death rates considerably higher than 15 (1, p. 811; 2, p. 810; 3, p. 590; 4, p. 482; and 22, p. 46). But compared with the rate in Kiangyin the high death rates in these latter countries are very low, except in Egypt, Ceylon, and Rumania, being less than one-half of the death rate of the people in Kiangyin.

### Specific Death Rate

The death rate discussed above is the crude rate, i.e., it simply shows the number of deaths per thousand of mean population without taking the age constitution into consideration. Other things being equal, the death rate of a country will be higher if it contains a small percentage of persons at the ages 10 to 50 and a high proportion of children and old people.

In the Kiangyin registration area the specific death rate as well as the crude rate was high. Table 37 shows the specific death rate of the people in Kiangyin, and a comparison is made between the specific death rate of the people in Kiangyin and that in England and Wales and in the United States in Table 38. This table shows that in comparison with the experience of England and Wales and the United States of America both male and female death rates at all ages in Kiangyin are much higher and especially at ages under 5.

### Deaths by Age and Sex

The death rate of the male population is different from that of the female population. In Western countries there are always more deaths of male children than of female children. But in the Kiangyin registration area the figures show just the opposite. The higher death rate of female children is probably due in large part to the lower esteem in which female babies are held. Because "A girl baby means another family name" female infanticide is more frequent than male infanticide and less care is taken of the girl babies. It is the unequal treatment of the sexes that makes such a high female death rate — such as 392.0 per thousand females under one for the four years combined as compared with 283.6 per thousand male children of the same age (Table 38). The excessive female mortality during the reproductive period arises from continuous childbearing in an environment where sanitation and medical care are almost entirely lacking. As an example, D-'s wife of T- village was pregnant three times since marriage: (a) a girl was borne in 1932; (b) a miscarriage after three months occurred in April, 1933; (c) a miscarriage after five months occurred in October of the same year. Because she was too weak she died from the last childbirth. Hundreds and thousands of similar cases occur each year in rural China.

Table 37. Deaths and Death Rates by Age and Sex, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Age	Deaths								Specific Death Rates				
	Male				Female				Both sexes				
	1931 -32	1932 -33	1933 -34	1934 -35	1931 -32	1932 -33	1933 -34	1934 -35	1931 -32	1932 -33	1933 -34	1934 -35	1931 -35
Under 1	102	98	162	88	113	131	169	68	261.2	312.4	547.1	238.9	330.8
0-4	190	160	271	129	209	186	281	108	111.6	98.0	169.9	75.2	113.6
5-9	28	35	45	16	24	28	52	16	18.5	23.2	34.8	11.5	22.0
10-14	22	21	18	3	13	11	22	3	15.3	13.9	17.4	2.6	12.3
15-19	19	10	10	5	13	15	15	7	16.5	13.1	13.0	6.3	12.3
20-24	19	9	16	15	7	10	22	12	14.4	10.7	22.4	16.1	15.8
25-34	30	20	21	16	31	30	34	12	19.3	16.2	17.9	9.2	15.7
35-44	48	27	30	18	18	16	22	19	26.7	18.0	21.5	15.1	20.4
45-54	52	25	41	22	26	11	20	10	40.9	19.2	33.6	18.0	28.1
55-64	71	63	61	37	37	30	24	15	73.6	63.8	59.4	36.4	58.4
65-74	16	16	32	11	15	21	26	15	103.3	115.6	149.9	58.2	104.5
75-84	12	12	7	5	26	16	28	7	285.7	233.3	339.8	126.3	250.6
85-94	1	...	...	...	8	4	3	1	600.0	571.4	333.3	200.0	472.2
Total	508	398	552	277	427	378	549	225	42.8	36.1	52.0	23.8	38.7

  

Age	Specific Death Rates									
	Male					Female				
	1931 -32	1932 -33	1933 -34	1934 -35	1931 -35	1931 -32	1932 -33	1933 -34	1934 -35	1931 -35
Under 1	222.7	237.3	496.9	225.6	283.6	309.6	409.4	605.7	258.6	392.0
0-4	94.9	80.5	149.4	71.6	98.6	132.9	120.5	195.8	80.1	132.9
5-9	17.6	22.9	28.3	10.0	19.7	19.6	23.5	43.4	13.4	25.0
10-14	17.4	16.4	13.9	2.3	12.4	12.7	10.7	22.0	3.0	12.1
15-19	17.7	9.4	9.4	4.3	10.4	15.0	17.8	17.6	8.1	14.6
20-24	20.5	9.9	18.1	16.9	16.3	8.0	11.6	27.0	15.2	15.3
25-34	18.7	12.7	13.2	10.0	13.7	20.0	19.8	22.8	8.3	17.8
35-44	38.3	22.8	25.0	15.0	25.4	14.8	13.3	18.0	15.2	15.3
45-54	50.2	25.1	42.8	23.6	35.7	29.9	12.5	23.4	11.9	19.4
55-64	104.0	93.8	91.7	55.8	86.5	47.1	38.2	31.3	19.6	34.2
65-74	177.8	150.9	258.1	74.3	160.3	71.4	98.1	98.9	50.2	78.1
75-84	363.6	500.0	291.7	217.4	346.2	260.0	166.7	354.4	97.8	221.9
85-94	1000.0	.....	.....	.....	200.0	571.4	666.7	428.6	250.0	516.1
Total	44.0	35.2	49.3	24.8	38.3	41.4	37.2	55.0	22.8	39.2

During the time of the malaria epidemic in 1933 we noted that a large number of pregnant women were killed by malaria fever. Very often a woman when attacked by fever miscarried or delivered the child and succumbed because of her weakness. This is the reason the death rate for women in the childbearing period in the third year was higher than in the other two

Table 38. Death Rates per 1,000 Living at Each Age Period for Kiangyin, England and Wales, and the United States of America (26,p.204)

Age	Males			Females		
	1931-1935	1920		1931-1935	1920	
	Kiangyin	England & Wales	United States	Kiangyin	England & Wales	United States
Under 1	283.6	....	....	392.0	....	....
0-4	98.6	35.7	32.0	132.9	28.5	26.0
5-9	19.7	3.2	3.4	25.0	3.1	3.0
10-14	12.4	1.9	2.4	12.1	2.0	2.1
15-19	10.4	?	3.9	14.6	2.7	3.7
20-24	16.3	?	5.0	15.3	3.3	5.3
25-34	13.7	?	6.2	17.8	3.9	6.7
35-44	25.4	?	8.3	15.3	5.4	7.6
45-54	35.7	13.3	13.1	19.4	9.5	12.1
55-64	86.5	25.2	26.7	34.2	19.4	24.2
65-74	160.3	56.1	58.6	78.1	45.3	55.0
75-84	346.2	130.5	145.0	221.9	112.4	
85 +	200.0	235.4		516.1	246.1	138.4

years. In the autumn of 1933 the disease of malaria was unusually bad. In the first year, 1931-1932, there was a cholera epidemic, but cholera caused more deaths of young men than of young women. Because men worked outside and had more contacts with other people more of them were attacked by cholera and more of them died of it. Hence, there was a larger proportion of male deaths than that of female deaths at most ages above 10 in the first year.

Table 39 shows that a larger percentage of female deaths than of male deaths occurred at ages under 5 and over 65 and for two years at ages 20-39. The proportions of all deaths occurring at ages 5-19 were almost identical for the two sexes in the four years combined. The larger percentage of female deaths occurring at age 65 and above is due to the fact that a larger proportion of the total female population is found in those ages. At other ages there were more males than females. When the age distribution of the male population is different from the age distribution of the female population the male deaths by percentage according to age groups are bound to be different from the female deaths.

#### Differential Death Rate

The economic conditions in a locality have a great effect upon the death rate. Generally the locality with relatively easy economic conditions is favorable to a low general death rate and an increasing death rate is found as the economic status declines. When grouped as rich, well-to-do, and poor there is a significant decrease in death rate as the economic condition of the people improves. The death rate of rich people for the four years, 1931-1935, combined was 28.5 as compared with 35.7 for the well-to-do people and 41.8 for the poor people (Table 40).

Table 39. Number and Percent Distribution of Deaths by Age Groups, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Age	1931-1932			1932-1933			1933-1934			1934-1935		
	Both sexes		Female	Both sexes		Female	Both sexes		Female	Both sexes		Female
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	Number											
Under 1	215	102	113	229	98	131	331	162	169	156	88	68
1-4	184	88	96	117	62	55	221	109	112	81	41	40
5-19	119	69	50	120	66	54	162	73	89	50	24	26
20-39	123	75	48	93	43	50	117	52	65	69	38	31
40-59	169	115	54	91	63	28	128	86	42	78	49	29
60-64	47	30	17	57	38	19	46	31	15	29	21	8
65+	78	29	49	69	28	41	96	39	57	39	16	23
Total	935	508	427	776	398	378	1,101	552	549	502	227	225
	Percent											
Under 1	23.0	20.1	26.5	29.5	24.6	34.7	30.1	29.4	30.8	31.1	31.8	30.2
1-4	19.7	17.3	22.5	15.1	15.6	14.6	20.1	19.7	20.4	16.1	14.8	17.8
5-19	12.7	13.6	11.7	15.5	16.6	14.3	14.7	13.2	16.2	10.0	14.8	11.6
20-39	13.2	14.8	11.2	12.0	10.8	13.2	10.6	9.4	11.8	13.7	13.7	13.8
40-59	18.1	22.6	12.6	11.7	15.8	7.4	11.6	15.6	7.7	15.5	17.7	12.9
60-64	5.0	5.9	4.0	7.3	9.6	5.0	4.2	5.6	2.7	5.8	7.6	3.6
65+	8.3	5.7	11.5	8.9	7.0	10.8	8.7	7.1	10.4	7.8	5.8	10.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 40. Deaths and Crude Death Rate Classified by Economic Status, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Economic status	All deaths					Crude death rate				
	1931	1932	1933	1934	1935	1931	1932	1933	1934	1935
Rich	44	54	57	38	193	26.5	32.3	33.9	21.7	28.5
Well-to-do	285	223	356	170	1,034	39.6	31.0	49.3	23.2	35.7
Poor	606	499	688	294	2,087	46.6	39.6	56.0	24.5	41.8
Total	935	776	1,101	502	3,314	42.8	36.1	52.0	23.8	38.7

When grouped as owners, part-owners, and tenants, the death rate of part-owners for the four years combined was lowest and the death rate of owners was highest. The figures given in Table 41 are quite surprising at first. The death rate of owners would be expected to be the lowest and

that of tenants the highest because the economic status of owners is higher than that of part-owners and that of part-owners is higher than that of tenants. The explanation lies in the different age composition of these groups. The age composition of the owners is favorable to a high death rate. Under the condition of economic depression and the imposition of the "ten mow contribution" in the Kiangyin registration area, a number of people shifted their burdens to their sons when the latter were grown up. Those aged parents liked to live alone and farmed a very small piece of land owned by themselves. They preferred to live separately from their sons. This is why the size of owner's farm and the size of owner family are small, the birth rate is low, and the death rate is high.

Table 41. Deaths and Crude Death Rate of Farm Families, Classified by Land Tenure, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Land tenure	Deaths					Crude death rates				
	1931	1932	1933	1934	1931	1931	1932	1933	1934	1931
	-32	-33	-34	-35	-35	-32	-33	-34	-35	-35
Owner	58	64	63	36	221	43.6	49.1	48.5	27.6	42.2
Part-owner	374	334	535	236	1,479	36.1	32.1	51.6	22.4	35.5
Tenant	322	266	343	149	1,080	46.9	39.5	51.4	22.6	40.2

#### Infant Mortality

The registration of infant deaths is a troublesome and difficult work. Sometimes infant deaths might be reported as stillbirths, and stillbirths as infant deaths. Because infanticide is a face-losing thing the parents would report infanticide cases as cases of stillbirths. Because infant deaths are considered as of no importance some of them might not be reported at all. In the Kiangyin registration area we have had bitter experiences in securing infant deaths. It took a long time to overcome the prejudice of the people.

When there is a very high birth rate, a general instability of economic conditions, an almost complete lack of the medical care of children, and no knowledge on the part of parents of how to care for children, the infant mortality is bound to be high. The rate for the four years combined was 240.9 (Table 42). This is the highest infant mortality rate known to the authors. In only five other countries for which data could be found does the rate exceed 150 and in none of these does it reach 200.\* The infant mortality for most countries in the world is under 100.

Considering the living conditions in the Kiangyin registration area, the infant mortality of 240.9 does not seem excessive. This figure is in fact probably too low because of the failure to register all infant deaths, particularly infanticides and deaths which occur shortly after birth. Infant mortality for the second year was higher than that for the first year, and that for the third year was higher than that for the second

\* The five countries with infant mortality rates of over 150 during 1932-1935 are as follows: Ceylon, 189; Rumania, 183; Soviet Republics, 173 (1930 and 1932 only); Egypt, 166; and Hungary, 157.

Table 42. Births, Infant Deaths, and Infant Mortality by Sex, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Year	Number of births			Number of infant* deaths			Infant mortality**		
	Both sexes		Female	Both sexes		Female	Both sexes		Female
	Male	Female		Male	Female		Male	Female	
1931-32	1,057	552	505	215	102	113	203.4	184.8	223.8
1932-33	947	487	460	229	98	131	241.8	201.2	284.8
1933-34	848	428	420	331	162	169	390.3	378.5	402.4
1934-35	1,012	572	440	156	88	68	154.2	153.8	154.5
Total	3,864	2,039	1,825	931	450	481	240.9	220.7	263.6

\* Deaths under 1 year of age. \*\* Deaths of infants per 1000 live births.

year. In the fourth year, however, it dropped to a very low level for this community. When account is taken of the abnormal preponderance of male births in the fourth year it appears rather probable that a considerable number of deaths of female infants was missed in this year. The high rates of infant mortality in the second year and also the third year were due in part to the higher maternal mortality and the diseases of tetanus neonatorum and diphtheria which occurred in these years. Malaria was also very severe in 1932 and 1933, especially in 1933. It took a large toll of deaths among women. Because mothers were attacked by these diseases they could not give their children the usual care, hence infant mortality increased. Furthermore, many pregnant women who were attacked by malaria delivered their children prematurely. Although these children were born alive many of them died shortly thereafter. Besides, the diseases of diphtheria and meningitis which occurred in the spring of 1934 took a large toll among very small children.

In Western countries there are always more deaths of male infants than of female infants. Table 42 shows that just the opposite is true here, except for the fourth year. As already said, this is probably due in large measure to the lower esteem in which female babies are held in China. That there are cases of female infanticide but rarely cases of male infanticides is further proof of this attitude.

Table 43. Infant Deaths and Infant Mortality Rates, Classified by Economic Status, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Economic status	Deaths under 1 year					Infant mortality rates				
	1931	1932	1933	1934	1935	1931	1932	1933	1934	1935
	-32	-33	-34	-35	-35	-32	-33	-34	-35	-35
Rich	10	16	22	12	60	161.3	275.9	379.3	173.9	242.9
Well-to-do	80	80	121	60	341	219.8	240.2	373.5	154.6	242.0
Poor	125	133	188	84	530	198.1	239.2	403.4	151.4	240.0
Total	215	229	331	156	931	203.4	241.8	390.3	154.2	240.9

Generally the infant mortality is low in families with relatively easy economic conditions and high in families with relatively difficult economic conditions. Table 43 shows that infant mortality for the four years combined was highest for rich families, but almost as high for well-to-do families. It was slightly lower for poor families although there is little difference between them. The high infant mortality for rich and well-to-do families is to be regarded as the natural consequence of the living conditions for all groups in this community — lack of sanitation, constant childbearing, poor infant care, and harsh economic conditions, even for those classed here as well-to-do and rich. The fact that infant mortality is no higher among the poor than among the rich is probably due to the sending of new-born babies from the very poor families to the Kiangyin nursery and to cities such as Shanghai and Wusih. The sending of new-born babies to the nursery and to cities would naturally lower the infant mortality in the district because the deaths of these children would not be recorded in Hsiao Chi. We were told that those infants that had the least chance to live were sent to the Kiangyin nursery and to the cities. The infant mortality among the rich people may have been kept high in part by too much doctoring of the new-born children. When a baby is sick several doctors may be sent for at one time. These doctors in the country know nothing about modern medicine and sanitation. We believe that in the Kiangyin registration area a large number of babies die from taking improper medicine. Furthermore, the number of rich families is small and may not be altogether typical.

The infant mortality for the four years combined when classified by land tenure is lowest for owners and highest for part-owners (Table 44). The slightly higher infant mortality of part-owners than of tenants is probably due to a larger number of new-born babies being sent from the tenant families to the Kiangyin nursery and to the cities as mentioned above. Many of these new-born babies would die in the country if they were not sent out.

Table 44. Infant Deaths and Infant Mortality Rates,  
Classified by Land Tenure of Farm Families,  
Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Land tenure	Number of infant deaths					Infant mortality rates				
	1931	1932	1933	1934	1931	1931	1932	1933	1934	1931
	- 32	-33	-34	-35	-35	-32	-33	-34	-35	-35
Owner	9	16	11	9	45	145.2	320.0	215.7	163.6	206.4
Part-owner	109	110	191	90	500	217.6	220.9	439.1	156.3	248.8
Tenant	78	82	103	43	306	216.1	278.9	364.0	144.8	247.8



## CHAPTER VII

### MIGRATION

"Recent ecological investigations have proved that most animals migrate, either at regular or irregular intervals, whenever their surroundings become unsuitable for their life or breeding. In particular, the supply of food, which varies from year to year and place to place, exercises a very important control over their movements. By such migratory movements the density of numbers of any species of animal becomes adjusted to the resources of its environment; and when, as frequently happens, such final adjustment is impossible, the migration may take place on a very large scale, leading to the death from starvation, disease, or other causes of the majority of the migrants." This is a statement made by Professor Charles Elton in his paper, entitled, (16) "Animal Population and Migration" The main purpose of the movement of population in human society is probably the same as in animal society. Very often the people say that "Going out one li cannot be compared with the staying at home". But in time of economic insufficiency and in time of scarcity of food, the people do not hesitate to move despite the fact that the migration of any person involves placing him in a new set of surroundings to which he must make new adjustments.

