The Population of China in 1910

Author(s): Walter F. Willcox

Source: *Journal of the American Statistical Association*, Mar., 1928, Vol. 23, No. 161 (Mar., 1928), pp. 18-30

Published by: Taylor & Francis, Ltd. on behalf of the American Statistical Association

Stable URL: https://www.jstor.org/stable/2277399

THE POPULATION OF CHINA IN 1910[1]

By Walter F. Willcox, *Cornell University*

The population of China is the largest unknown part of the population of the earth. How far it is from determined appears in the fact that a recent and authoritative repository of information about that country gives three figures for the population at recent dates of the old eighteen provinces often called China Proper, the largest, 411,000,000, exceeding the smallest, 316,000,000, by 95,000,000, a number not much less than the population of all Latin America.[2] This it does without making any attempt to harmonize the figures or to indicate which is most trustworthy.

Western students of Chinese conditions, with a few exceptions, have followed the same course as the *China Year Book* and abandoned the problem as insoluble. It must be admitted that no final solution is in sight. But a question of this nature is mastered by reducing the range of possibilities and strengthening the evidence for an answer of a certain order. Along that road within a century progress has been clear and definite. In 1810 Malte-Brun wrote:

> Among the different accounts respecting China how shall we hit upon the true one? Has that country 27,000,000 inhabitants according to Sonnerat? or 55,000,000 according to the extract from the Official Gazette of Pekin? or 70,000,000 according to the Russians? or 100,000,000 as De Guignes believed? or 19,662,000 as Mr. Buesching informs us? or 200,000,000 agreeable to the statement of the missionaries? or, finally, 333,000,000 as a Chinese mandarin, perfectly veracious no doubt, assured Lord Macartney? [3]

The largest guess reported by Malte-Brun exceeded the smallest more than ten-fold; today no one places the population of China below 270,000,000 or above 510,000,000,[4] a difference of less than two-fold. Thus during the nineteenth century the range of the guesses was greatly reduced.

But progress in another direction has been more important. When

[1] This paper was presented before the Seventeenth Session of the International Statistical Institute, held at Cairo in the winter of 1927–28, and will be published in the Bulletin of the Institute. Any one interested in the development of the writer's opinions about the population of China will find them stated in "The Expansion of Europe," in *Studies in Philosophy and Psychology, A Commemorative Volume*, pp. 66–70, Houghton, Mifflin and Company (1906); "The Expansion of Europe in Population," in *American Economic Review*, Vol. V, pp. 742–4 (1915); "China's Population—400,000,000 or 300,000,000?" in *Chinese Students' Monthly*, Vol. XXII, pp. 23–9 (1926).

[2] *The China Year Book, 1926-1927*, p. 3.

[3] Malte-Brun, *Précis de la Géographie Universelle*, Paris, 1810. The quotation is from the translation published at Boston in 1824, Vol. 1, p. 549.

[4] These maximum and minimum figures are taken from the article on "Population" in Couling's *Encyclopædia Sinica*. They are reached by putting in one column the minimum estimate for each province whatever the source and in another column similarly the maximum estimate. No significant estimate for all China has been found as low as 270,000,000 or as high as 510,000,000, although the *Statesman's Year-Book for 1927* does refer to an estimate by an independent investigator (unnamed) of 545,000,000.

Malte-Brun wrote he could present nothing beyond a series of guesses mainly by western writers unsupported by evidence. All students of the subject today recognize the existence and importance of a long series of Chinese censuses, so-called, and the discussion turns upon the methods by which they were taken and the meaning, congruence and trustworthiness of their results.