Owing to frequent floods and drought in the interior many people have left the farm. In the Kiangyin registration area the people have largely gone to Wusih and Shanghai to earn their livelihood since these cities are not very far from Hsiao Chi. After finding those places also intolerable, or having saved some money after working there for some years the migrants may return.

In places with large migratory population the work of vital registration is not easy. It is quite usual that a person after staying here for a while may again move out. For instance, a man goes to Shanghai and lives there for some months and again comes back. When a person leaves his village he is recorded as an emigrant and when he comes back he is registered again as an immigrant. There is also the fact that a person after staying at Shanghai, for instance, for some time would go back, but to another village in Hsiao Chi, and would live there as a farm laborer. At this time the reporter in that village where the man lives and works counts him as an immigrant from his native village rather than from Shanghai. It happens, therefore, that under the column of "from what place" in the immigration schedule the name of Village A or B, rather than Shanghai, from which he really came, is filled in. Unless the data are carefully checked this kind of error cannot be avoided. At this time we should like to mention also the tiresome work of registering seasonal laborers. It happens, for instance, that at the time of raising silkworms they go to Wusih or some other place to hunt a temporary job. When the silkworm season is over they come back for their farm work. When the work on the farm is finished they again go out. Within a few months the same person may be registered in the same place several times. It would be well, therefore, in choosing a place for registration to choose a place with as small migratory movement as possible.

## Immigration

The number of immigrants increased steadily from year to year (Table 45). This is an indication that economic depression was probably more severe in other areas than in the Hsiao Chi district. Of these immigrants a large number are returning to their former homes. Owing to unemployment they come back to the interior. Furthermore, transportation facilities from Hsiao Chi to other areas are very convenient since the Wusih-Kiangyin highway was built in 1932. Without doubt, this is another reason for the steady increase of migrants.

Table 45. Number and Percent Distribution by Age of Immigrants by Sex, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Age	Both sexes				Males				Females			
	1931	1932	1933	1934	1931	1932	1933	1934	1931	1932	1933	1934
	-32	-33	-34	-35	-32	-33	-34	-35	-32	-33	-34	-35
	Number											
0-4	14	17	19	20	8	10	12	13	6	7	7	7
5-9	11	11	16	17	2	3	11	7	9	8	5	10
10-14	18	33	26	37	7	10	19	15	11	23	7	22
15-19	55	65	73	92	7	17	25	23	48	48	48	69
20-24	36	39	57	87	2	8	26	39	34	31	31	48
25-29	11	17	34	49	5	9	22	32	6	8	12	17
30-34	13	11	19	40	5	5	13	26	8	6	6	14
35-39	8	11	15	22	3	5	12	16	5	6	3	6
40-44	5	15	3	11	3	7	..	8	2	8	3	3
45-49	6	7	6	10	3	5	2	8	3	2	4	2
50 +	11	15	20	32	5	6	10	15	6	9	10	17
Total	188	241	288	417	50	85	152	202	138	156	136	215
	Percent											
0-4	7.4	7.0	6.6	4.8	16.0	11.8	7.9	6.4	4.3	4.5	5.1	3.3
5-9	5.9	4.6	5.6	4.1	4.0	3.5	7.2	3.5	6.5	5.1	3.7	4.7
10-14	9.6	13.7	9.0	8.9	14.0	11.8	12.5	7.4	8.0	14.8	5.1	10.2
15-19	29.3	27.0	25.4	22.0	14.0	20.0	16.4	11.4	34.8	30.8	35.3	32.1
20-24	19.1	16.2	19.8	20.9	4.0	9.4	17.1	19.3	24.6	19.9	22.8	22.3
25-29	5.9	7.0	11.8	11.7	10.0	10.6	14.5	15.8	4.3	5.1	8.8	7.9
30-34	6.9	4.6	6.6	9.6	10.0	5.9	8.6	12.9	5.8	3.8	4.4	6.5
35-39	4.2	4.6	5.2	5.3	6.0	5.9	7.9	7.9	3.7	3.8	2.2	2.8
40-44	2.6	6.2	1.0	2.6	6.0	8.2	....	4.0	1.5	5.1	2.2	1.4
45-49	3.2	2.9	2.1	2.4	6.0	5.9	1.3	4.0	2.2	1.3	3.0	0.9
50 +	5.9	6.2	6.9	7.7	10.0	7.0	6.6	7.4	4.3	5.8	7.4	7.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

More females than males were found among immigrants during the first and second years and a few more during the fourth year. This is due to the fact that all the women from outside who were married to men in Hsiao Chi were counted as immigrants. In China, after marriage, a woman almost always lives in her husband's home. That "being married to a chicken follows a chicken and being married to a dog follows a dog" is the saying. The large proportion of female immigrants at ages 15-24 is due to those newly-married people from outside. In Hsiao Chi community the rearing of a fiancée for the son or for the grandson is practiced and especially in recent years because of the falling prices of farm products. Most girls under 14 who have come to the area came under these conditions. Since "of the three unfilial acts the greatest is to have no heirs" those who have no sons very often adopt the children of some poor people as their sons. Most of the immigrant boys under 10 have come to the area in this way. The community of Hsiao Chi is an agricultural community. A considerable number of men have come to the area as hired farm laborers. Besides, after working outside for some years men often come back to farm their own land, or because they are aged and have been discharged from their jobs elsewhere.

There is some fluctuation in the number of migrants from year to year. It is a natural tendency for the human being to move away from unpleasant or economically undesirable surroundings in the attempt to find better surroundings and better living conditions. Many people have moved away from this district in search of better opportunities. If they do not find better living outside the registration area they come back to the interior. Because of the economic depression the migration of population was rather large during the time of our study. It is very interesting for us to note that following the decline of prices of different commodities, the movement of population has become larger from year to year. Among the migrants we should like to call attention to the increasing number of males. From Table 46 we see that 48.4 percent of the immigrants were males in 1934-35 and that an even higher proportion were males in 1933-34 (52.8 percent). This may be compared with 35.3 percent in 1932-33 and 26.6 percent in 1931-32. The large increase in the proportion of male immigrants in the

Table 46. Percent Distribution by Sex of Immigrants by Age in Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Age	1931-32		1932-33		1933-34		1934-35		1931-35	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Under 5	57	43	59	41	63	37	65	35	61	39
5-9	18	82	27	73	69	31	41	59	42	58
10-14	39	61	30	70	73	27	41	59	45	55
15-19	13	87	26	74	34	66	25	75	25	75
20-24	6	94	21	79	46	54	45	55	34	66
25-29	45	55	53	47	65	35	65	35	61	39
30-34	38	62	45	55	68	32	65	35	59	41
35-39	37	63	45	55	80	20	73	27	64	36
40-44	60	40	47	53	..	100	73	27	53	47
45-49	50	50	71	29	33	67	80	20	62	38
50 +	45	55	40	60	50	50	47	53	46	54
Total	26.6	73.4	35.3	64.7	52.8	47.2	48.4	51.6	43.1	56.9

later years is caused by the deepening of the economic depression in urban areas as well as in rural districts. Because men are the wage-earners they are affected more directly than women by economic changes. If we subtract the number of women coming in as a result of marriages we will have even fewer true female immigrants than the number given in Table 45.

The migratory movement in Hsiao Chi has a marked local character. A large proportion of the immigrants come from the local county. Of the total immigrants during the four years, 1931-1935, 65.1 percent came from the local hsien of Kiangyin as compared with 34.3 percent from other parts of the province of Kiangsu. Only 0.6 percent came from other provinces. Those who came from the local hsien were largely farm laborers, women as brides for men in Hsiao Chi, and children brought as adopted sons or as fiancées for sons or for grandsons. Those who have come from other districts outside the local hsien were largely factory laborers and business men. They were largely people returning either because of unemployment or to retire. (See Table 47).

Table 47. Number and Percent Distribution by Place of Migration of Immigrants, by Sex, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Place of Migration	Both sexes				Male				Female			
	1931	1932	1933	1934	1931	1932	1933	1934	1931	1932	1933	1934
	-32	-33	-34	-35	-32	-33	-34	-35	-32	-33	-34	-35
	Number											
Local hsien (Kiangyin)	119	151	179	289	22	47	94	140	97	104	85	149
Native province (Kiangsu)	65	89	108	127	26	38	57	61	39	51	51	66
Other provinces	4	1	1	1	2	...	1	1	2	1	...	...
Total	188	241	288	417	50	85	152	202	138	156	136	215
	Percent											
Local hsien (Kiangyin)	63.3	62.7	62.2	69.3	44.0	55.3	61.8	69.3	70.3	66.7	62.5	69.3
Native province (Kiangsu)	34.6	36.9	37.5	30.5	52.0	44.7	37.5	30.2	28.3	32.7	37.5	30.7
Other provinces	2.1	0.4	0.3	0.2	4.0	...	0.7	0.5	1.4	0.6	...	...
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The arrival of immigrants takes place largely at the end of the Chinese year and the departure of emigrants is heaviest during February and March, just after the Chinese New Year. This is due both to the seasonal

character of the employment of immigrants and to the strong desire of the Chinese to spend New Year with their families.

The work open to the people in this district is mainly agricultural. This is evident from the very small proportion of immigrants engaged in commercial, mechanical, and other types of work (Table 48). Most of those engaged in commerce and mechanics lived in Hsiao Chi market towns.

Table 48. Number and Percent Distribution of Immigrants by Occupation after Migration, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Kind of occupation	Both sexes				Male				Female			
	1931	1932	1933	1934	1931	1932	1933	1934	1931	1932	1933	1934
	-32	-33	-34	-35	-32	-33	-34	-35	-32	-33	-34	-35
	Number											
Dependents	19	21	29	54	9	10	17	24	10	11	12	30
Agriculture	18	35	72	113	14	30	70	112	4	5	2	1
Housekeeping	82	89	79	161	1	...	...	5	81	89	79	156
Mechanical industries	3	5	11	19	3	5	11	19	...	...	...	...
Commerce	4	15	23	19	4	15	23	19	...	...	...	...
Professional service	2	4	2	2	1	3	2	2	1	1	...	...
Domestic service	6	13	18	23	2	3	8	5	4	10	10	18
Transportation..	...	...	...	5	...	...	...	5	...	...	...	...
Unknown	54	59	54	21	16	19	21	11	38	40	33	10
Total	188	241	288	417	50	85	152	202	138	156	136	215
	Percent											
Dependents	10	9	10	13	18	12	11	12	7	7	9	14
Agriculture	10	15	25	27	28	35	46	55	3	3	2	...
Housekeeping	44	37	27	39	2	...	...	3	59	57	58	73
Mechanical industries	2	2	4	5	6	6	7	9	...	...	...	...
Commerce	2	6	8	5	8	18	15	9	...	...	...	...
Professional service	1	2	1	...	2	3	2	1	1	1	...	...
Domestic service	3	5	6	5	4	3	5	3	3	6	7	8
Transportation..	...	...	...	1	...	...	...	3	...	...	...	...
Unknown	28	24	19	5	32	23	14	5	27	26	24	5
Total	100	100	100	100	100	100	100	100	100	100	100	100

#### Emigration

It seems to us that the population of the Kiangyin registration

area has already reached the point of over-saturation. Any addition to the number of people in the locality would further depress the levels of living of the general masses which are already suffering from scarcity. In recent years there has been a larger movement of people away from the district than into it. During the four years, 1931-1935, there were no less than 2,485 persons who left Hsiao Chi district, 345 in the first year, 590 in the second year, 556 in the third year, and 994 in the fourth year (Table 49). The increase in the number of emigrants in the last three years is principally caused by pressure of population and the convenience of transportation after the Wusih-Kiangyin highway was built. By taking the bus at Chang Chia Chiao station of Hsiao Chi district one spends only fifteen to twenty minutes to Kiangyin, and about forty minutes to Wusih. Before the highway was built people had to travel to Kiangyin and to Wusih by boat or by foot and the migratory movement was not very large. But since the highway was built from Wusih to Kiangyin the people rarely go by boat or afoot. They take the bus. The bus fare from Chang Chia Chiao station to Wusih, about sixteen miles, is only forty cents; to Kiangyin, about six miles, it is twenty-five cents. There is much traffic on this road, and overcrowding on the bus is the usual thing. We are told that most passengers are farmers and factory laborers.

Of 2,485 emigrants 51.5 percent went from the Hsiao Chi district to different places within the local hsien, i.e., within Kiangyin County. The people who went to different regions within the local hsien are largely (a) farm laborers hired by the people outside the registration area, (b) women married to outside people, (c) infants, especially the female infants sent to the Kiangyin nursery, (d) children being adopted as people's sons, (e) child laborers, (f) girls going out as fiancées for sons and for grandsons.

Generally, more female emigrants than male emigrants were found at ages of 10 and under, at ages 15 to 24, and at ages of 50 and over. At a time of economic hardship it is to be expected that more female children would be sent to the Kiangyin nursery, that more would be sent to cities for sale or to be given away as fiancées for sons or for grandsons. In recent years probably more girls have left the interior to be bound servants in urban communities. We know that rich people living in urban areas often buy small girls for a few dollars for servants in their households. They prefer these young girls to aged amahs. And very often the poor people get small girls to rear as wives for their sons or their grandsons. From the proportion of female emigrants at ages 15 to 24 it appears that many young women also went out to get married. During this time of economic hardship, we should also mention that women as well as men have been moving to urban areas to hunt work. That more females than males at age 50 and over have left the interior is due to the larger movement of females in those ages toward the urban areas to secure housework. Men at 50 and over find it very difficult to get jobs in urban industry, but for women it is still easy to find work as amahs.

Of 2,485 emigrants 48.2 percent had migrated to different places within native provinces but outside the local hsien (Table 51). This actually means chiefly to the cities of Shanghai and Wusih. Shanghai and Wusih are generally regarded as desirable regions and very often the people who have already gone there urge their kin and their friends to join them. Hence, many people sell their land and go there. But this does not mean

Table 49. Number and Percent Distribution by Age of Emigrants by Sex, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Age	Both sexes				Male				Female			
	1931	1932	1933	1934	1931	1932	1933	1934	1931	1932	1933	1934
	-32	-33	-34	-35	-32	-33	-34	-35	-32	-33	-34	-35
	Number											
Under 1	26	33	37	•	6	7	4	•	20	26	33	•
0-4	58	87	86	90	17	31	32	32	41	56	54	58
5-9	20	45	39	58	11	20	16	21	9	25	23	37
10-14	58	87	75	120	35	51	41	60	23	36	34	60
15-19	66	125	100	216	22	57	44	83	44	68	56	133
20-24	43	78	94	169	14	33	33	78	29	45	61	91
25-29	25	41	56	102	17	23	29	63	8	18	27	39
30-34	26	41	38	74	16	25	20	45	10	16	18	29
35-39	19	26	20	58	10	9	13	38	9	17	7	20
40-44	12	34	18	25	9	17	7	17	3	17	11	8
45-49	11	9	8	17	5	4	6	13	6	5	2	4
50 †	7	17	22	65	2	11	6	26	5	6	16	39
Total	345	590	556	994	158	281	247	476	187	309	309	518
	Percent											
Under 1	7.5	5.6	6.7	•	3.8	2.5	1.6	•	10.7	8.4	10.7	•
0-4	16.8	14.7	15.5	9.1	10.7	11.0	13.0	6.7	21.9	18.1	17.5	11.2
5-9	5.8	7.6	7.0	5.8	7.0	7.1	6.5	4.4	4.8	8.1	7.4	7.1
10-14	16.8	14.7	13.5	12.1	22.1	18.2	16.6	12.6	12.3	11.7	11.0	11.6
15-19	19.1	21.2	18.0	21.7	13.9	20.3	17.8	17.4	23.5	22.0	18.1	25.7
20-24	12.5	13.2	16.9	17.0	8.9	11.7	13.4	16.4	15.5	14.6	19.7	17.6
25-29	7.3	7.0	10.1	10.3	10.8	8.2	11.7	13.2	4.3	5.8	8.7	7.5
30-34	7.5	7.0	6.8	7.5	10.1	8.9	8.1	9.5	5.4	5.2	5.8	5.6
35-39	5.5	4.4	3.6	5.8	6.3	3.2	5.3	8.0	4.8	5.5	2.3	3.9
40-44	3.5	5.8	3.2	2.5	5.7	6.1	2.8	3.6	1.6	5.5	3.6	1.5
45-49	3.2	1.5	1.4	1.7	3.2	1.4	2.4	2.7	3.2	1.6	0.7	0.8
50 †	2.0	2.9	4.0	6.5	1.3	3.9	2.4	5.5	2.7	1.9	5.2	7.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

• Data not available for 1934-35.

that Shanghai and Wusih offer better living conditions. Many people who go to those cities and find jobs are dissatisfied with them. Besides, many people after staying at Wusih and Shanghai for weeks or even for months are still without jobs. Very often the money they brought with them is exhausted and the people are still unemployed, consequently, they are compelled to return to their native villages. Coming back to the interior they may not find work either if their land has already been sold and no one needs them as farm laborers.

Table 50. Percent Distribution by Sex of Emigrants by Age in Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Age	1931-32		1932-33		1933-34		1934-35		1931-35	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0-4	29	71	36	64	37	63	36	64	35	65
5-9	55	45	44	56	41	59	36	64	42	58
10-14	60	40	59	41	55	45	50	50	55	45
15-19	33	67	46	54	44	56	38	62	41	59
20-24	33	67	42	58	35	65	46	54	41	59
25-29	68	32	56	44	52	48	62	38	59	41
30-34	62	38	61	39	53	47	61	39	59	41
35-39	53	47	35	65	65	35	66	34	57	43
40-44	75	25	50	50	39	61	68	32	56	44
45-49	45	55	44	56	75	25	76	24	62	38
50 +	29	71	65	35	27	73	40	60	41	59
Total	45.8	54.2	47.6	52.4	44.4	55.6	47.9	52.1	46.8	53.2

Table 51. Number and Percent Distribution by Place of Migration, of Emigrants by Sex, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Place of migration	Both sexes				Males				Females			
	1931	1932	1933	1934	1931	1932	1933	1934	1931	1932	1933	1934
	-32	-33	-34	-35	-32	-33	-34	-35	-32	-33	-34	-35
	Number											
Local hsien (Kiangyin)	148	285	250	596	49	115	90	278	99	170	160	318
Native province (Kiangsu)	197	302	302	396	109	163	153	196	88	139	149	200
Other provinces	...	3	4	2	...	3	4	2	...	...	...	...
Total	345	590	556	994	158	281	247	476	187	309	309	518
	Percent											
Local hsien (Kiangyin)	42.9	48.3	45.0	60.0	31.0	40.9	36.4	58.4	52.9	55.0	51.8	61.4
Native province (Kiangsu)	57.1	51.2	54.3	39.8	69.0	58.0	62.0	41.2	47.1	45.0	48.2	38.6
Other provinces	...	0.5	0.7	0.2	...	1.1	1.6	0.4	...	...	...	...
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

In recent years flood, drought, and pestilence have added to the economic handicaps of existence in Hsiao Chi and the situation is further aggravated by heavy land taxation. In 1933, for instance, the levy on



cultivated land amounted to \$1.20 or more per mow. At the same time the prices of farm products were declining. Frequently the people leave the area in order to escape from their debts and obligations. In the Kiangyin registration area more than ninety families out of each hundred are more or less in debt. At the present time it is practically impossible for anyone to secure credit.

Table 52. Number and Percent Distribution of Emigrants by Occupation after Migration, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Kind of occupation	Both sexes				Male				Female			
	1931	1932	1933	1934	1931	1932	1933	1934	1931	1932	1933	1934
	-32	-33	-34	-35	-32	-33	-34	-35	-32	-33	-34	-35
	Number											
Dependents	66	104	99	221	22	37	37	85	44	67	62	136
Agriculture	19	40	33	211	19	39	33	208	...	1	...	3
Housekeeping	69	101	81	263	...	1	1	5	69	100	80	258
Mechanical industries	61	91	82	105	45	60	47	67	16	31	35	38
Commerce	18	44	37	62	18	44	37	59	...	...	...	3
Professional service	8	5	5	4	5	3	4	4	3	2	1	...
Domestic service	9	32	55	92	6	10	14	24	3	22	41	68
Transportation	1	9	16	12	1	9	16	12	...	...	...	...
Public service	...	3	2	1	...	3	2	1	...	...	...	...
Unknown	94	161	146	23	42	75	56	11	52	86	90	12
Total	345	590	556	994	158	281	247	476	187	309	309	518
	Percent											
Dependents	19	18	18	22	14	13	15	18	23	22	20	26
Agriculture	6	7	6	21	12	14	13	44	...	...	...	1
Housekeeping	20	17	14	27	...	...	...	1	37	32	26	50
Mechanical industries	18	15	15	11	28	21	19	14	8	10	11	7
Commerce	5	8	7	6	11	16	15	12	...	...	...	1
Professional service	2	1	1	1	3	1	2	1	2	1	1	...
Domestic service	3	5	10	9	4	4	6	5	2	7	13	13
Transportation	...	2	3	1	1	3	6	3	...	...	...	...
Public service	...	...	...	...	...	1	1	...	...	...	...	...
Unknown	27	27	26	2	27	27	23	2	28	28	29	2
Total	100	100	100	100	100	100	100	100	100	100	100	100

Table 52 shows a large number of emigrant men engaged in agriculture, the manufacturing and mechanical industries, and in commerce,

while a large number of women engaged in home industries and domestic service. This suggests that in recent years there is a trend of people toward urban work, but it is doubtful that industrialization in Shanghai, Wusih, and other centers will proceed at a rapid enough rate to ease the population pressure in the interior. (For a discussion of this problem see Appendix I).

The balance between the volume of emigration from Kiangyin registration area and that of immigration might serve as an index of the change in the character of the movement. In the four years, 1931-1935, 2,485 emigrants left only 1,134 immigrants arrived, leaving a net emigration of 1,351. Of all migrants 31.3 percent are immigrants and 68.7 percent are emigrants (Table 53). The predominance of emigrants is greatest at ages under 15 and 25-44. At no age do immigrants outnumber emigrants.

Table 53. Percent Distribution by Immigrant and Emigrant, of Migrants by Sex and Five-year Age Periods, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Age	1931-32		1932-33		1933-34		1934-35		1931-35	
	Immi-grant	Emi-grant	Immi-grant	Emi-grant	Immi-grant	Emi-grant	Immi-grant	Emi-grant	Immi-grant	Emi-grant
Both sexes										
0-4	19	81	16	84	18	82	18	82	18	82
5-9	35	65	20	80	29	71	23	77	25	75
10-14	24	76	28	72	26	74	24	76	25	75
15-19	45	55	34	66	42	58	30	70	36	64
20-24	46	54	33	67	38	62	34	66	36	64
25-29	31	69	29	71	38	62	32	68	33	67
30-34	33	67	21	79	33	67	35	65	32	68
35-39	30	70	30	70	43	57	28	72	31	69
40-44	29	71	31	69	14	86	31	69	28	72
45-49	35	65	44	56	43	57	37	63	39	61
50+	61	39	47	53	48	52	33	67	41	59
Total	35.3	64.7	29.0	71.0	34.1	65.9	29.6	70.4	31.3	68.7
Males										
0-4	32	68	24	76	27	73	29	71	28	72
5-9	15	85	13	87	41	59	25	75	25	75
10-14	17	83	16	84	32	68	20	80	21	79
15-19	24	76	23	77	36	64	22	78	26	74
20-24	12	88	20	80	44	56	33	67	32	68
25-29	23	77	28	72	43	57	34	66	34	66
30-34	24	76	17	83	39	61	37	63	32	68
35-39	23	77	36	64	48	52	30	70	34	66
40-44	25	75	29	71	..	100	32	68	26	74
45-49	38	62	56	44	25	75	38	62	39	61
50+	71	29	35	65	62	38	37	63	44	56
Total	24.0	76.0	23.2	76.8	38.1	61.9	29.8	70.2	29.6	70.4

Table 53. Percent Distribution by Immigrant and Emigrant, of Migrants by Sex and Five-year Age Periods, Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935. - (Continued)

Age	1931-32		1932-33		1933-34		1934-35		1931-35	
	Immi- grant	Emi- grant	Immi- grant	Emi- grant	Immi- grant	Emi- grant	Immi- grant	Emi- grant	Immi- grant	Emi- grant
Females										
0-4	13	87	11	89	11	89	11	89	11	89
5-9	50	50	24	76	18	82	21	79	25	75
10-14	32	68	39	61	17	83	27	73	29	71
15-19	52	48	41	59	46	54	34	66	41	59
20-24	54	46	41	59	34	66	35	65	39	61
25-29	43	57	31	69	31	69	30	70	32	68
30-34	44	56	27	73	25	75	33	67	32	68
35-39	36	64	26	74	30	70	23	77	27	73
40-44	40	60	32	68	21	79	27	73	29	71
45-49	33	67	29	71	67	33	33	67	39	61
50 †	55	45	60	40	38	62	30	70	39	61
Total	42.5	57.5	33.5	66.5	30.6	69.4	29.3	70.7	32.8	67.2

When emigrants and immigrants are separated by sex, we find that 70.4 percent of all male migrants were emigrants while only 29.6 percent were immigrants during 1931-1935. The large proportion of male immigrants of middle age can be attributed to the maladjustment of these older people to the urban environment and to their physical inability to carry on factory work. It is to be expected that the older men will leave the urban areas to return to the interior when they can no longer find work in urban occupations.

As in the case of males there were fewer female immigrants than emigrants but the difference was not quite so great. Among female migrants 32.8 percent were immigrants and 67.2 percent were emigrants. Table 53 shows that during 1931-1932 there was more immigration than emigration of females in the age groups 15-24 and 50 and over. There was a rather large movement both in and out at ages 15-24 because of the number of young women going out and coming in to get married (Tables 45 and 49). At ages over 50 it would appear that there was less difficulty in the aged women finding work in urban centers than in aged men finding it. At ages under 5 the ratio of female emigrants to immigrants is higher than that of male emigrants to immigrants. This probably results from more females than males being sent to the Kiangyin nursery and sold as servants to people in the cities; another evidence of the low esteem in which female children are held.

## CHAPTER VIII

### THE RATE OF NATURAL INCREASE

There was a considerable natural increase in population for the first and second years and a large increase during the fourth year (Table 54). For the third year, however, there was a large excess of deaths over births so that the rate of natural increase for the four years was only 6.4\*. Such fluctuations have probably been the usual thing from time immemorial in a community like Hsiao Chi where modern sanitation is entirely lacking, where the standard of living is exceedingly low, and where the community as a whole has extremely slender resources to fall back on in case of disaster. Wherever the margin of safety is so small, a bad year for either crops or health cannot fail to result in a greatly increased death rate. In the Kiangyin registration area almost the entire net excess of births over deaths took place in the fourth and last registration year. There is good reason to think that such a large natural increase must be followed sooner or later by a large increase in the death rate such as took place in the third year of registration.

Table 54. Births and Deaths by Sex, Crude Birth and Death Rates, and Natural Increase in Hsiao Chi, Kiangyin, Kiangsu, China, September, 1931-August, 1935.

Years	Births		Deaths		Birth rate*			Death rate**			Natural increase***
	Male	Female	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	
1931-32	552	505	508	427	48.3	47.8	49.0	42.8	44.0	41.4	5.5
1932-33	487	460	398	378	44.1	43.0	45.3	36.1	35.2	37.2	8.0
1933-34	428	420	552	549	40.0	38.2	42.1	52.0	49.3	55.0	-12.0
1934-35	572	440	277	225	48.0	51.1	44.6	23.8	24.8	22.8	24.2
1931-35	2039	1825	1735	1579	45.1	45.0	45.3	38.7	38.3	39.2	6.4

\* Number of births per 1,000 of total mid-year population.

\*\* Number of deaths per 1,000 of total mid-year population.

\*\*\* Birth rate minus death rate.

We have shown above that there were 1,573 persons per square mile of total area and 2,672.9 per square mile of cultivated land. The cultivated land per capita was 1.45 mow (.24 acres). This is a very densely populated area. The problem of overpopulation is acute. According to Professor E.M. East, each person needs 2.5 acres before he can maintain a

\* As has been noted above there can be little doubt that some births and deaths were not registered. The probability is that for each birth missed there was also a death missed. In addition, as already pointed out, young children sent out of the community probably had a high death rate. This rate of natural increase is therefore to be regarded as a maximum. In reality it should probably be somewhat lower.

high standard of living; Dr. R.R. Kuczynski would place the land needs for good living at 1.5 acres. According to either of these standards the Hsiao Chi area is very greatly overpopulated.

Some people have suggested that the colonization of northwest China and Manchuria might relieve the pressure of population in such areas as Hsiao Chi. But the possibility of expansion in these areas, according to many observers, is strictly limited. Professor James Thorp (32) states "Three types of land have been considered for colonization. First, there are large areas of uncultivated, gently sloping hills in central and southern China. They occur as irregular areas between intensively cultivated rice paddy lands and are very much like hill lands of the southcentral and southeastern United States. These upland soils are very poor and unproductive, on the average, and since China has no large mineral fertilizer deposits like those in the United States, they will probably always be valuable only for forestry. Practically all of them have been cultivated in the past and abandoned to erosion when farmers could not make a living on them.

"A second type of land which has been proposed comprises the saline delta lands of eastern Kiangsu, northern Honan, southern Hopei, and parts of Shantung. Such lands must be diked and drained and the salt gradually removed by leaching with rain or irrigation water. The most extensive cotton-producing soils of Kiangsu are of this type, but reclamation is slow and difficult. They can never be expected to support a very large population, but they do offer some inducements to a limited number of colonists. The salty lands of Kiangsu comprise approximately 1,570,000 hectares. It is doubtful, however, whether 70 percent can be reclaimed during the next two or three generations. Allowing two hectares per family we come to a figure of approximately 550,000 families of perhaps five persons each, or a total of roughly 2,750,000. Four or five years are necessary to put the land into production, and sometimes it does not become productive for ten years. Millions of dollars must be spent for dike and ditch construction in order to control floods and waves and drain away salty subsoil waters.

"Northern Shantung and southern Hopei also have large areas of salty lands -- we do not yet know how much -- but they receive less rainfall and will consequently be more difficult to reclaim unless they can be irrigated. It is very doubtful if they can be expected to support more than two or three million new inhabitants. Thus, with very generous allowance for the potential supporting power of the salty lands of the delta regions, we can hope to find homes and a living for only five or six million people -- and this only at terrific expenditure of labor and capital...

"This brings us to the heart of our subject -- the possibilities for colonization in northwest China, including the great and much discussed province of Sinkiang, or Chinese Turkistan, about which there has been much publicity during the last few years. Dr. Wong Wen-hao estimated, after a careful analysis, that with the utmost optimism we cannot possibly hope to find room for more than ten million new settlers in all of the great northwest. This would take care of two or three years' increase in population, bringing the grand total of colonization possibilities to roughly 16,000,000 people, all of whom would be living under conditions of poverty and low standards, with the spectre of famine just around the corner. In my opinion Dr. Wong's estimate is extremely generous and should

be taken as the absolute maximum.

"There is enough good agricultural land in the loessial region of Shansi, Shensi, and Kansu to support a tremendous number of people if it were not for the fact that these lands receive so little rain. Given plenty of well-distributed precipitation, this region could easily become the granary of China. Given good growing conditions and freedom from oppressive taxation the farmers of the loessial region could produce enough grain in one year to feed them during two or three years of drought. But how infrequently do these favorable conditions exist!

"Many have proposed that irrigation should be established to make these lands produce to their maximum, but we must realize at once that most of the loessial soils occur on rough hilly lands or on high divides which lie hundreds of feet above any source of water supply. Valley lands are already largely irrigated and are very productive, although there are still a few opportunities for limited extension of irrigation. After visiting many parts of the loessial region as far west as Kokonor (Lake), I am fully convinced that possible extension of irrigation would little more than take care of those people who are now living on submarginal lands in the region. It is quite possible that irrigation could be extended in northwestern Kansu and Sinkiang by storing the flood waters from the melting of snow and ice on the mountains bordering northern Tibet and the Tienshan, north of Tarim Basin. Travelers report that much of the suitable land near these mountains is already intensively cultivated; but if water were stored it is possible that agricultural lands could be extended." (See Appendix I).

We must understand that China has no large amount of surplus land and it is impossible for an average Chinese to extend his farm to fifteen or even to ten mow. Compared with the density of population in other countries in terms of cultivated land, surely China is one of the most densely-populated countries in the world. In Japan, there is 1.66 mow of cultivated land per capita and in Italy, there are 4.19 mow (Table 55). In order to maintain the standard of living it is no wonder that Japan wanted Manchuria and Italy Abyssinia. But where should China go? In the Kiangyin registration area the movement of population away from farms to cities such as Shanghai and Wusih is at best only a temporary help, not a solution to the problem of overpopulation. But even as a temporary solution it is extremely doubtful whether the net annual movement of about 338 emigrants to urban areas can solve the problem of pressure in the Kiangyin registration area. Cities such as Shanghai and Wusih do not offer a better living to the majority of their immigrants. Many migrants are just as dissatisfied in these cities as at home. In a large city like Shanghai the majority of people live in very crowded, noisy, dirty areas where living conditions are even worse than in the rural villages. Furthermore, these large cities are dependent upon industrial development. And industrial development is dependent upon the presence of coal, iron, copper, oil, and other basic raw materials. In China these mineral resources are limited. Dr. G.B. Cressey, a prominent geologist, (15, pp. 109-110) states, "The future material prosperity of China is directly linked with her natural resources. The great industrial development forecasted by some prophets is strictly conditioned upon the presence in accessible areas of the needed basic materials. Without coal and oil for power, iron and copper for construction, limestone for cement and as a flux,

Table 55. Cultivated Land in China and Various Countries (9).