There are two outstanding reasons for believing that another forward step towards determining the population of China is now possible. The first is that the enumeration of 1910 has furnished probably more trustworthy and certainly more abundant material for analysis than any earlier or later Chinese census. This was the opinion of Tenney, who wrote in 1911:

"The census of 1910 is probably the most accurate that has ever been taken [in China]," [1] and of Rockhill, who wrote a year later: "The first official Chinese attempt at a real enumeration of the population . . . seems entitled to more confidence than the enumerations which have heretofore appeared." [2]

A different opinion is entertained by Roxby who says that the China Continuation Committee's estimate of 1918–1919 and the Post Office Census of 1920 "represent the most scientific and probably the most reliable computation of the population of China that has yet been made." [3]

Examination of the China Continuation Committee's estimate gives ground for a different conclusion. Their table shows a population of 441,000,000 and that of the Post Office a population of 428,000,000, but the most definite statement in the text is that "Undoubtedly the exact population of China is considerably lower than most estimates now lead one to believe. . . . Perhaps the present population of the Chinese Republic lies somewhere between 350 and 400 millions." [4] This is in substance an admission that the official figures in their table are probably too large by between 10 and 20 per cent.

A second reason for believing that the problem can now be advanced towards a solution is that the more abundant and better material furnished by the census of 1910 has not yet been reviewed by any one trained in statistics and acquainted with the probabilities suggested by the figures of other Oriental countries like Japan, British India and the Philippines, in which statistics have advanced farther than in China. What is needed is to bring both familiarity with Chinese conditions and familiarity with statistical methods and results to bear upon

[1] *U. S. Daily Consular and Trade Reports* for July 13, 1911, pp. 184–7.

[2] W. W. Rockhill, "The 1910 Census of the Population of China" in *T'oung-Pao*, Vol. XIII (1912), p. 117. Reprinted in Am. Geog. Society Bulletin Vol. XLIV (1912): pages 668–673.

[3] "Distribution of Population in China" in *Geographic Review*, 15 (1925), pp. 1–24.

[4] *The Christian Occupation of China*, p. 11.

the problem. The writer has tried to supplement his deficiencies in the former field by correspondence and conference with men long resident in China.[1]

The history of census-taking in the Celestial Empire falls into two periods separated by the imperial edict of A.D. 1712 which decreed "that the number of families given in the enumeration of the preceding year should remain the invariable basis for assessment of the crown taxes." [2]

The statement of Sacharoff is:

> In A.D. 1712 an edict was issued which decreed that the number of tax-paying people in A.D. 1711 should forever remain the standard of those subject to crown service; the rest of the population, whatever might be its increase, being exempted from the payment of taxes.[3]

Parker puts it a little differently:

> The poll-tax was merged [sc. in 1712] in the land-tax. Each taxable unit, say, was an acre of first-class ground and there were at that time about 100,000,000 English acres taxed. . . . As the revenue was sufficient the Emperor decided that in future, no matter how the population might increase, the land being a fixture ought never to pay more than 100,000,000 units.[4]

The result of the radical change was to cut off the Chinese census from any use in administration. Before 1712 imperial taxation was based on it at least in part; subsequently for two centuries, 1712–1910, nothing of any local interest was based on it. The census was maintained "in order to present the rolls of the census to heaven and to hand the same over to the college of the imperial historians." [5]

The effect of this change upon the character and trustworthiness of the Chinese censuses taken between 1712 and 1910 is not of importance for the present argument, which aims only to show that the census of 1910, like its predecessors before 1712, had a practical purpose. The purpose was different, to be sure; the new census sought to give a basis not for imperial taxation but for apportioning seats in the newly established provincial assemblies. On this point Rockhill, who was in 1908 American Minister at Peking and for many years had interested himself in the question of China's population, wrote:

> When the Empress Dowager took the momentous step of promising the people a representative government, the need of a census became at once felt as it probably never had been before. . . . In an Imperial Edict of August 27,

[1] Among those who have helped him are Professor E. T. Williams of the University of California, Professor Paul Langhans, Editor of *Petermanns Mitteilungen*, Professor Erich Hauer of the University of Berlin, Professor Hu Shih of the University of Peking, Mr. Sao Ke Alfred Sze, Chinese Minister to the United States, the late W. W. Rockhill, American Minister to China, 1905–1909, and most of all Mr. Raymond P. Tenney of the American Department of State.

[2] W. W. Rockhill, "Inquiry into the Population of China," in *Smithsonian Report for 1904*, page 663.

[3] Sacharoff, *Rise and Fall of the Chinese Population* (1864), p. 43.

[4] E. H. Parker, *China, Past and Present* (1903), p. 26.