Country	Year	Total cultivated land (acres)	Percent of cultivated land to total land	Cultivated land per capita	
				Acres	Mow
United States of Am.	1930	986,771,016	51.8	8.04	52.26
		522,395,804	27.4	4.25	27.63
Russia	1931	336,925,290	6.4	2.10	13.65
India	1931	228,835,924	27.1	.79	5.14
China	1932	211,382,500	7.7	.47	3.07
The China Proper (18 Provinces)		163,543,181	18.1	.40	2.66
Germany	1932	73,413,114	63.1	1.11	7.23
Argentina	1930	59,770,468	8.6	5.05	32.79
Canada	1931	59,633,500	2.7	5.75	37.35
France	1930	53,823,868	40.0	1.29	8.36
Spain	1932	40,821,253	32.4	1.73	11.25
Poland	1931	39,379,584	41.0	1.23	8.02
Slaves	1932	34,465,745	56.4	2.47	16.07
Rumania	1931	32,490,627	41.5	1.80	11.72
Japan	1930	14,952,284	15.8	.25	1.66
Korea	1931	10,961,275	19.8	.56	3.64
Taiwan	1928	2,011,935	22.6	.50	3.25
Chili	1927	28,867,220	15.8	6.73	43.76
Italy	1931	26,562,391	34.7	.65	4.19
Austria	1930	25,163,816	1.3	3.84	24.97
Mexico	1930	24,000,000	4.9	1.46	9.51
New Zealand	1931	19,033,625	28.7	1.24	8.05
England & Wales	1932	9,250,000	24.9	.67	4.34
Scotland	1932	4,622,217	24.2	.95	6.20
Northern Ireland	1930	1,013,281	30.2	.81	5.24
Irish Free State	1931	3,739,266	22.0	1.25	8.10
Persia	1930	17,387,000	.8	3.21	20.84
Indo-China	1928	12,204,656	6.6	.56	3.67
Hungary	1931	11,358,781	49.5	1.31	8.50
Portugal	1931	11,129,663	49.0	1.63	10.60
Czechoslovakia	1931	10,910,337	31.4	.74	4.82
Philippine Islands	1931	9,318,000	23.5	.75	4.88
Sweden	1931	9,274,850	9.1	1.50	9.79
Egypt	1930	8,552,740	3.5	.60	3.30
Siam	1931	7,497,306	5.9	.65	4.23
Bulgaria	1931	6,454,947	25.0	1.18	7.66
Finland	1930	5,741,848	6.6	1.57	10.17
Greece	1931	4,829,763	15.0	.75	4.64
Australia	1931	4,785,632	23.1	.73	4.76
Denmark	1930	4,547,600	42.9	1.28	8.33
Belgium	1931	4,533,600	60.2	.56	3.65
Switzerland	1929	3,568,876	35.0	.88	5.72
Ceylon	1932	3,300,000	20.4	.62	4.03
Norway	1931	2,870,507	3.6	1.02	6.63
Holland	1931	2,560,483	31.8	.32	2.08

and sulphur for sulphuric acid, a nation is distinctly handicapped in this modern age. It has often been vaguely assumed that China was bountifully supplied with all of these, and it will come as a surprise to many to learn that her supplies of oil, iron, copper, and probably sulphur are distinctly limited. Enormous stores of coal are present and there is no lack of limestone, but in the absence of iron it is difficult to see how industry can develop.\* Regarding the timber resources, Professor W.C. Lowermilk (24) states, "China, standing on the threshold of an era of industrial development, finds herself seriously handicapped by a woeful lack of cheap timber. The need of forests in China is one of the outstanding impressions made upon a newcomer to China. Even in other countries where steel and concrete are being more and more substituted for timber, the tendency is to increase the consumption of wood. New uses for wood are arising more rapidly than wood is being replaced by substitutes. The outlook in China where industrial development has scarcely begun is still all the more unpromising, for the densely populated sections are practically treeless. The village trees supply generally the local needs for coffins and construction; there is no reserve for ship timbers, for railway ties, bridge timbers, trestle construction, spur dikes, river bank facings and tree re-tards, mining props, paper pulp, and for other numerous uses called for by improvements in transportation, communication, and national development."

Evidently, the natural resources in China are not favorable to the industrial expansion. The growth of very many large cities such as New York and London is almost impossible. And even though the natural resources are abundant and are well located to encourage industrial development, we believe that the population pressure might still remain acute. This is because the number migrating from the villages into industrial centers would probably soon be made up by an excess of births. As we have shown, the birth rate for the fourth year, 1934-35, in the Kiangyin registration area was as high as in the first and second registration years, but the death rate was greatly reduced, to about 24 per thousand. Almost half of the people removed by emigration during the four years, 1931-35, were replaced by the excess of births over deaths in the fourth year.

Everywhere we go we strongly feel the hunger of swarming millions. If China has four hundred and fifty millions of people there are probably three hundred and fifty millions who live from hand to mouth and suffer more or less chronically from lack of food. Overpopulation is one of the very important causes of the poverty of the majority of the people. Before a meeting at the Carnegie Hall, New York, in 1922, Mrs. Margaret Sanger said thus: "In China, we witness the last act in the national tragedy of overpopulation. Here is a great empire prostrate in the dust. China, the mysterious fountain-head of art, philosophy, and the deepest wisdom of the world, has been brought down by the superabundant breeding of its worst elements. It is difficult for anyone who has not visited China to realize the situation. Here are masses of human beings who live below the level of animals. They eat, sleep, and breed in the crowded streets and alleys. Thousands have not even a foothold of the land. They are compelled to live in makeshift boats on the crowded banks of the rivers. We have respect and

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\* For further discussion of probable industrial development in China, see App. I, Pt. 2



reverence for the ancient culture of China. We bow before the ancient civilization of Asia, the original fountain-head of human wisdom. Therefore, all the greater is the tragedy of China. The flame of Asiatic civilization is flickering. It is threatened with extinction. There is a rising tide of famine, of wretchedness, of disease, a flood which because of the incessant fertility of those millions spreads like a plague. To contribute to funds and to the support of missions in China is like trying to sweep back the sea with a broom. But as long as the American public prefers sentimentality to science, this waste of funds, thrown into the bottomless pit of charities, will continue. The Chinese do not need our missions. They need our science, our sanitation, our hygiene, our birth control."

We may not unreservedly endorse Mrs. Sanger's comments on the foreign missions in China, but we believe that her observation of the deplorable conditions in this country is still true today in the area we have surveyed which, as has been said, is believed to be fairly typical of many hundreds of such districts in east-central China. China does not need any increase in population, but a low birth rate and a low death rate. The reducing of the birth rate, we believe, would bring a higher standard of living and accelerate China's social and national progress. The progress and strength of a nation does not depend upon the quantity of people but upon the quality of their civilization and the level of their economic production. In recent years many people have been saying "China for the Chinese", but we would enlarge this slogan to "China for the Chinese but efficient Chinese for China." Here efficient Chinese means skillful, intelligent, healthy, and economically secure Chinese. It seems to us that there is no hope of having the majority of people skillful, intelligent, healthy, and secure unless the birth rate in China is greatly reduced. Dr. Warren S. Thompson (30, p. 67) states, "Is there, then, no reasonable hope of reducing permanently the pressure of population among the Chinese? There is not until, in the course of time, birth control becomes general... There is no relief by migration unless it is accompanied by a change in attitude towards the number of births desired. Birth control alone seems to furnish a solution of China's population problem and this will certainly not become a general practice for several generations. Family ties are probably more closely knit in China than in Japan; industrialization will be slower in its growth; contacts with outside ideas, for the masses of the Chinese people, will come very slowly, and as a consequence the spread of birth control will be slow." It is true that at present, the general masses know nothing about contraceptive methods and they are not conscious yet of the need of limiting the size of the family. We do not know how long or how much effort it will require to introduce to the people the idea that birth control lies at the basis of health and sanitation and economic security. But we believe that as soon as the idea of birth control is introduced to the people and they are made aware that there are contraceptive methods suited to their conditions of living not only the birth rate will be reduced but with it the death rate as well. It is our belief that the quality of a population and good conditions for its daily living are much more important than great numbers eking out a wretched existence. We are looking forward to the time when the hospitals in different localities throughout China will open birth control clinics as a part of their regular service to the community. And we are hoping that

before long birth control methods will be devised which are suited to the simple living conditions in China and will be made so cheap that they can be made accessible to everyone.

In no other way does it seem probable that the conditions revealed by this attempt at vital registration in Hsiao Chi can be greatly changed. We are also looking forward to the time when the people who are mentally deficient shall be prevented from having children. Along with these things must go a reform in marriage customs and in certain family ideals. Naturally all such fundamental changes in the attitudes of a great people will, and should, proceed slowly but we believe that the heaven is at work and that if China is given the chance her people need not remain in the condition described above.

## APPENDIX I. THE OUTLOOK FOR THE IMPROVEMENT OF STANDARDS OF LIVING IN CHINA

BY WARREN S. THOMPSON

To an American making acquaintance with China it must almost inevitably seem that improvement in the manner of life of the masses of the Chinese is the great problem with which Chinese statesmen and reformers are confronted. It looms so large in one's view of China that all else seems to be of little importance. This may be a distorted view, but it is certainly difficult for one who believes that all men have a right to a decent living to see the most real and urgent need of China in other than economic terms, that is, as a need for larger real incomes.

Naturally, in canvassing the probabilities of improvement in the standards of living of the masses in China the problem divides into two parts: (a) the agricultural, and (b) the industrial. If the Chinese are to live better it must be as a result of greater productivity in agriculture and industry. Since perhaps 70 percent of all Chinese make their living directly from the soil, while another 10 to 15 percent live in rural communities and make their living indirectly from the land, it will be well to direct our attention first to the possibilities and probabilities of improvement and expansion of Chinese agriculture during the next three or four generations.

### PART I. THE PROBABLE EFFECTS OF PROGRESS IN AGRICULTURE

In order to see the problem clearly at the outset we may put it in the form of a question, which we shall then undertake to answer: Will the progress in Chinese agriculture, which is to be expected during the next three or four generations, be sufficient to permit of better standards of living among any considerable part of the population? It must be clearly understood that in "progress in Chinese agriculture" I would include not only better farming methods and better seeds, but also the extension of the crop area and the more efficient organization of agriculture, both technically and commercially. In this section, then, I shall deal with the probable contribution of an improved agriculture to higher standards of living among the masses of the people. In the following section the contribution of industry to this end will be discussed.

#### Crop Yields in China Compared with Other Countries

It is certainly a very common belief in Europe and America that Chinese agriculture represents the acme of attainment in man's efforts at getting food from a given area of land. I do not believe that it is exaggerating to say that the average Westerner, who is interested in agriculture in a general way and who has tried to learn something of Chinese agriculture by reading, pictures the average Chinese farmer as squeezing the last grain of rice out of the soil by the most patient and painstaking toil. I believe that he also visualizes the Chinese farm as representing the ultimate attainment in the careful utilization of land and in the adaptation of crops to the natural conditions of soil and climate. In China, however, one does not need to talk long with either Chinese or foreigners conversant with agriculture to realize that such notions are regarded as naive and

that, with all its excellent features, Chinese agriculture is far from being as nearly perfect as Westerners are apt to think it. Once one is put on the lookout it is not difficult to confirm, by observation, what the experts say regarding the inefficiency of Chinese agriculture.

It is, of course, true that a great deal of the tilled land in China yields far more per acre per year than is the case with us, for a considerable part of the land in China yields two crops each year. It is also true that the crop yield per acre is larger in many parts of China than in the United States, or even in western Europe. This does not mean, however, that no improvement in Chinese farming is possible nor that the Chinese may not learn much from other peoples which would still further increase their acreage yields under their own methods of cultivation. But it should be remembered in this connection that different systems of agriculture are practiced in China and in the West and that the high acre yields of some crops in China are due to the different systems in vogue rather than to the best possible farming methods. As an example of the differences, it should be noted that in China all agricultural operations, except plowing and a small amount of harrowing, are carried out by hand and for certain crops, notably rice and vegetables, hand cultivation in the very nature of the case yields larger returns than machine cultivation.

The best data on the production of certain staple crops in China are provided by the studies made by Professor Buck (7). These are not of sufficient extent, however, to enable one to speak with assurance regarding acre yields in China as a whole, but if they are indicative, it appears that Chinese farmers are clearly outclassed in the production of the great staples -- rice and wheat -- by the farmers of certain other lands. In rice production the Japanese farmer raises about 30 percent more from a given area than the Chinese farmer, and in wheat production it appears that he raises almost twice as much (25). The great difference in wheat production is no doubt due in part to the differences in climate and soil between the wheat areas of the two countries, but not all of it can be attributed to these natural differences. The better varieties of wheat raised in Japan and the more careful preparation of the soil are also factors of importance. In wheat production, moreover, a number of European countries secure better yields than even Japan does. The better European yields are more than double those of China. Rice and wheat, clearly, are crops in the production of which the Chinese could learn much from other peoples.

Data are not available for comparing vegetable yields, fruit yields, and tuber yields in China with those in Japan or other countries; but I have no doubt that if such comparisons could be made, particularly with regard to fruit and tubers, the same situation would be found. In general, the care of fruit -- for example, spraying, dusting, and pruning -- is far from attaining the standard practiced in commercial orchards in the United States. The root crops raised are of inferior variety and do not appear to be especially well cared for; and the same may be said of the fiber crops. There can be no reasonable doubt, therefore, that, considered as a whole, Chinese agriculture could profit largely from the experience of other peoples in the growing of the more important crops.

#### How Yields Might be Increased

In discussing the possibilities of increasing the yields of Chi-

nese crops, the first thing that is usually mentioned by the specialists is the need for better seed selection, which can be achieved only through extensive work in plant breeding. There are two chief ends to be aimed at in the breeding and selection of better varieties of crops. The first of these in importance is the getting of varieties which can better withstand the attacks of insects and diseases; and the second is breeding better-yielding varieties. Of course, any variety that can resist insects and disease will on the average yield better returns; hence, the prime emphasis is on this aspect of the work. There is no doubt in the minds of the experts with whom I have discussed these matters that the yields of the staple crops — rice, wheat, millet, kaoliang, and soy beans — could easily be increased 20 to 30 percent if better varieties of seeds were brought into general use.

Another factor of considerable importance in keeping down the yields of Chinese agriculture is the treatment of the soil. In general, the plowing is poor, although it is better than one would expect from a mere inspection of the plowing equipment. The poor quality of the plowing is somewhat offset by the large amount of hand labor which goes into the preparation of the seed bed, particularly for rice and vegetables; but even so, better tillage would undoubtedly contribute something to better yields. This is particularly true in the areas where wheat is grown as a winter crop alternating with rice. Again, very little commercial fertilizer is used in China; and if one can judge from the experience of Japan, there seems no reason to doubt that it would contribute considerably to increased yields. In Japan the acreage yield of rice has increased about 65 to 70 percent in the last fifty years and an appreciable part of this increase is attributed to the increasing use of commercial fertilizers (25).

The ways in which better management of the farm might contribute to better yields are manifold, but are for the most part too technical to be treated here. The reader is referred to Professor Buck's study (7) for details. However, I wish to call attention to two separate aspects of better management: (a) as it would manifest itself in more complete utilization of the land already in farms, since I believe that we in the West hold some erroneous notions regarding this matter, and (b) as it would be affected by a regrouping of the parcels which make up the typical Chinese farm.

#### Utilization of Farm Land

With regard to the full utilization of the land already in farms, the Chinese are far behind the Japanese in knowing how to make every foot yield a return. In particular, there is considerable opportunity for the planting of trees in unused corners of fields and in dooryards, and for the growth of vegetables (including root crops) in odd patches of land which cannot well be kept under water for the growth of rice and which are too small to be plowed by animal power. A concrete example will help to make my point clear.

Not long ago, while visiting a region in which bananas form one of the subsidiary crops, we went into one farmyard to look about. At one side I counted five or six banana stalks and then began to look about to see whether all the land within this farmyard was being well used. It was not. I am positive that place could have been found in this farmyard for a dozen more banana stalks on land that was not being used at all and that

several small vegetable patches could also have been added. I have made similar observations in other parts of China, and in talking with men who know still other regions well, it is evident that this waste of odd corners, both in the farmyard and in the fields, is quite common in all parts of China.

One is also impressed by the fact that in the hilly regions there is much land, just beyond the boundaries of the fields now being tilled, that could be employed for dry land crops, such as potatoes, sweet potatoes, or yams, turnips, fruit trees, and vegetables. Such lands are now used chiefly for grazing, or are stripped of their weeds and brush each autumn for fuel. But when it is suggested that this land could be used for crops and, like the odd patches referred to above, could be made to yield substantial returns, the common reply is that the Chinese farmer cannot find time to work these additional areas. I cannot agree with this view, and neither do most of the agricultural specialists of my acquaintance. These men do not hesitate to say that underemployment is one of the curses of the majority of Chinese farmers today. This seems to be clearly indicated by Professor Buck's investigations. He shows that a very large part of the farms are too small to keep the farmer well occupied. Hence, one must conclude that they have a considerable amount of unoccupied time. In consequence, they have smaller incomes than they could have if more land were tilled.

It is my belief that a careful use of all the neglected patches and of the gentler slopes of the immediately adjacent hillsides, would contribute materially to the real incomes of Chinese farmers, if not to their money incomes, and would give them, for a time at least, a larger margin of reserve against the exigencies of life. In this matter, the Chinese farmer could learn much from the Japanese farmer. The superior standard of living of the Japanese farmer is due in no small measure to the fact that he makes better use of the odd patches of land on his farm than the Chinese farmer does. There can be no reasonable doubt that a more judicious and a more complete use of his time and land would add considerably to the productive efficiency of the Chinese farmer.

Just why the Chinese farmer, poor as he is, does not make use of his unemployed time to get some extra food from the odd patches of tillable land he is not now using is puzzling. It is equally hard to understand why he will loaf for several months each year and yet fail to protect his well against contamination, or drain the ditch in which malarial mosquitoes breed, or provide drier earthen or stone floors and better ventilation in his house, when by so doing the ravages of malaria and tuberculosis could be somewhat stayed. In pondering this indifference of the Chinese farmer to the improvements it is within his power to make, one is inclined to wonder whether his undervitalized condition is not in large measure responsible for it. Malaria afflicts a large part of China's population; hookworm is common; tuberculosis is probably the chief cause of death after childhood; while many other devitalizing diseases are general -- so general that the Chinese of abounding vitality among the masses is probably the exceptional person. It is only on the assumption of a general lack of vitality, because of which rest -- lack of movement -- is the greatest blessing, coupled with a dense ignorance of the way in which a small measure of sanitation would affect both his will and his ability to work, that I can understand the indifference to the opportunities for improvement in production and health which seems to characterize the average Chinese farmer. It may be the hopelessness

of it all that appalls him and resigns him to his fate, but I do not believe he has thought this far. I am inclined rather to hold that his lack of vitality, coupled with his custom-bound mental attitudes, makes it almost impossible for him to do more than is necessary to provide a mere existence. In so far as this is the case, things move in a vicious circle somewhat as follows: too little (or improper) food to throw off tuberculosis, and a weakness from tuberculosis too great to permit of better utilization of land and time; too much malaria to leave one with energy to clear out ditches and ponds and screen against mosquitoes, and consequently still more malaria; too much dysentery to leave energy to dig new wells, or properly protect old ones, and therefore chronic dysentery, and so on through the whole list of diseases that debilitate but do not kill at once. Only very, very slowly can this vicious circle be broken so that the farmer will have the desire and the energy to extend his tillage to the less productive lands adjacent to his present fields.

With regard to the part that the consolidation of land holdings would play in bettering Chinese agriculture, we may again refer to what is happening in Japan. There, as in China, the land actually tilled by one farmer is frequently, if not generally, divided into several small plots located in different parts of the village domain. The consequences of this, from the standpoint of efficient farming, are too obvious to need much explanation. The fields are frequently too small to be tilled advantageously; it takes time to move from field to field; too much land is wasted in divisions, dikes, and paths; too many small, odd-sized patches of land are left unused; and the chance for the experimentally-minded farmer to try something new is lessened by the fact that he must grow the same crops his neighbors do in order not to interfere with the village economy. In Japan there has been a considerable amount of readjustment of land holdings, resulting in larger fields more advantageously laid out and more easily worked. That such readjustment has been a factor in the improvement of Japanese agriculture is not questioned by those who have observed it closely, and there is every reason to think that it would have similar results if carried out in China.

Closely associated with the problem of making better use of the land now actually in farms and tillable hillsides immediately contiguous to the village, is the problem of extending the area of farm land by bringing into use the hill lands at somewhat greater distance from the village. At present, these are largely untilled and produce only wild grasses and brush, which are either cut for fuel or are burned over to prevent their becoming coverts for wild beasts and to provide ash, which will be washed down onto the fields when the spring rains set in. In a number of the provinces of China from 80 to 90 percent of all the land is untilled because it is hilly or mountainous. For example, in Kwangtung, the province of which the city of Canton is the capital, it is estimated that the tilled area is 10 to 14 percent of the total. The remainder is practically all hilly and mountainous land, much of which is unproductive at the present time. Most of it, however, is suitable for the growth of timber, fruit, nuts, and cultivated crops where the slopes are not too steep. There is not the least doubt that fairly large areas in these hilly regions could be used for crops which would add considerably to the variety and healthfulness of the average Chinese diet. But by far the larger part must always be devoted to forests and pasture. The products of forest and pasture, are, however, the very things of which China has greatest need. Nothing

would do more to improve housing in China than relatively cheap lumber; while products of the pasture of fruit trees and of nut trees would do wonders to improve the general health of the people.

As I have indicated above, much of the denudation of the hills and mountains is the result of the need of fuel. This is extreme beyond our power of conception. The suffering from cold during several months of each year in the center and north of the country must be intense because of the scarcity of fuel. It is not surprising that the hills are plucked bare each autumn in anticipation of the need during the winter. I see no chance of any large movement in the direction of tree culture in China (lumber, fruit, nuts, or vegetable oils) until the denudation of hillsides is terminated by the opening up of coal mines throughout the country and the cheapening of its cost through the improvement of transportation.

In addition to the better utilization of the hills and mountains, there are considerable areas which are beyond the margin of cultivation by the methods of tillage now in use, but which could be tilled extensively by means of power machinery, as is done in the United States in the semi-arid parts of the wheat belt, even though they would yield crops perhaps only three years out of five. It is not known how large these areas are. They might amount to a hundred million acres or more. But to bring them into use means a complete revolution in the agricultural practice of the farmers who undertake to do so, or the setting up of a strong state capable of undertaking their exploitation. Neither of these events seems likely to occur in the near future.

There is also the possibility of extending the area of intensively tilled land through irrigation. In the Northwest several irrigation projects are now being constructed by the famine relief commission. The largest of them it is said will provide land for about half a million people and will assure them regular crops. The extent of the arid or semi-arid lands which can be successfully irrigated is not known, but it probably does not exceed a few millions of acres and cannot be regarded as of very great importance in expanding China's agricultural area. But in addition to the irrigation of dry lands, there is no doubt room for a considerable expansion of irrigation in the rice-growing regions through better utilization of water and improved means of raising it from rivers and lakes and transporting it to the fields. But irrigation requires vast labor under the best of conditions and it seems doubtful whether China can support any very appreciable increase in numbers on the new lands which can be irrigated (an increase of 5 percent in a population of 400,000,000 is 20,000,000).

There still remains to be considered the possibility of extending the cultivated area in China through the use of new lands in Manchuria and Mongolia. No one knows very accurately how large the tillable area in these parts of China is, but in Harbin, men who should know feel sure that there is room in north Manchuria alone for as many more people as there are now in all Manchuria — 27,000,000 to 30,000,000 (this is only an estimate, but it is the best available, and it at least indicates vast potentialities in this region). Even less is known regarding the unused tillable land in western Manchuria and Mongolia. It is considerable, however, and might possibly provide for another 30,000,000 settlers living in the same manner as those already settled in Manchuria. New lands of good quality, open for settlement, are, therefore, an important factor in the extension of Chinese agriculture and might provide for 60,000,000 or more people.



## Estimates of Arable Area

In attempting to arrive at some figure for the arable area of China as a whole, one finds such large differences of opinion as to the present tilled area and the possibility of its extension among those who have given attention to this matter that one does not know what to say. Dr. O.E. Baker of the United States Department of Agriculture, after working over the figures of the Ministry of Agriculture, estimated the tilled area in 1918 at about 180,000,000 acres and the tillable area at 700,000,000 (excluding Thibet). Messrs. Lieu and Chen place the tilled area at about 260,000,000 acres and do not include gardens and orchards, which presumably are included in Dr. Baker's estimate (23). But they do not give any estimate of the tillable land, appearing to accept Dr. Baker's, although not accepting his figures for the total area of the country.

Among men who have traveled considerably over China and who also know Chinese statistics and, therefore, have a right to an opinion on these matters, there is a disposition to question both the reliability of the figures of the agricultural census on which Dr. Baker based his work, and also to doubt that the tillable area of the country can be ascertained very accurately from the meteorological, topographic, and soil information now available. They seem to believe that the data available are both meager and are subject to large errors. The reasons for thinking that Dr. Baker's estimate of tilled land is too low seem rather convincing to me, as do also the reasons for believing that his estimates of tillable land are probably too high. However, the exact area of tillable land is not crucial to the central point I wish to make.

It will be assumed here that when due allowance is made for the difference between the quality of the land now being used and that yet to be brought into cultivation (much of the new land, as I have pointed out, is hilly and semi-arid), the yield of agricultural products in China can be doubled. I believe this to be a generous estimate. If to this is added the increased product, due to improvements in agriculture referred to above, the possibility of agricultural expansion in China is seen to be very large. China could provide agricultural products for more than twice her present numbers at the prevailing standards, or she could support a considerable increase for two or three generations at improved standards. The practical question from our standpoint, that is, considering the welfare of the people, is: Which is it likely to be?

### Suggestions for Improved Organization of Agricultural Life

But we are by no means through enumerating the possibilities of improvement in Chinese agriculture. There are a number of improvements having to do with the organization of agriculture, rather than with increased productivity and extension of the tilled area which should add appreciably to the welfare of the people under certain conditions.

To my mind, the most important of the improvements affecting the organization of Chinese agriculture has to do with the development of an adequate system of transportation. At present, except along the coast and the navigable rivers, there is little chance for the Chinese farmer to market his products outside his own community. This necessarily means that there is little chance for agricultural specialization such as we have in the West. Thus the Chinese farmer cannot take advantage of the natural

qualities of his climate and soil to produce the most profitable crops in the same way that our farmers can. He is also at the mercy of the local buyer and of local conditions, since there is no chance to sell outside, there being no central market. The consequences of lack of transportation are most tragically apparent when there are local droughts and floods, and famine ensues because food cannot be moved into the stricken areas. This was the case in 1930-31 in northwest China, where hundreds of thousands -- perhaps millions -- died of hunger, while in central and south China there was such an abundance of rice that the farmers complained that they were being ruined because the prices were too low to enable them to pay their debts.\* The opening up of wider markets is one of the crying needs of Chinese agriculture and it cannot take place until the trunk line railways are built and feeder roads suitable to automobile and truck traffic are constructed.

The rate of the extension of the tilled area, both in China proper and in Manchuria and Mongolia, is also largely dependent upon the rate of extension of transportation facilities; for example, the orange area of Swatow cannot be extended until a market is found for the larger crop by having better transport facilities connecting this area with central and north China. Likewise the extension of the soy bean area of Manchuria and Mongolia awaits new markets, both at home and abroad, which in turn are dependent upon better and cheaper transportation; and the same is true of the semi-arid grain areas of the whole of northern China. The development of adequate and cheap transportation is, then, one of the basic prerequisites for the better organization of Chinese agriculture.

Besides the direct economic importance of transportation to Chinese agriculture, it should also be noted that ideas as well as goods travel along lines of transportation. This aspect of transportation, the educational aspect, is of only slightly less importance than the movement of goods. Any improvement of Chinese farm practice, such as will result in better yields, the introduction of new crops, and a general alertness to improve production, also seems to me to be dependent upon the development of an adequate transportation system. New ideas and new methods cannot be conveyed to the farmers until they are relatively easy of access; and at present the majority of them are anything but easy to reach. It is because I believe that even education depends to a very considerable degree upon good transportation that it has been placed first among the needed organizational factors. However, it is not with the need of education that we are concerned here; there is general agreement upon this point. What needs to be emphasized is that improved transportation will probably do more to hasten the spread of the knowledge the Chinese most need than any school system that can be developed within the next few decades.

Another greatly needed improvement in the organization of agriculture in China is a better system of both short- and long-term credits. For short-time credit, funds needed to tide one over from season to season, the rates of interest paid by the Chinese farmer are simply fantastic. Rates of three to four percent per month are usual; and when account is taken of

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\* Since this was written, it appears that the floods of central China may cause famine in this region also; but since this area has the best transportation facilities of any part of the country, there is more opportunity to relieve famine here than in most other areas.

the prices received by the farmer when he sells his produce to pay his debts in the fall, and of prices paid by him in the spring or early summer when he buys to tide himself over to the new harvest, there cannot be any doubt that he generally pays in excess of 50 percent per annum. The result is that many of the poorer peasants are kept in a state of peonage to a parasitic class of loan-sharks. The way out of this situation that naturally suggests itself to a Westerner is through the organization of co-operative credit societies such as have proved so useful in Europe.

At present there is no well-organized system for providing long-term credits for land purchase, nor does there appear to be any prospect that such a system can be developed until a stable and strong government is in position to advance money at relatively low rates of interest for this purpose through co-operative land banks. It does not seem probable, therefore, that the credit situation in Chinese agriculture is likely to improve in the near future, either as regards long- or short-term credits, since credit associations are very difficult to form among the Chinese. Such associations simply do not readily fit into the scheme of Chinese rural life; and while it would be unwarranted to say that they may not come to play an important role in the improvement of Chinese agricultural life, it is certainly true that there is no good reason to believe there will be a rapid growth of co-operative credit among Chinese farmers during the next few decades, nor that the government will be in position to finance land purchases by farmers on any considerable scale. Of course, a communist revolution might render long-term land credits unnecessary, but whether this is likely to happen is quite beyond prediction. At the moment, it appears that the lack of long-term credits for the purchase and improvement of land is likely to be a rather serious retarding factor in the improvement of Chinese agriculture for some time to come.

Closely connected with the provision of long-term credits for land purchase is the whole matter of improving the systems of land tenure in China. The proportion of Chinese farmers who own no land is very considerable. About 50 percent seems to be the most common estimate for this class, while another 25 percent may own only a part of the land they farm. The terms on which tenants hold their lands are highly varied and in many cases are extremely onerous — the landlord getting all above mere subsistence. There is need for standardizing the terms of land tenure and for making them reasonable and just to the tenant. At present, the tenant is largely at the mercy of the landlord or the landlords of his own village because he must work their land or starve. Unfortunately, the presence of the unused land referred to above (that is, land in Manchuria, Inner Mongolia, and the northwest) does not make it possible for the tenant to leave for the frontier if he feels his landlord oppressive. There is no free land for settlers in these new regions. The average settler in Manchuria or Inner Mongolia must perforce become a tenant on much the same terms as in China proper. The Chinese landlord everywhere holds the whip hand. It is always the tenant who seeks land rather than the land which seeks tenants. Between the landlord and the money-lender (often the same person) the typical Chinese tenant barely manages to keep body and soul together during his short lifetime. Considering his plight, it is little wonder that the areas in which the communists have stirred up the most trouble seem to be those in which tenants form an unusually large proportion of the population. When the mass of a people has nothing to lose, they are

ideal material for the revolutionary propagandist.

With this rather brief and cursory survey of the possibilities of increase in the efficiency of Chinese agriculture, of the possible extension of the arable area, and of some of the chief factors of a general nature affecting the progress and better organization of Chinese agriculture, we are ready to come back to our original question and consider whether such changes and improvements as may occur in agriculture during the next three or four generations are likely to result in an appreciably higher standard of living among the masses of China's population.

#### Agricultural Improvements and Their Probable Effect on the Welfare of the People

In the first place, we will look into the probability of improvement in the efficiency of Chinese farming and the effects this is likely to have upon the welfare of the people. Certain it is that most of the experts with whom I talked do not look for any rapid or early changes in the efficiency of farming in the areas with which they are familiar. They are fully aware that the "cake of custom" is very thick and tough among Chinese farmers and cannot be broken through in a short time. Even the most optimistic among them believe that the process of improving Chinese agriculture will be distressingly slow. Now since it seems to me that time is of the essence of the case in China, let us see what will be the probable course of this process in the Chinese village.

Let us suppose that A is an area in central China containing forty villages and about 6,000 people and that it has been selected by some organization or group of socially-minded workers as a place in which to conduct an experiment in general village improvement. Perhaps the first move will be to have three or four men (returned native sons if possible) interested in agriculture, education, and community organization, settle there to help the villagers to improve their conditions of life. In the course of a few months, if all goes well, these men will gain the confidence of the people and allay their natural suspicions that these newcomers are the agents of the government looking for new sources of income, or for soldiers or coolies to be impressed into the service of the army. Having gained the confidence of the community, these social workers can begin to tell the villagers how they will profit by a new road to the market town, how they can raise better crops by using better seed and by improved tillage, how they can avoid disease (typhoid, dysentery, cholera, small pox) by making new wells or protecting their present wells from pollution and by vaccination, how they can avoid malaria and can be cured of that and hookworm by proper treatment, how improvement of their housing will help to ward off tuberculosis, how they can better utilize their present farm land and their time, and how learning to read and to write will be of great advantage to them, both economically and politically. We will further suppose that they are very successful in all these efforts. The maximum results to be expected from five years' work would be about as follows.

There may be two or three miles of improved road (not paved) to the market town. It is also possible that a few new wells may have been dug or some old ones so improved that they are fairly safe from the standpoint of health. Besides a few screens may appear on the homes of the well-to-do and sleeping nets may be used by the more progressive-minded.

In addition to all this a few farmers may have been induced to try out some better varieties of rice or wheat or barley or cotton and possibly to plant a few potatoes or sweet potatoes, assuming that they have not been grown heretofore. Then, too, a modern school may have been established. Now all this is to the good, and one would certainly consider that most excellent progress was being made if things went this way. It would be so unusual, in fact, that it would be held up as a shining example of progress by all who were interested in the welfare of the villagers.

Far from belittling such an achievement, I should be delighted to know that thousands or tens of thousands of communities were moving forward in this way. There is, however, one consequence of any such improvement in village life which is frequently, if not generally, overlooked. It is that in those houses where screens and sleeping nets are used, good ventilation has been provided, and safe water is drunk, and on those farms where better seeds are planted and better crops raised, there will be fewer deaths than there would have been under the old conditions, and hence more people to feed. Because population will have increased in about the same measure, perhaps in even greater measure, than the actual productiveness of the community, the average Chinese village at the end of a period of five or ten years of such endeavor would find that it was pushed just about as hard as it had been before to provide its population with the necessities of life. I cannot conceive of any significant improvement in village life which will not be accompanied by a decline in the death rate, nor of one which will have any marked effect upon the birth rate in the near future. Therefore, I can but feel that a large part of any increase in productiveness which may be achieved during the next few decades by the villagers of China will be needed to support their increased numbers rather than be available for the improvement of standards of living. This is the tragic dilemma in which those who would improve village life in China will certainly find themselves.

Any general adoption of better farming practices and of more complete utilization of the land now in farms, as well as of that readily reclaimable, such as has already been achieved in Japan, cannot reasonably be hoped for in less than two or three generations. It seems quite probable, therefore, that when all this has been achieved, the situation in China will not be greatly improved as regards the standards of living of the mass of the people. Besides, further increase in production will become more and more difficult as diminishing returns set in and as new lands become scarcer.