[5] Sacharoff, *idem*.

> 1908 . . . it was prescribed that in 1909 the Ministry of the Interior with the assistance of the Viceroys and Governors was to begin taking a census by households . . . and report the results to Peking in 1910. In 1911 a further census (by heads) was to be made and reported to the Government in 1912.

This edict laid down a nine-year program of reforms introducing constitutional government. In the first year, 1908–1909, among other steps towards that end census regulations were to be issued; in the second year, 1909–1910, the census was to be taken throughout the Empire; in the third year, 1910–1911, the Viceroys and Governors were to report on the results of the census in their provinces; in the fourth year, 1911–1912, there was to be an investigation of the census.[1] Evidence seems to indicate that during the first three years the program was carried out. The census was taken in 1910 and a year later its results were reported. They are found in a Report to the Throne made on February 27, 1911, by the Chinese Ministry of the Interior and published in the Peking Government Gazette.

After not a little search, including two fruitless examinations of the Chinese material in the Library of Congress, a copy of the Chinese text of this Report has been found and also in typewritten form the text of an English translation.[2] Table I reproduces the translation of the summary of the earlier part of the Chinese census of 1910, that upon households, from Mr. Tenney's translation with a few changes which his own review of the subject or our discussions have led him or me to make. All figures in the columns headed "Previous Numbers" and "Total" and the three totals at the end are additions to the original. Figures in the last column are the sums of those in the two preceding. Those in the first column require a word of explanation. The interpretation put on the Chinese Report by all who have studied it is that the districts to which the figures relate are mutually exclusive (for example, the district "Peking Eight Banners" is not included in the first district "Peking"). Under that interpretation the number of households in China is to be determined by adding the numbers reported from each district. To get the number of households in Chihli province, for example, it is necessary to add the number in all enumeration districts lying within that province. Every such district has been given the number 1 in the first column of Table I and in the same way every other

[1] *China Year Book 1912*, Chapter XXI, *passim*.

[2] The former is in the Library of Congress (filed under Orientalia Chinese *B* 312 26 and in *Cheng Chih Kuan Pao* dated Hsuan T'ung, 3rd year, 1st moon, 29th day); the latter is in the files of the American Department of State. I owe their discovery and help in their interpretation to Mr. Raymond P. Tenney, author of the translation and now attached to the Division of Far Eastern Affairs in the Department of State. The copy of the Report in the Library of Congress is the only one which has been unearthed as a result of inquiries addressed also to several other American libraries, the libraries of the British Museum, of the Royal Statistical Society and of the Oriental Seminar at Berlin, to Chinese diplomatic representatives at Washington, London and Berlin and to the American Minister at Peking.

province has been given a number determined by its geographical position according to a common arrangement of the eighteen provinces shown in Table II. The numbers greater than 18 represent parts of China outside of the old eighteen provinces, 19 is Sinkiang or Eastern Turkestan, 20–22 inclusive are Manchuria, and 23 is Mongolia.

TABLE I

NUMBER OF HOUSEHOLDS IN THE CHINESE EMPIRE IN 1910

Province number	Enumeration district	Householders	Renters	Total
1	Peking	68,561	70,009	138,570
1	Shun T'ien Fu (exclusive of Peking)	600,797	91,899	692,696
20	Fengtien (28 districts)	549,910	249,926	799,836
21	Kirin (whole province)	422,781	316,680	739,461
22	Heilungkiang (whole province)	145,929	95,082	241,011
1	Chihli (whole province)	3,606,936	557,153	4,164,089
	Kiangsu (under Nanking, larger districts)	807,909	170,097	.....
	(under Soochow, all)	1,697,499	472,629	.....
6	Total, Kiangsu	.....	.....	3,148,134
7	Anhui (whole province)	2,486,896	654,288	3,141,184
2	Shantung (whole province)	5,143,699	234,173	5,377,872
3	Shansi (whole province)	1,520,031	470,004	1,990,035
8	Honan (whole province)	3,969,308	692,258	4,661,566
4	Shensi (whole province)	1,319,210	282,234	1,601,444
5	Kansu (whole province)	711,000	195,639	906,639
19	Sinkiang (whole province)	385,845	67,632	453,477
12	Fukien (whole province)	1,699,067	677,788	2,376,855
11	Chekiang (whole province)	2,524,635	1,363,677	3,888,312
13	Kiangsi (bulk of province)	2,287,421	1,098,907	.....
	Treaty ports	20,509	16,316	.....
	Boat families:			
	provincials	9,023	.....	.....
	extra provincials	7,697	.....	.....
	Total, Kiangsi	.....	.....	3,439,873
9	Hupeh (whole province)	3,783,179	749,352	4,532,531
14	Hunan (whole province)	2,574,128	1,714,036	4,288,164
10	Szechwan (55 districts)	2,321,725	937,992	3,259,717
18	Kwangtung (whole province)	4,358,473	683,307	5,041,780
17	Kwangsi (whole province)	1,097,539	77,005	1,174,544
16	Yunnan (whole province)	1,328,292	219,722	1,548,014
15	Kweichow (whole province)	1,634,782	136,751	1,771,533
1	Peking Eight Banners	118,783	.....	118,783
1	Imperial Household	4,571	.....	4,571
1	Peking Suburban Camps	56,536	17,656	74,192
1	Peking Gendarmerie:			
	Left Wing, 4 wards	486	368	.....
	Right Wing, 5 wards	538	240	1,632
1	Eastern Tombs Banner Camps	2,981	1,225	4,206
1	Western Tombs Banner Camp	908	138	1,046
1	Ma Lan Chen jurisdiction	586	340	926
1	T'ai Ning Chen jurisdiction	2,209	766	2,975
23	Jehol Mongol Banners	54,994	2,764	57,758
23	Ch'a-har jurisdiction	12,938	.....	12,938
1	Mi Yun Manchu garrison	1,917	.....	1,917
1	Shanhaikwan Manchu garrison	1,949	.....	1,949
2	Ch'ing Chou Manchu garrison	2,405	.....	2,405
3	Sui Yuan Ch'eng Manchu garrison	2,765	.....	2,765
4	Hsi An Manchu garrison	2,525	1,373	3,898
5	Liang Chou Manchu garrison	794	.....	794
19	Ili Manchu garrison	13,214	.....	13,214
12	Foochow Manchu garrison	1,738	546	2,284
10	Ch'engtu Manchu garrison	2,516	1,341	3,857
18	Canton Manchu garrison	6,885	3,753	10,638
23	Uliasutai jurisdiction	13,516	.....	13,516
23	Tarbagatai jurisdiction	3,887	.....	3,887
23	Cobdo jurisdiction	17,108	.....	17,108
5	Hsining jurisdiction	1,221	811	2,032
23	Urga jurisdiction	40,105	.....	40,105
½ to 10	Szechwan-Yunnan Border			
½ to 16	Lands jurisdiction	46,362	2,512	48,874
	Total	47,497,218	12,328,389	59,825,607

Table I furnishes the data for determining the number of households in seventeen of the eighteen provinces of China Proper. In the case of Szechwan the returns are confessedly incomplete, only 55 of the 175 districts or counties reporting. The revolution which dethroned the Manchu dynasty in the following year started in Szechwan and at the time of the census of 1910 parts of that remote province were in turmoil. It has been assumed that the average number of households per district in the missing 120 districts was the same as in the 55 which did report. On this assumption there were 10,394,194 households in Szechwan, a number which, however far from the truth, is doubtless much nearer to it than the 3,288,011 households reported.

There is a question whether the last enumeration district in Table I lay within China Proper or in Tibet. It has been assigned to the former, because to do so increases the number of households and so the estimated population of China. In default of special information it has been divided equally between Szechwan and Yunnan.

With these explanations it is easy to see how Table I has been interpreted into Table II.