#### Probability of Solving Population Pressure by Migration

In reaching this conclusion it is not forgotten that the new lands available for a surplus population, both in China proper and in the north, are very considerable, nor that certain localities may be able to export enough people for several generations to actually relieve the pressure on their lands for a while, but where there is a large amount of internal migration, as there is in China, and where the potential increase of population through the reduction of the death rate is so great, it does not seem probable that this new land can be brought into use fast enough to permit of any large or general improvement in the present standards of living either at home or in the new areas. What will actually happen to

any area from which emigrants go in large numbers will be that, as wages rise and rents become less onerous, people from the surrounding regions will hear about these relatively good conditions and will flock there in sufficient numbers to force incomes down to the common level of the region. This is actually happening now in the newer industrial centers. Thus there is no rational ground for belief that emigration will really make possible higher standards at home. As regards the emigrants when they come to settle the new lands, the situation is much the same; for as soon as it is realized that certain unused lands are suitable for settlement, they will at once be seized by "generals"\* or others in authority (if they are not already private property), just as has happened in Manchuria. The settlers will then be "rack-rented", as in Manchuria, with just enough difference between the new and old rents to attract starving farmers to the new lands. Among the migrants, the pressure being slightly less than at home, families will be somewhat larger (there is some evidence of this in Manchuria, although it is not conclusive), with the result that standards of living will be very little if any higher in the new regions and population will increase about as fast as subsistence. The crux of the whole matter is the speed with which these new lands can be settled. Manifestly, if within a generation the tilled area could be doubled, there is strong probability that in many respects the standard of living of the mass of the Chinese would be considerably improved. But I must insist that what looks like an abundance of new land does not, in China, hold out the promise of personal betterment as it would in the West. Only the chief reasons for this situation will be discussed here.

In the first place, the family tie is stronger in China than in the West. This makes emigration, as we know it, more difficult than in the West and gives it more the character of a seasonal movement of the unemployed in search of work. It should perhaps be explained in this connection that most internal migration in China does not involve moving the family to a new locality and consequently does not break up the greater family as it does with Western peoples. Thus a large measure of internal migration is quite compatible with the maintenance of the traditional family. Even most of the Chinese who go to foreign lands expect to return and do not take their wives and children with them. Thus migration, both internal and external, among the Chinese is to a large degree adjusted to the exigencies of maintaining the family intact. The chief point to notice is that the settlement of new lands, and even taking advantage of opportunities within the country, has to take place largely within the framework of traditional family life and there can be no doubt that this rather seriously interferes with the migration of the Chinese as compared with Western peoples and gives their migration a more temporary character.

The second matter in this connection is that in the areas where the Chinese have been legally free to settle and acquire title to land, there is not as much improvement over life at home as has generally been the case in the migration of Europeans to new settlements. Even in Manchuria, while it was an integral part of China, the ordinary immigrant

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\* The "generals" referred to here are the semi-brigand buccaneers who, in the absence of any paramount civil authority, rule given areas by force and keep for themselves and their families all the profitable economic goods and services within their sphere of control.

from Shantung or Hopei had very little chance of acquiring a farm of his own and establishing a new home where he could be assured of a good living and a future competence. As mentioned above, the land fell into the hands of "generals" who rack-rented the immigrants from the very beginning. The consequence is that even the experienced traveler will find it difficult to detect any appreciable difference in the manner of life of the Chinese in the better established settlements in Manchuria as compared with that of the people in the areas from which the immigrants have come. Indeed, it appears that the manner of life of the Chinese in Manchuria is in some respects on a lower level than much, if not most, of what one sees in central and southern China. It must be, however, that life in Manchuria offered some advantage to emigrants from Shantung and Hopei (Chihli) or they would not have left their homes to settle there. But Manchuria and Mongolia are no "land of promise" to the Chinese as was America in the past to millions of Europeans.

A third factor in the slow settlement of new areas is the insecurity of person and property in these regions. All over Manchuria banditry has been a recognized element of daily life. Anyone who had the appearance of moderate prosperity was in considerable danger of being compelled to share his prosperity with brigands. There was little incentive to improve one's manner of life when such improvement was likely to be made the basis for an attack upon one's property. Furthermore, the banditry prevalent in these new lands tended to discourage their rapid settlement and to choke the enterprise of those already there. It is too soon to say how the Japanese occupation of Manchuria and Inner Mongolia will affect the conditions of Chinese migration thither. It is reasonably certain that the "generals" will be ousted and banditry suppressed, but whether Chinese immigration will be encouraged cannot be foretold.

Thus pioneering in the new lands of China, although accompanied by much hardship, as it has been everywhere, and although entailing a not inconsiderable break with the past, has not encouraged new modes of living and new habits of mind to anything like the extent it has in the West. It has also lacked the economic attraction and opportunity that it had with us. In view of all these difficulties in the way of the rapid expansion of the Chinese into their new lands in the past, the movement into these areas is likely to be relatively slow in proportion to the need of the people for them unless the Japanese should quickly come into the position where they want to encourage a large Chinese migration into them. From all I can learn I am forced to conclude that emigration can be expected to do very little to relieve population pressure in China. The numbers concerned are too vast and the areas open to settlement are too meager and offer too many difficulties. This was the situation in the past and I see no very good reason to suppose that the conquest of parts of China by Japan will change the situation in the near future.

In so far as it was possible for me to ascertain, there is no reason to believe that emigration from Shantung and Hopei has made any appreciable difference in the manner of life of any considerable proportion of the population in these provinces. What seems to have happened is that there is now a little higher survival rate among the children in certain districts because of the temporary relief of pressure. Without question, certain families have profited both by the enlarged experience of returned emigrants and the funds they have brought with them; also it appears that

certain villages have felt the effects of relief of pressure and of increased incomes, but there is no clear evidence that the mass of the people in any considerable area are living better today than they did when this movement began, although in some years the net emigration from north China has exceeded 500,000. This also seems to be the case in south China, where emigration to the South Seas has been large. Again the leaven, both in experience and money, thus introduced in certain communities is having considerable effects; but here, as in the north, there seems to be no evidence that the emigration of the past has yet resulted in any appreciable improvement in the manner of life of the masses of the people remaining at home. Therefore, I see no good reason to believe that the sending out of twice or three times the number of people now going each year into these new areas will make possible any appreciable improvement in the standards of living in the districts they leave, except in a few relatively small areas. The very size of China's population and the strength of the social urge to raise children seem to preclude this.

In justification of this view it might be well to call attention briefly to the size of China's population and its potential increase. At present it is highly hazardous to accept any definite figure for China's population. I will merely say that it is probably not much less than 350,000,000 and may possibly be as great as 500,000,000. At a rate of increase of 1 per 1,000 per annum, which in the West would be considered no increase at all, the yearly growth would be somewhere between 350,000 and 500,000, about equivalent to the net emigration before 1930. It would require but a slight decline in the death rate in China to raise the rate of increase to 3 or 4 per 1,000 per annum. Such a decline would be the natural result if settlement on new lands, both in China proper and on the northern border, were to take place at the rate of 1,000,000 to 1,500,000 a year -- a number which is not likely to be attained. But even such a rate of increase is extremely small compared with the potential rate if we may judge by what has happened in Korea during the last twenty years. The Korean rate of increase is now 15 to 18 per 1,000 per annum. So far as is known it seems that there was little or no natural increase in Korea's population when Japan took over its administration. By making life and property relatively secure, by opening up new lands through irrigation and drainage, as well as by providing transportation to larger markets for surplus agricultural products, and by the introduction of a small measure of sanitation, Japan has made possible this rapid rate of increase among the Koreans. Due to an improved standard of living in Korea, the death rate has fallen markedly. As yet the birth rate has not been affected, hence there is a large margin for increase. A comparatively small improvement in the standard of living in Korea has issued in a high rate of increase.

There is a good reason to believe, therefore, that if peace were established, if adequate transportation were provided, and if improvements in village sanitation were effected as a consequence of improved living conditions, population growth in China would be stimulated in the same way as in Korea, and China might have to provide for a natural increase of from 6,000,000 to 10,000,000 annually.

Before summing up what I have to say regarding the role of agriculture in the improvement of standards of living in China, I wish to say a word regarding emigration of Chinese to foreign lands. As indicated above, there has been a considerable movement of Chinese from the southeast coastal region into the South Seas, which has afforded some relief in a few local-



ities. But this movement has not been large enough in amount to afford a general relief; and there are clear signs that even it is to be dammed. The Straits Settlements are shutting down on Chinese immigrants, as are also the Malay States, Java, and the Philippines. It appears likely that in a short time the foreign settlement of the Chinese will be practically stopped and it will certainly be a long time before China will be in position to take new lands by force, even if she should be disposed to do so. I think, therefore, it is not unreasonable to rule out foreign emigration as a source of relief for China's population pressure during the coming century.

### Conclusion

In order to make my position altogether unequivocal, I will express my conclusion regarding the possible improvement in standards of living to be expected in China from the betterment of its agriculture and the extension of the cultivated area during the next century (say four generations) in quantitative terms. If we assume that during this time the agricultural production of China arising from all sources can be increased by 100 percent, or even more, I would expect that from 80 to 85 percent of such increase will go to the support of more people, thus producing an increase of about that amount in the present population; while from 15 to 20 percent of the increase would go to the improvement of the standards of living, chiefly in the more favored economic classes. I do not mean to intimate that even such small improvement in standards of life as would reach the masses is not worthwhile. It is. Nor do I mean to imply that because a larger improvement is not probable, nothing should be done. Indeed, I should like to see everything possible done. I should like to see education extended because it is basic to all improvement; I should like to see agricultural extension work leading to better farming made general; I should like to see security of life and property attained; I should like to see adequate transportation provided; I should like to see the health of the people improved; and I should like to see the unemployed time of the Chinese peasant put to good use. But I do not believe that such of these improvements as will be achieved in the next century will result in the rapid betterment in the manner of life of China's masses which all of China's well-wishers would desire for her. As I see it, all the possible improvements in Chinese agriculture and the utilization of all her new lands will avail little as long as the social urge to procreation maintains its present force. The Chinese must choose between good standards of living with low death rates and all else that such standards imply, and unlimited procreation. These two cannot long subsist together in an area already rather densely settled.

But, it will be urged by many, that even though this may be true when China's agricultural development is forecast in the light of its probable population growth, it should be remembered that agriculture is not the only arrow in China's quiver. It is probable that, by and large, the young Chinese expect more from the industrialization of the country than from the better utilization of its agricultural resources. In the following paper, therefore, the probable effects of the industrialization of China upon the welfare of its people will be considered. Then we shall be in position to draw more definitive conclusions regarding the prospects for an increase in general welfare in China during the next three or four generations

## PART II. THE PROBABLE EFFECTS OF PROGRESS IN INDUSTRIALIZATION

We are concerned here with the probable effects of industrialization upon the standards of living in China during the next three or four generations rather than with the effects it may produce over a longer period. There can be no argument regarding the increase in the real income of the nation which will ensue upon the development of machine industry. Every modern factory, every improvement in transportation, every more efficient device for the utilization of natural resources will add to the wealth-producing power of the Chinese. But the real question is, whether the social and economic factors limiting industrialization will allow it to proceed fast enough to create a demand for labor that will increase faster than the probable supply.

### Factors Underlying Industrialization

In this paper I shall attempt to analyze the chief social and economic factors which appear likely to be decisive in determining the growth of machine industry in China during the next three or four generations. They will be discussed under five heads as follows:

1. Natural Resources.— Does China possess the resources to enable her to undertake an extensive program of industrial development, a program of such magnitude that her new industries can reasonably be expected to absorb a large and increasing number of people year by year? We are concerned here with mineral resources only, since the relation of agricultural resources to population growth has already been discussed.

2. Capital.— The industrial development of China, as of any other land, depends upon the capital available for the building of an efficient system of transportation and the erection and equipment of modern factories. Capital for the industrialization of China can come from two sources, either from within the nation itself or from loans secured abroad. The practical question here is whether China can secure adequate capital from these two sources to finance a rapid development of modern industry.

3. Personnel.— Modern industry requires a large personnel both of highly trained and experienced engineers, technicians, and organizers, and of workers skilled in the care and operation of machinery. Can China supply this personnel fast enough to meet the demands of a rapidly expanding machine industry?

4. Markets.— Closely related to the supply of capital is the matter of markets. For the supply of capital available to China will turn upon the probability of the industries, which might be established, finding markets where they can dispose of their products. Markets are, of course, of two general kinds, domestic and foreign. The probability of the expansion of markets for Chinese goods must, then, be canvassed with considerable care.

5. Type of Economic Organization.— Finally, will the haphazard, unplanned growth of industry characteristic of Western capitalism be allowed to determine the course of Chinese industrial development during the next century, and, if so, what will this mean in terms of the welfare of the masses?

After discussing these five factors we will be in a position to attempt an answer to the general question which gives title to this paper,

namely, whether the industrialization of China offers any real hope of relief from the pressure of population. In this connection I shall also take the opportunity to discuss some of the other aspects of relief of population pressure in China.

Obviously these five factors, although treated as the most important in answering the questions proposed above, are by no means the only factors to be considered; nor should each of them be considered in vacuo. Indeed, each of them is just one aspect of an integrated social situation. They will be discussed separately only in so far as it appears that clearness will be attained in so doing. For it should be remembered that no actual social situation can ever be chopped up into segments each of which is treated separately without resulting in the loss of much of the reality of the whole.

### Natural Resources

It needs no argument to convince anyone that the industrial development of any given area depends to a considerable extent, in spite of foreign trade, upon the natural resources, and particularly the mineral resources which that area contains. When one mentions the mineral resources of a country, the first question which arises in the mind is: What are the fuel and iron resources? Iron, to make machines, and fuel, to furnish them power, are the basic needs of modern industry. Of fuel, China possesses a relative abundance in the form of coal; although the director of the geological survey has recently said that they have been compelled to cut the estimates of twenty-five years ago by two-thirds. As regards petroleum, it appears that China is practically destitute, if the information now available can be relied upon. There are no producing oil wells in the country today, although considerable money has been spent in prospecting and boring. That this deficiency will increase the costs of transportation and communication can scarcely be doubted. These costs in turn will affect all other costs of production. Even so, fuel will not be a severely limiting factor in Chinese industry for several centuries, no matter how rapid the development may be. How great China's hydro-electric power resources are is not known. But whatever power may ultimately be developed from water it will not greatly affect the line of argument pursued here, since, as just noted, the lack of fuel will not be a decisive factor in the situation in the near future.

With iron, however, the case is quite different. At present, it appears that the reserves of iron ore are quite inadequate to allow China to enter into heavy industry on a competitive basis with the United States, the industrial countries of western Europe, or Russia. This shortage of iron is bound to have a marked effect upon the direction, the extent, and the rapidity of the development of Chinese industry. This point need not be greatly expanded, but it seems clear that a deficiency of iron means that the cost of industrialization will be greater than would otherwise be the case, that its growth will be slower and that it will be given a direction somewhat different from that it would take if iron were abundant.

Since it also seems that China is not well supplied with copper and certain other minerals, which are of considerable importance in modern industry, the above conclusion is strengthened. In other words, China's industry may take on the character of industry in France or in Italy rather than that of industry in the United States or Great Britain. If this

should be the case, it inevitably means a slower growth of industry in China than would be the case if iron, copper, lead, zinc, nickel, and other resources were abundant and cheap in terms of the human labor required to prepare them for use and incorporate them in the articles needed to assure a good standard of living.

From our point of view, the significance of all this is that the development of modern industry in China is not favored by such large natural resources as in several other parts of the world and consequently will necessarily be slower and more costly than it would be if these resources were abundant. A slowly developing industrial structure necessarily means a slowly increasing body of workers to man this industry. Thus it appears that even nature has not been over-generous in fixing the natural conditions determining the development of Chinese industry. But, given any body of natural resources, the rapidity with which they can be used depends upon social and economic conditions. It is to these aspects of the industrial development of China that we will next turn our attention.

### Ability to Raise Capital

The amount of capital in China which can be made available for the development of transportation and for industrialization is, of course, unknown. There are, however, a good many men, both Chinese and foreigners, who believe that the amount of domestic capital is much larger than is generally supposed. These people hold that if once political conditions became settled and men were certain of not being robbed by bandits, communists, or the government of the moment, considerable amounts of money would make their appearance all over China and many new enterprises would spring up as if by magic.

One cannot fail to be impressed by the rather large stocks of goods carried by many of the small shops, both in the cities and in the market towns. Certainly the working capital of many of these shops must be considerably larger than that of shops with comparable turnover among us. This seems to indicate that capital could and would be used more productively if there were reasonable assurance of security in new enterprises; instead, it is often invested in goods and held frozen for relatively long periods. New but small enterprises are, in fact, springing up rather rapidly in many localities. On a visit to an exhibition showing the manufactured products of the district around Canton, I was much impressed with the spirit of enterprise displayed. The Chinese might well be proud of it. And it is a safe assumption that practically all of the enterprises represented there were small businesses using only Chinese capital.

Where the government (generally provincial or some smaller unit) is able to assure freedom from unreasonable exactions as well as security for property, auto transportation is being extended rapidly. In the early days, nearly all the bus lines were privately owned and operated and the roads over which they ran were also built and maintained by the company or syndicate which ran the busses. More recently the government has spent relatively large amounts on roads. All this seems to support the contention of those who hold that capital would be forthcoming for many new enterprises if there were a fair degree of certainty that it would not be confiscated either by the government or the bandits. Then, too, the rapidity with which Chinese ownership of cotton mills has increased indicates that fairly large amounts of capital can be raised within the country where the prospects for

profits with safety are reasonably good.

In trying to foresee the part Chinese capital can be expected to play in the development of a modern system of transportation and industry in China I am disposed to believe that at present sufficient capital is available for most small local enterprises based largely on the use of labor and requiring the rather close personal supervision of the investor. Considerable ready capital might also be found for larger enterprises where energetic managers are able to inspire confidence among the wealthier men of the country so they will entrust the management of some of their funds to these enterprises. But it is highly doubtful whether most of the larger enterprises basic to modern industry can be financed by Chinese funds.