TABLE II

NUMBER OF HOUSEHOLDS IN CHINA PROPER BY THE CHINESE CENSUS OF 1910

Province	Number of households
North China	15,095,436
Chihli	5,207,552
Shantung	5,380,277
Shansi	1,992,800
Shensi	1,605,342
Kansu	909,465
Central China	25,877,609
Kiangsu	3,148,134
Anhui	3,141,184
Honan	4,661,566
Hupeh	4,532,531
Szechwan	10,394,194
South China	23,566,434
Chekiang	3,888,312
Fukien	2,379,139
Kiangsi	3,439,873
Hunan	4,288,164
Kweichow	1,771,533
Yunnan	1,572,451
Kwangsi	1,174,544
Kwangtung	5,052,418
China Proper	64,539,479

The next and more difficult problem is to estimate the number of persons in these 64,540,000 households. For that purpose it is necessary to determine as well as may be the average number of persons to a household. The census of 1910 was more important than any other Chinese census ancient or modern because it was the only one, so far as I know, which attempted to determine the population as well as the number of households. But when examining the evidence it presents

it will be well to have in mind what was known before 1910 about the average size of a Chinese household. The following passage in Rockhill's paper of 1904 summarizes the best knowledge or opinion about that question:

> There is much uncertainty as to the number of individuals contained in each recorded "household" or hu, . . . In the time of Mencius (fourth century B.C.) the "family" (chia) was supposed to comprise eight mouths (k'ou). This was the number of persons whom 100 mou (about 15 acres) of medium land were computed to support. Under some dynasties (as the Han) it would seem that the "household" comprised from 4.8 to 5.2 individuals; in others, the T'ang, for example, it rose to 5.8. During others, as the Sung, it was only a fraction over 2 persons, according to Sacharoff, though Biot contends that in this period it was a fraction more than 5 persons, as in the preceding period of the T'ang. Under the Yuan dynasty, according to Amiot, the "household" comprised 5 persons, and in the succeeding Ming dynasty it seems to have varied from about 5 to over 6.6. Even during the present dynasty we are in grave doubt as to the numeric value of the term hu ("household," "family"). Father Amiot and other foreign writers have thought it represented 5 persons, de Guignes says 2 to 3, but in the opinion of E. H. Parker it averaged 6 persons. In the census of 1842, which gave the number of households and of individuals, the former averaged 2.3 persons to the family; and in a census of the city of Peking for 1846 it averaged 3.1.[1] I am disposed to accept 4 as a fair figure for enumerations of the eighteenth and nineteenth centuries.[2]

On this passage several comments may be made:

1. The most acute and best informed of recent writers on the population of China believed in 1904 that in modern times the average number of persons to a Chinese family or household (both English words are used as a translation of one Chinese term) was about four. Rockhill's change of opinion in 1912 and the reasons for it will be discussed later.

2. The reasons assigned for this opinion do not furnish it with any statistical support. The figure is not even an estimate, but only the guess of a well-informed man.

3. That the average number of persons to a household at different times under the Manchu dynasty (1644–1912 A.D.) varied between two and six persons, as the passage perhaps implies, is incredible. The average number of persons to a household in the United States was 5.7 in 1790 and decreased slowly by about one-tenth of a person in each decade to 4.3 persons in 1920. Probably the change in China if any during the same period was much less than that in the United States.

4. A knowledge of statistical probabilities and especially of the results in other Oriental countries where statistics have been more developed is almost as necessary as a knowledge of Chinese conditions if one is to escape error.

[1] These statements I have been unable to verify.

[2] W. W. Rockhill: "An Inquiry into the Population of China" in *Smithsonian Report for 1904*, pp. 659 ff.

After this survey of what was known at the opening of the present century about the average size of a Chinese household the new evidence to be derived from a further analysis of the census of 1910 may be examined.

This evidence is found in the second part of the Report to the Throne summarizing fragmentary returns of the census of population. They relate to sixteen districts lying in six of the eighteen provinces well enough distributed to be representative of the whole. The report covers the whole population of four provinces, 89 districts in Shansi and 125 in Szechwan. Its results are brought together by provinces in Table III.

TABLE III

RESULTS OF THE CENSUS BY INDIVIDUALS, FOR CERTAIN CHINESE PROVINCES, 1910

Province	Males	Females	School children	Able-bodied males
Chihli	14,056,900	11,650,857	2,194,496	4,747,653
Shansi (89 districts)	4,528,445	3,400,719	493,707	1,587,191
Szechwan (125 districts)	7,133,090	5,301,980	1,338,330	2,595,479
Chekiang	7,004,082	5,909,237	1,030,336	3,057,912
Kiangsi	8,237,379	6,235,300	.....	.....
Kweichow	4,636,965	3,866,998	862,951	1,987,836
Total	45,596,861	36,365,091	5,919,820	13,976,071

The interpretation of Table III is more difficult than that of Table I. First there are uncertainties of translation. Rockhill interprets the headings of the first and second columns as "Adult Males" and "Adult Females." I am informed that the meaning of the Chinese term is not limited to adults and suspect that Rockhill was misled by the third column "School-children" into assuming that only adults had been counted in the first two classes. Between columns 2 and 3 is a Chinese term which Tenney at first translated by "Additional Enrollment" for which he would now substitute "Additional Investigation." This term may apply equally to columns 3 and 4 and that application, although not necessary, is perhaps to be preferred. Its introduction seems to support an interpretation which I had come to accept before this Chinese word was called to my attention. It seems likely that the whole population was to be reported in two great classes of males and females and in addition two special classes, namely, children in school or of school age (6 to 16 years of age Rockhill interprets it) and the males fit for military service or able-bodied males ("probably of from 16 to 45 years of age" Rockhill interprets it). If the instructions to the provincial authorities, one mention of which I have found, could be discovered they might determine this crucial point.

The main problem in the interpretation of Table III is this, "How is the total population to be determined from the figures in these four columns?" My answer is, "By adding the figures in the first two columns." Before examining that interpretation it will be well to consider two others. In his original report Mr. Tenney added the four columns and by that path arrived at 5.5 for the average size of a Chinese household, a figure which since then has been widely accepted. He now, I understand, would omit at least the figures in the fourth column on the ground that they are probably included in the first.

Rockhill added the figures in the first three columns to get the total population and thus reached 4.8 as the average size of a family. But this interpretation is vitiated in my opinion by his misunderstanding the figures in the first two columns as confined to adults and by an oversight of the word "additional investigation" or a failure to read into it what seems to me its natural implication. The Chinese text, then, favors but does not require interpreting the first two columns as including persons of all ages. In that case their sum would be the total population.

What light does internal evidence throw upon Table III? It will be noticed that the males outnumber the females by more than 9,000,000. This result seems improbable; certainly, it is unparalleled. The proportion of males reported in these six provinces is about equal to that among the foreign-born population of the United States or among the total population of ranching states like Montana or Wyoming. What is known about the approximate equality in the number of the sexes at birth and about the little influence of migration in disturbing that initial equality in great masses of population compels one to look with doubt upon these returns. If they are correct they point to an amount of female infanticide in China heretofore hardly suspected. If they are incorrect the error probably lies in the wholesale omission of females. In favor of their correctness it must be remembered that every Oriental country in which the population has been counted with distinction of sex shows an excess, though a far smaller excess, of males.

This difficulty may be met by making one or the other of two assumptions, first, that the figures are correct and, secondly, that many females were omitted and that their true proportion in these Chinese provinces was the same as that in British India, the Oriental country apart from China with the greatest proportion of males. The second assumption would cut down the excess of males in these provinces from over 9,000,000 to about 2,500,000. Very likely both female infanticide on a great scale and the omission of many females from the count concurred to bring about the result. If so the truth would lie between the two ex-

tremes. Of the two assumptions I prefer the former, namely, that the figures are correct.

Does internal evidence throw any light upon Rockhill's interpretation that the first two columns are confined to adults and that to get the total population not only the children of school age (6 to 16 years)[1] in column 3 but the children under 6 must be added?

Of these four columns the one whose meaning is most certain is probably the last. Three interpreters working independently agree that this column gives the number of males able to bear arms.[2] The age limits of the group are not easy to define; Rockhill suggests "probably of from 16 to 45 years of age." It is my belief that he puts the lower age limit too early. In the United States the militia age is 18–44 and in the leading European countries before the War, as in Japan, service with the colors began at 20. So I will assume that column 4 includes all males between 20 and 44 years of age or, what amounts for present purposes to the same thing, that the number of males within that age period who were not reported (perhaps because they were physically unfit to bear arms) was balanced by younger males who were. On this assumption the following per cents for several Oriental countries and the United States have been computed to compare with the Chinese per cent.