The construction and equipment of the trunk line railways, the opening up of mines, the building of iron and steel plants and perhaps the development of the main arterial highways of the nation, will proceed very slowly if they wait upon the accumulation and investment of Chinese capital only. The governmental authorities recognize that this is the case and are quite anxious to secure foreign capital for these purposes if they can do so on terms which they consider "compatible with national honor" and reasonable from a business standpoint.

There is not much doubt that the supply of capital seeking investment in the world is adequate to meet China's needs in addition to the other legitimate business demands for it. But whether foreign investors, except the Japanese, will be interested in China in the near future depends upon the degree of assurance they are offered that interest and principal will be forthcoming as stipulated in the contract. To say that recent experience in this matter has "undermined the confidence" of the investing public in Chinese loans is to put it mildly. It is, therefore, not likely that foreign capital will hasten to seek investment there until the political situation becomes more settled, and sufficient time has elapsed to restore confidence in the security of Chinese investments. The attack of Japan on China will, of course, prolong still more the period of uncertainty. It is possible, however, that Japan herself will undertake to supply the capital for the industrial development of China. This might hasten the process, but again it may not, for no one knows how much capital Japan will be able to supply if she is successful in conquering China.

Since the rapid development of the basic industries in China is largely dependent upon the investment of foreign capital, and since the supply of such capital is likely to be rather small for some years, it appears highly probable that the rate of industrial development in China during the next two or three decades is likely to be rather slow. It is hard for the younger Chinese, who have an ardent faith in the future of China, to realize how very timid foreign capital is likely to be when it comes to the buying of Chinese bonds for the establishment of new enterprises. It will probably be some time before even the cleverest of investment bankers can "sell" the American public on Chinese securities and still longer before European investors can be interested, while Japanese capital is being rapidly dissipated in war.

It is difficult to say just what effect the recent changes in Chinese tariff rates will have upon foreign investments in China. It is not improbable, if reasonable encouragement is offered, that many foreign concerns will erect branch factories or even autonomous factories in China, as is happening in other lands where tariff walls make foreign trade

impracticable. It is more likely, however, that tariff changes will so favor Japan as to make investments in China less desirable for the rest of the world. But such investment is not likely to be very rapid in any event until the government of China can guarantee safety of person and property in practically all parts of the country and until it is believed that the market justifies such investments. An overwhelming victory by Japan would probably hasten the establishment of internal order, but whether it would increase the readiness of American, British, and French capitalists to invest in Chinese enterprise is another matter.

Looked at as a whole, therefore, it seems quite probable that scarcity of capital will be one of the important factors retarding China's industrial development during the next generation or two. Since our interest here is in industry as a supporter of population and as a basis of improved standards of living, it follows that if industrial development is hindered by the lack of capital, the probability that it can relieve population pressure by giving employment to vast numbers of additional laborers is thereby lessened.

### Problem of Training Personnel

There is much reason to think that for a considerable time to come China will be greatly handicapped in the development of modern industry by the lack of trained and experienced men, particularly of engineers and business organizers who must carry the real work of management, and also by the lack of skilled machine operators. It is not a question of the ability of the Chinese to do these things, but rather a question of whether, within the next few decades, a sufficient number of men can be given the training and the practical experience which they need to operate modern industry efficiently. Many of the leaders of modern China have realized this difficulty and have done and are doing their best to meet it; for example, technical schools have been established by the Ministry of Railways; and the silk and the cotton industries, with government encouragement and aid, have undertaken the training of technicians. But as yet the total amount of technical training available is very small in proportion to the need. Here again the early subjugation of China by Japan might change the situation considerably, for Japan has a rather large body of well trained engineers and business managers, and good facilities for increasing the supply. But whether Japan will have the opportunity to place her men in charge of Chinese industry remains uncertain.

Assuming that China is left to develop in her own way, there are other serious difficulties to be encountered in providing an adequate supply of engineers and business managers for Chinese industry. The difficulties of giving college-trained men in China the practical experience they need to make them efficient engineers and managers are very great at the present time. Not only are the facilities for giving them training in the actual problems of industry meager, but also the attitude of the educated Chinese towards learning the processes of industry from the ground up by participating in them is a great drawback. Handwork for one who is not forced to it is considered rather degrading. A college graduate in overalls in the power plant of a mill learning its operation by working with machinery is certainly much less common in China than among Western peoples. And until the Chinese engineers are willing to get practical machine experience in the only way it can be adequately got -- namely, by personal

operation of the machines, their contribution to the building up of Chinese industry will be less than it should be. Chinese engineers have yet to learn that much of the efficiency of their American and European confreres is due to the fact that they were willing to go into the shop and learn from actual work, even after obtaining as good a training as college and university could give them.

Much the same situation exists as regards the office side of business. The family tie is so strong in China that the son, even though poorly equipped, is more apt to be placed in a responsible position than is the case in the United States. In many instances he no doubt makes up for deficient preparation by diligent application and native ability, but in many other cases he must be a great incubus to the efficient functioning of the business. Nepotism, of course, is by no means a problem peculiar to China. It is a serious problem everywhere; but from all I can learn it seems to me that it is a much more difficult issue to deal with there than in the United States, or even in Europe. And it does not appear that there is any easy or quick resolution of this difficulty to be achieved in China. The whole family system of the country will have to undergo considerable modification before the leaders in any field of activity will be even moderately free to pass the control of enterprises to the most competent hands.

In addition to the difficulties which Chinese industry faces in securing good management, it is also up against the problem of lack of skilled laborers, both foremen and operatives. It is, of course, true that with the increasing mechanization of industry many types of skill are less essential than formerly. But if less skill is needed, more men with what we may call a "machine sense" are required. Such men are almost entirely lacking in China and they are absolutely indispensable in the modern factory. It is only because an adequate supply of good foremen, recruited largely from the ranks of the skilled laborers, was available that machine industry has been able to absorb such vast quantities of unskilled laborers without impairing its efficiency. This foreman class, with its technical skill and its knowledge of handling men, does not exist in China, and its creation will prove a slow and costly process. Indeed, the lack of this class of workers is more serious than many people are inclined to think, because in the early days of a country's industrial development it is from this class that many of the best technicians and managers should and do come. It would be hard to overestimate the importance of the skilled machine laborer in the development of modern industry. His entire absence in China is, therefore, a drawback of the first magnitude and is certain to retard greatly her industrial development.

Again it appears that at present almost nothing is being done to train such workers. The schemes of education being planned do not provide much for them, and apparently particular plants and industries are interested only in their own needs, as would be expected. It probably would not be very difficult to retrain many of the skilled hand-workers in China so that they could become foremen and skilled laborers in the new industrial order, but it is not being done and does not seem likely to be done in the near future. Indeed, it appears that the manufacturers have consistently opposed all efforts to start worker-education in the new industrial areas. They fear that even a small amount of education will render their employees less tractable and docile than they now are. They do not want their workers any more intelligent than is absolutely necessary.

It seems quite probable, then, that for some time, two or three

generations at the least, Chinese industry will be severely handicapped by a lack of trained personnel, both in management and in the actual operation of the machinery. The most elementary principles of machine care and operation are yet to be learned by Chinese workmen and that they will be learned in a very expensive way, both as regards efficiency and the wearing out of machinery, cannot admit of any doubt. This will inevitably result in a considerable retardation of China's industrial development.

#### Markets for the Products of Chinese Industry

As was intimated above, the supply of capital available for the development of Chinese industry depends to a large extent upon the markets which are found to consume its increased products. No doubt many people will think that with a population of 350,000,000 to 500,000,000 there should be no trouble about markets for a long time to come, particularly when it is remembered that at present perhaps 80 to 90 percent of these people are living very near the subsistence level. It seems that there should be no lack of demand for all kinds of goods which could contribute to better standards of living. Certainly the need is there, but it is hard to see how this need is to be converted into an effective economic demand at a speed at all commensurate with the possibility of increasing the supply of manufactured goods, housing, or transportation. So far as one can judge from observation and study, the Chinese domestic market will expand but slowly during the next few decades; hence the industry needed to supply this market must also expand rather slowly.

In the first place, about 70 percent of China's population makes its living directly by tilling the soil.\* But because of the lack of land to increase the size of their farms, and because of the mental inertia, which is much greater in China than in the West, the productiveness of the mass of Chinese farmers cannot possibly improve very rapidly (the reasons for this view have been discussed in Appendix I, Part I). Furthermore, because there does not appear to be much likelihood of increase in agricultural return to farmers in the near future I do not see any large opportunity for the expansion of the market for the products of modern industry among China's agricultural population.

Against this view, it is urged that the expansion of the Chinese into Manchuria, Inner Mongolia, and some of the northwest provinces will alone be sufficient to provide a considerable increase in the market for Chinese industry. This will help some, no doubt, for if the supposed 30,000,000 in Manchuria double within the next thirty years and if another 30,000,000 move into other unoccupied areas, the demand for manufactured goods of various kinds ought to expand to this extent. But it should not be supposed that the purchasing power of these emigrants will be much different from that of the rest of the Chinese. No one can see the way the

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\* This is a smaller proportion than is generally given. But after talking with men who have studied these matters and after observing fairly widely, the author is convinced that there has been considerable confusion in thought between agricultural population and rural population and that while the latter may be 80 to 85 percent of the whole, the former is appreciably less and probably is much the same as in India where it is only slightly in excess of 70 percent.



Chinese actually live in Manchuria and feel that the settlement of new lands in China really holds out any promise of appreciably improved standards of living to the settlers (see Appendix I, Part I). We must not, therefore, think of the increased purchasing power of 60,000,000 to 100,000,000 Chinese settlers on new lands in the same terms as we would of similar numbers of settlers in Canada or Australia. Most of these new Chinese communities, like pioneer communities in the United States a century or more ago, are at first practically self-sufficing and therefore offer but a small market for manufactures, but unlike the new world communities they rapidly become so densely settled that they have little margin above subsistence for purchases from the outside. Consequently, migration to new lands in China does not carry with it the promise of a new economic freedom; it means merely more people living in much the same way as the people whom they have left at home. Since the present consumption of manufactured goods by the Chinese farmer is largely confined to cotton goods for clothing, it can scarcely be seriously argued that the expansion of the Chinese into new lands will immediately open up any new markets of great importance to Chinese industry.

In the second place, that part of China's rural population which is not engaged in agriculture, perhaps constituting from 10 to 15 percent of the entire population, can only expect to increase its income as the purchasing power of the agricultural community increases; for either as laborers or business men they must draw their incomes from the farmers and so cannot expect an increase in real incomes until agriculture becomes more productive. Besides, the scale of business operations is very small in most cases, as an example will show. A study made by Yenching University (Peiping) showed that less than 10 percent of the shops in a fairly prosperous market town had more than \$1,000 (Mex)\* capital, while the majority had less than \$300 (Mex). The percentages would undoubtedly vary in different areas in China. But anyone who has visited a number of market towns cannot doubt that most of the tradesmen in them make a very precarious living. As in the case of the farmers, it does not seem probable that this group will be able to increase its purchasing power to any considerable extent in the near future.

It is then among the 15 to 20 percent of the population in the cities that we must look for the chief increase in the use of the products of Chinese industry during the next few decades. For our purposes this population is made up largely of two classes: (a) the owners and managers of commercial and manufacturing business, higher public officials, modern professional men, and others with reasonably good incomes; (b) the workers in industry and commerce, and the servant class among whom I would include the coolies engaged in transportation by ricksha and wheelbarrow.

As regards the first class there is little doubt that it is growing in numbers and that it is demanding more and more of the products of modern industry as its purchasing power increases. The figures for China's foreign trade prove beyond question that goods of modern manufacture are being increasingly used in China and observation within the country shows that they are coming into use wherever the people have the means to purchase them. There can be little doubt, however, that they are consumed

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\* Mex is short for the Mexican dollar, which is worth about \$0.50 (United States) at normal rate of exchange.

by a relatively small class consisting of persons whose incomes are several times as great as those of the average farmer and day laborer. This group is only a small part of the city population, to say nothing of the total population. It cannot support a very large increase in Chinese industry, even though the tariff may eventually shut out much of the goods now being imported.

The second class of the city population includes by far the larger part, and it lives very miserably, more miserably than a Westerner can well imagine. So wretchedly does it live that if the term subsistence standard is used to include the goods and living conditions essential for reproduction, as well as for the temporary maintenance of the worker, it must be said that many of the members of this class live below a subsistence standard. Certainly I have never seen such abject poverty as in the areas of the cities where the workers in modern factories live and in the quarters of the transportation coolies. Unfortunately, there are no adequate data showing births and deaths in these areas, but I am quite willing to risk a heavy wager that any proper standardization of rates would show an appreciable excess of deaths over births in many of the poorer quarters of Chinese cities. And this would not be because of the low birth rate, as would be the case in some of the cities in Europe and America, but because of the terrifically high death rate consequent upon bad housing, inadequate clothing, insufficient food, and an almost total lack of sanitation and disease control. Chinese capitalists and foreign capitalists in China employing Chinese labor are today just as little concerned over the welfare of their employees (perhaps even less) as the capitalists of other countries were in the early days of their modern industrial development. They treat labor as a commodity to be purchased at the lowest possible price and in China this is often below subsistence level.

Industrial workers and other laborers in most Chinese cities, and this includes the larger part of the city population, must be in about the same condition today as regards their manner of life as were the majority of people in the London, let us say, of 1700 when deaths were probably one-fifth more numerous than births, in spite of an age composition favorable to a low death rate and a fairly high birth rate. Furthermore, there is no good reason to hope that the real income of these city workers will substantially increase in the near future. It is true that there are great changes going on in China and it would be a mistake to minimize their effects. But after listening to Chinese and to foreigners of long residence detail the changes going on, I have frequently put the question whether within their memory there has been any appreciable change in the manner of life of the masses of the people. I have yet to find the person who, unhesitatingly, said that there was! In addition, they have not infrequently said that the coolie population of the growing cities seems to them worse off than the poor farmers in the villages from which they come, in spite of the fact that the money wages of the city workers are larger than the money wages of farm laborers. There is no denying the fact that these city wages are barely subsistence or even less than subsistence wages.

In the light of these facts, it is extremely difficult to believe that modern industry in China will find any considerable market among the coolie (laboring) class in the cities.

If the foregoing analysis of the probable increase of markets in China is correct, it appears that only among those whom we may designate

"the well-to-do" will the market grow fairly rapidly. Among all other classes, purchasing power will increase very slowly and perhaps not at all; and the upshot of the whole matter is that the increase in the domestic demand for the products of modern industry will not justify a very rapid expansion of the plant for their fabrication. In this connection we should note what appears to be happening in India where fairly good transportation has been provided and machine industry is somewhat more developed than in China. There is some reason to believe that the purchasing power of the mass of the people is actually declining as industry develops. This comes about from the fact that there is no equally remunerative job open to the handworker who is displaced by the machine. Indeed, there is some reason to believe that these displaced handworkers are thrown back into the class of already underemployed farm laborers, thus further increasing underemployment and reducing real wages. We in the West are so accustomed to assume that machine industry will result in higher real wages that we are not likely to make proper allowance for the effects of displacement of handworkers in old and thickly settled countries like India and China. It is by no means certain that the domestic market of China will, in the aggregate, expand during the first few decades of her industrial development.

But even if we grant that the domestic market will expand slowly, there are yet those who feel that the foreign market may expand rapidly enough to justify a rather vigorous expansion of Chinese industry. Since we do not wish to overlook any real possibility, let us turn our attention briefly to the prospects in this direction.

All over the world today there is a decided swing towards the policy of reserving the home market for home industry (mercantilism). Even Great Britain is embarking on this policy and though not committed to a high tariff as is the United States, yet she is constantly adding to the list of goods which are "safeguarded" from outside competition. There appears to be no limit to which the protectionists will not go if we are to judge from the recent tariff enactments all over the world. The manufacturers in China and those who hope to be manufacturers, or in some way to profit by the development of Chinese industry, are just like people similarly situated in other countries in desiring to reserve the home market to themselves while trying to share in the exploitation of what they hope will be an ever-growing foreign market. Just how these two ideas can be reconciled remains as much of a mystery as ever; but all over the world the protectionists seem to feel no inconsistency in urging increased duties in one breath while they use the next to expatiate upon the need for expanding foreign commerce in order to keep their plants and employees busy.

Here it is not a matter of the relative merits of free trade and protectionism, but it is necessary to point out that the protectionist policy is in the ascendancy at present and that its strength is growing rather than diminishing. If one chooses to think of these policies in terms of a pendulum movement, it would seem that the pendulum is at present on the upstroke. If this is the case it may be some time yet before it completes its stroke in the direction of higher protection and begins to move towards lower tariffs and a freer movement of goods in international trade. But it is not at all certain that this is a movement of the pendulum type. It may issue in new customs unions being formed which will become practically self-sufficing behind more or less permanent tariff barriers. This would seem to be a not improbable outcome. The same result

might also be achieved by a system of preferential tariffs within the British Empire, by an economic United States of Europe, and by great nations like Russia and China which have large and varied natural resources. But again this possible development of the protectionist movement is mentioned not because we are here interested in this result in itself but because such a movement would have a marked effect upon the industrial development of China as well as of other and at present more industrially developed lands.

In the light of what is actually happening in the world today, it is sheer folly to look to the expansion of world markets for the industrial development or the industrial prosperity of any country. The actual movements in the economic life of the world today seem to indicate that for some decades, foreign commerce will probably be relatively less important as compared with domestic commerce than it has been during the last fifty or seventy-five years. Even the capitalist is beginning to recognize that the tariffs which he, as an American or Japanese or German manufacturer, demands, will, when tariffs become universal -- as they threaten to do -- make it impossible for him to ship his goods across national boundaries. He is, therefore, beginning to send his capital abroad to build factories where he believes that he can compete with domestic products; for example, almost immediately following the promulgation of a new Chinese tariff in 1931 came the announcement from some of the Japanese cotton mills in Shanghai that they were going to spend considerable sums in improving their plant and equipment so as to be in a position to supply from their Chinese mills the goods which had formerly come from Japan. In view of the present tendencies throughout the world in the matter of protection, it surely is not unreasonable to conclude that Chinese industry cannot expect to find much of an outlet abroad for its products.

But in addition to the difficulties which tariffs place in the way of increasing foreign trade, we must not forget that it takes time to build up foreign trade. This has never been more true than today in spite of improved transportation and communication; for rivalry to gain or keep markets has never been as intense as it now is. Every year it appears that this rivalry becomes more keen. More industries in more countries are steadily passing the point where their products can be absorbed by the purchasing power of the home populations. All over the West the productive power of man using machines has outstripped his ability to use his own goods as determined by his antiquated system of distribution. Hence the desire of the industrialist to preserve home markets for himself and at the same time to extend his activities abroad is made keener. Surely Chinese industrialists can scarcely expect to succeed at a game in which all the Western industrialists are failing.

It appears, then, that the probable growth of the foreign market for Chinese goods is likely to be as slow or even slower than the growth of the domestic market. It does not appear, therefore, that the greatest possible expansion of the market, both domestic and foreign, for the products of Chinese industry will result in a rapid absorption of people into factories.

#### Planning the Industrial Development of China

There are several, perhaps it would be more accurate to say many, plans for the industrial development and reconstruction of China. The most important of them are probably those emanating from the Ministry of Commerce,

and the Reconstruction Commission. In general, these plans are admirable. They stress the development of basic industries, the extension of transportation facilities, the building up of a system of universal education along Western lines, the modernizing of Chinese cities both from the standpoint of commerce and of health, the amelioration of the conditions of the laborers, and the improvement of agricultural practice as well as the extension of the agricultural area. Certainly all that is proposed in these plans will seem desirable in the eyes of those who wish China well. When, however, one begins to inquire into the way in which these plans are regarded by the Chinese themselves and their practicability, it appears doubtful whether they are of much consequence. I do not know to what to attribute the difference, but, as compared with Russian planning, the projects of the Kuomintang\* lack reality. Among the educated, the plans of the higher-ups are frequently, if not generally, regarded with a large measure of cynicism. They appear to have little confidence in the integrity of the men in high places: Consequently they cannot throw themselves wholeheartedly into the execution of these schemes and furnish the inspiring leadership that is necessary to effect a great social revolution.

This attitude of cynicism among the intelligensia, regarding the purposes of the men in control of the party, is serious enough in all conscience but it is probably of less importance than the very general suspicion of the party entertained by the mass of the villagers. In all of my efforts to ascertain the feelings of the villagers toward the present Nanking Government (this was prior to the attack by Japan) it was not my lot to find anyone who spoke favorably of it, even when contrasting it with old Manchu days. It is perhaps the general tendency of man everywhere to speak and think ill of his government. One can well imagine a Chinese motoring across the United States and inquiring about local, state, and national government in every village and city through which he passed, as well as from the farmers in their fields, and being told practically universally that it was inefficient and often that it was dishonest and had no interest in the welfare of the common man. One can also discount the judgments of older men regarding the "good old days" of peace, security, and low taxes. But even when this is done, I can but feel that any government with such a dense cloud of suspicion hanging over it as the Nationalist Government has had must probably deserve some of it, and that any plans it makes have almost no chance to command the enthusiastic support of any body of men capable of undertaking their actual execution.

When one compares the Chinese plans with the Russian plans from the standpoint of the support they command in the population at large, there is not the least doubt but the plans of the Communist party in Russia, while by no means universally approved and supported, do command the enthusiastic and devoted support of millions of young people, while the Kuomintang projects command very little support in any quarter. The young people in Russia at least feel that the plans have been put forth in good faith with the intention of improving the lot of the masses. They believe this with much the same intensity as religious zealots believe that salvation depends upon the spread of their particular beliefs and practices. In China, on the other hand, all this fervor born of conviction that a new day is dawning is lacking. Indeed, the enemies of the Kuomintang say

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\* The people's party which controls the Nationalist Government.

that its programs no longer reflect the spirit of Dr. Sun but are conceived in the spirit of conservatism and are in the interest of the wealthy. This, of course, is denied by the party leaders, who maintain that the principles set forth by the late Dr. Sun, particularly in his book "San Min Chu I," govern the economic program of the party as well as its political program. But to the outside observer, such a contention certainly seems to be open to dispute, and it is not surprising that many and violent factional quarrels have disrupted the Kuomintang since Dr. Sun's death. The basis of these quarrels, making due allowance for the vast amount of intrigue and personal ambition that has entered and does yet enter into them, is whether the reconstruction of China should proceed along capitalistic or socialistic lines.\*

In the very nature of the case, many of the men, who had supported the revolutionary party as long as it was engaged in destroying Manchu rule and the abuses that had grown up around it, were frightened when they saw the shadow of socialism and communism looming up. Indeed, much of the money for the support of revolutionary activity had come directly from capitalists who wanted to see China modernized, but modernized along the lines of the Western capitalistic nations. It is not surprising, therefore, that as the revolutionary forces from the South gained success after success in their northward movement and it began to appear that there might soon be an opportunity to begin a reconstruction of Chinese society, serious differences should break out between those who preferred the socialist model and those who preferred the capitalist model. Nor is it surprising that each group claims the authority of Dr. Sun, the "Father of the Revolution," for its adherence to its particular plan, and that there is the most bitter animosity between those groups.

At the present time, the capitalistic group seems to be in control of the party in central and north China. The Nanking government represents this point of view. Any reconstruction it carries out will probably be essentially favorable to the continuance and the strengthening of the capitalist order. It is to be expected, of course, that those who believe in the superior value of capitalism will be bitterly opposed to any thorough-going plan for building a new social order; for the following of any plan necessarily means that the economic enterprise of individuals is limited in various ways. Since the cardinal tenet of capitalism, whether in China or elsewhere, is the belief that the quest for profit by the enterpriser will issue in the greatest good to all, and that nothing so damps his enterprise as any kind of governmental interference, it is impossible to see how any practicable plan can be made for the development of transportation

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\* To the writer it appears that Dr. Sun himself in "San Min Chu I" believed that reconstruction should be socialistic in general form as opposed to the capitalistic form of society prevailing in the West, that he was convinced that the reconstruction of China for the welfare of the masses demanded a leadership by the state -- which the capitalists of the West will not allow, and that as a consequence he looked to the revolutionary party in China to take the lead in building a new social order in which the state would become the guardian of the welfare of the people in much the same manner as in Russia.

in the nation, or for the exploitation of its mineral resources, or for any large industrial expansion without in many ways limiting the traditional modes of conduct of enterprisers. Personally, I do not believe China will get very far ahead in improving the welfare of her people without some such program. Consequently it seems to me that the economic policy of the present government is not sufficiently aggressive to encourage any such rapid forward movement in industry as will issue in the increased welfare of the masses of the population within the next few decades.

The existence and execution of a comprehensive plan for the national economy may not be impossible in a society in which capitalism is predominant, but the fact is that capitalism has always bitterly opposed any state control which gave promise of being effective; and it is hard to see how any general scheme of national economic development can be carried out until capitalism is well chastened. Therefore, since I do not believe that the complicated industrial order of today can be made to contribute to the welfare of the Chinese people at anything like its maximum capacity without the direction of a semi-socialistic plan, I am not very hopeful of better living for the mass of the Chinese people until, or unless, a social revolution accompanies the political revolution. For this reason I regard as a real weakness of the Nationalist Government of China, from the standpoint of the welfare of the masses, the fact that it does not so far modify its capitalistic bent as to adopt a plan of national economic development that will command the loyalty of the masses of the people. That the general tendency in industrialized nations is towards a large measure of state control of economic activity which will make possible comprehensive planning does not seem to be clearly understood by the Kuomintang; hence it is doing much less to direct the general course of China's economic development than would seem necessary to increase the general welfare by the expansion of industry.

The lack of any practicable and comprehensive plan of economic development for China and the lack of any will or power to carry out such a plan, if it did exist, certainly will make the economic development of China slow and haphazard. Consequently this development is likely to be accompanied by much waste and confusion. China can ill afford this waste. It is my conviction that this planless development will seriously retard the growth of the capacity of her industry to absorb new workers at higher levels of living. If a tithe of the thought being directed to politics in China were transferred to the study of the economics of the country, and if the government would undertake the direction of industrial development with an eye single to the welfare of the masses, the outlook for the improvement of life in China through the utilization of her natural resources in industry would be far brighter than it now is.

It is needless to say that the above argument assumes that China will be left as free as in the past to develop in her own way. If Japan, under a military dictatorship, should conquer China and undertake to exploit her, the situation would be entirely different, as has already been indicated. The development of industry might possibly proceed much more rapidly, but since it would be entirely in the interests of the ruling class there is no assurance that it would raise the standards of living of the Chinese to any great extent. The intrusion of the Japanese into the picture is an aspect of the situation which cannot be discussed very

profitably at this time, for it is quite likely that so many new and unpredictable elements would enter into the life of China under Japanese control that its whole future industrial development would be much deflected from the course it would otherwise follow. In the very nature of the case the development of a nation under a dictatorship will be highly arbitrary, and therefore, unpredictable.

#### Industrialization and Factors Inhibiting Improvement in Living Conditions

Those who have followed the argument thus far will have no difficulty in forecasting the conclusion reached regarding the probability of any considerable improvement in living conditions among the masses in China during the next three or four generations as a result of her industrial development. There may be some slight improvement among workers in certain industries and no doubt there will be a considerable increase in the absolute number of people who live under conditions where fairly good health is possible; but for the mass of the farmers and perhaps for the mass of the industrial workers, there appears to be little hope of improvement unless several very radical changes in Chinese life take place, which changes appear rather improbable within the time included in our consideration.

The most important, and probably the most radical, change in Chinese life needed to usher in an era of rising standards of living is the reduction of the birth rate. As matters stand now, it does not seem at all probable that industrial development can possibly proceed fast enough to absorb more than a very, very small part of the surplus laborers which the farms can send to the city, once slight improvements in village sanitation are accomplished. I would go still further and say there is no likelihood of industry being able to care for the surplus arising from slight improvement in sanitation, even if the net immigration of 500,000 per year to the new lands could be doubled in the next fifty years. At the very low rate of increase of one per 1,000 per year, China would have an annual increase of from 350,000 to 500,000, as has already been shown. We must not forget that it is the high death rate which keeps down China's rate of increase today and we must recall what is happening in Japan and Korea if we would foresee what would happen in China if improved living conditions became fairly general before control over the birth rate has been established.

The more I have seen of China and the Chinese and the more I have learned of them, both from themselves and from foreigners long-resident among them, the more pessimistic I have become regarding the possibilities of improved standards of living for the masses of the people during the next three or four generations. As previously stated, though emigration to new lands may provide homes for some millions, yet it cannot proceed fast enough to drain off more than a small part of the potential increase; and industrial development can absorb but another small part of the increase resulting from even a slight improvement in sanitation.

The only possibility for lessening the pressure on the land and insuring a better standard of living to the farmer, and also a better real wage to the industrial worker who goes to the city from the farm, is such a decline in the birth rate that the natural increase will fall below the absorption capacity of new land and new industry. That there will be any marked decline in the birth rate in China for three or four generations certainly is not to be expected; it can only be hoped for. Even the most



sanguine cannot suppose that the grip of the family system in China will be greatly relaxed for several decades. Under this system, the individual counts for nought, being merely the carrier of the family line, a link in the biological chain connecting the past with the future. The whole social order of China is built upon the family and is directed to encouraging a high birth rate so that the family may not die out. To overthrow this system or even to change it so the married couple, in whatever station in life, will feel free to control births in the way we do in the West means a social revolution beside which the adoption of communism in the United States would be easy and would require relatively little readjustment of mental attitudes. This does not mean that the family system of China does not have some points of superiority to our rugged individualism. But before birth control can become sufficiently general in China to reduce to manageable proportions the natural increase resulting from the improved sanitary conditions accompanying a rising standard of living, the whole social system must be profoundly revolutionized. This cannot be accomplished, at the earliest, in less than two or three generations, even under the stimulus of war. Then it will be two or three more generations before the birth rate falls more rapidly than the death rate. Not until this happens can the increase in productive power be used for the improvement of living conditions rather than for the support of more people at the existing standards.

In the second place, it seems rather doubtful whether any considerable improvement can be hoped for in the manner of life of the masses of the Chinese until education along many lines has become more general. Some progress is being made in this direction but the development of a system of education, which will contribute not only to economic efficiency of China but also to the knowledge of satisfactory living, is bound to be an expensive and a slow process. It does not seem probable that the improvement of life to be expected from this source will be very rapid. To the outsider interested in the welfare of the people, it appears that the education which will contribute most largely to this end is not mere school education, but education in habits of living which will issue in better health and more complete utilization of the existing resources of the community for the improvement of the quality of everyday living. It is far more important for the Chinese to realize that three or four births and one death will perpetuate the family just as certainly as eight or nine births and five or six deaths than to learn the contents of many books. In past ages the Chinese family system provided a reasonably satisfactory adjustment to life. This is no longer the case. China, like the West, willy-nilly is entering upon a new era in her existence, and what was sufficient to ensure survival, and even a large measure of welfare as understood two thousand years ago, is not good enough for today. The common Chinese criticism of Western education as concerned only with shaping the individual to fit into the economic machinery of the nation no doubt has a large measure of truth in it; but the implication that China has a superior system, considered from a broadly human point of view, seems to me quite unfounded. However valuable China's system was in the past, it is antiquated today, and China is faced with the double problem of developing an educational system which will make her people efficient units in the economic order and will also teach them how to use their increased productive power and leisure for the enrichment of human life. These are both diffi-

cult problems and when they are considered from various angles, as we have tried to do here, it appears very doubtful whether China will make much progress in their solution during the next several decades.

After considering all these economic factors and also trying to give due weight to less ponderable social factors, I find myself forced to a rather pessimistic view regarding the probable improvement of standards of living in China during the foreseeable future, so far as they are dependent upon the industrial revolution that is under way or the agricultural revolution that may take place. As regards the outlook for China for the period under discussion, I find myself a good Malthusian. Of course, things will not always be as they now are, nor as it seems they are likely to remain for the next three or four generations. In time the Chinese will appreciate the advantages of a low birth rate and a low death rate, as we do in the West, and will want the comforts and luxuries of life only possible with a low birth rate. But since I cannot see these momentous social changes taking place in a few decades, as many of the younger Chinese appear to believe probable, I am less optimistic than I should like to be regarding the outlook for the improvement of the standards of living of the great mass of the people in China during the coming century.



Table II. Registration Schedule of Death

Series-----

Prepared by the Department of Agricultural Economics,  
University of Nanking.

- (1) Village number \_\_\_\_\_ (2) Name of village \_\_\_\_\_  
 (3) Family number \_\_\_\_\_ (4) Name of the head of family \_\_\_\_\_  
 (5) Crop area \_\_\_\_\_ (6) Land tenure \_\_\_\_\_  
 (7) Reporter \_\_\_\_\_ (8) Date of registration \_\_\_\_\_

D E A T H												
Name of the deceased	Relation of the deceased to the head of family	Date of death	Age	Sex	Place of death	Cause of death	Marital status	Occupation	Place where the deceased worked	Occupation of the head of family	Economic status of family	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13
				Male			Married				Poor	
				Female			Single				Well-to-do	
							Widowed				Rich	
							Divorced					



Table IV. Registration Schedule of Migration

Prepared by the Department of Agricultural Economics,  
University of Nanking.

- (1) Village number \_\_\_\_\_ (2) Name of village \_\_\_\_\_  
 (3) Family number \_\_\_\_\_ (4) Name of the head of family \_\_\_\_\_  
 (5) Crop area \_\_\_\_\_ (6) Land tenure \_\_\_\_\_  
 (7) Reporter \_\_\_\_\_ (8) Date of registration \_\_\_\_\_

Name	Relation 'to the 'head of 'family	Sex	Age	Occupation	From 'what 'place	Date of 'emi- 'gration	Place 'migrant 'went	Date of 'immi- 'gration	Cause of 'migration
1	2	3	4	5	6	7	8	9	10

Table V. Census Schedules

Prepared by the Department of Agricultural Economics,  
University of Nanking.

- |                                      |                                     |
|--------------------------------------|-------------------------------------|
| (1) Village number _____             | (2) Family number _____             |
| (3) Name of village _____            | (4) Economic status of family _____ |
| (5) Crop area _____                  | (6) Land tenure _____               |
| (7) Name of the head of family _____ | (8) Investigator _____              |

**A. Total Number of People Living in the Family in March 1, 1932.**

Family head and his or her family members	Age	Marital status		Education			Occupation	
		'Married,	'Age at	'Number of schooling'				
		'single,	'first	Tutor	Public	'Illiterate'		
		'widowed,	'mar-	school	school			
		'divorced'	'riage					
	1	2	3	4	5	6	7	8
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

**B. Total Number of Absent Relatives in March 1, 1932.**

Family head and his or her family members	Age	Marital status		Occupation	Residence	Cause of emigration
		'Married,	'Age at			
		'single,	'first			
		'widowed,	'mar-			
		'divorced'	'riage			
1						
2						
3						
4						
5						
6						

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