Country	Date	Per cent that males 20–44 years of age in certain countries make of		
		All males	Males at least 6 years of age	Males at least 20 years of age
Japan	1918	34.7	41.0	62.8
British India	1921	36.8	43.1	69.5
Philippines	1903	34.6	42.2	68.9
Australia	1921	37.6	43.3	62.5
Egypt	1917	33.6	40.2	66.7
United States	1920	38.1	43.3	62.5

The ratio of the number of Chinese able to bear arms (Table III, Column 4) to the number in Column 1 is 37.4 per cent. It is clear that this ratio belongs in the first rather than in the second or third column above. If so and if the men able to bear arms included all between 20 and 44 years of age then the male population in column 1 includes

[1] If the figure in the first column includes all males and if the proportion of the sexes in these provinces is about the same as in British India, then the school children in column 3 are little more than one-third of the actual number of children between 6 and 16 as estimated from their proportion in other Oriental countries. Any other assumption about columns 1 and 2 would increase the apparent shortage in column 3.

[2] They are Tenney, Rockhill and Hauer, whose translation of the "Report to the Throne" into German was made in Berlin for the German Embassy and printed in *Petermanns Mitteilungen*, Vol. 57, part 2 (1911), pp. 255 ff.

males of all ages (even those less than six years of age) and not merely adult males or adult males and children of school age.

Both internal and external evidence thus concur in discrediting the hypothesis that columns 1 and 2 include only adults or only those over six years of age. It follows that the total population of these provinces is probably the sum of the first two columns. If this interpretation be accepted for these five provinces at least and presumably therefore for the others, the average size of a Chinese household is not 5.5 persons or 4.8 persons but 4.3 persons. If many females were omitted from the count and if in fact the proportion of females to males in China was the same as in British India then the average size of a household was 4.5 persons. The former hypothesis seems preferable but in Table IV the population of China Proper has been computed on both.

TABLE IV

POPULATION OF CHINA PROPER OR THE EIGHTEEN PROVINCES BY THE CENSUS OF 1910

Province	Number of households	On the basis of	
		4.3 persons to a household	4.5 persons to a household
North China	15,095,436	64,910,000	67,930,000
Chihli	5,207,552	22,392,000	23,434,000
Shantung	5,380,277	23,135,000	24,211,000
Shansi	1,992,800	8,569,000	8,968,000
Shensi	1,605,342	6,903,000	7,224,000
Kansu	909,465	3,911,000	4,093,000
Central China	25,877,609	111,274,000	116,449,000
Kiangsu	3,148,134	13,537,000	14,167,000
Anhui	3,141,184	13,507,000	14,135,000
Honan	4,661,566	20,045,000	20,977,000
Hupeh	4,532,531	19,490,000	20,396,000
Szechwan	10,394,194	44,695,000	46,774,000
South China	23,566,434	101,336,000	106,049,000
Chekiang	3,888,312	16,720,000	17,497,000
Fukien	2,379,139	10,230,000	10,706,000
Kiangsi	3,439,873	14,791,000	15,479,000
Hunan	4,288,164	18,439,000	19,297,000
Kweichow	1,771,533	7,618,000	7,972,000
Yunnan	1,572,451	6,762,000	7,076,000
Kwangsi	1,174,544	5,051,000	5,286,000
Kwangtung	5,052,418	21,725,000	22,736,000
China Proper	64,539,479	277,520,000	290,428,000

In Table IV the most doubtful figures are probably those for Szechwan. It will be remembered that the number of households reported from that province was multiplied by 3.18 because the total number of its districts was 3.18 times the number from which reports were received. In his article published in 1904 Rockhill attempted to estimate the population of Szechwan. After rejecting the estimate of 71,000,000 made by the Board of Revenue in 1885 with the comment

"All foreign writers agree that it is quite impossible to believe that any such population exists—or can exist in it," he gave the following estimates:

Source	Date	Estimate
Maritime Customs at Ch'ung-K'ing	1891	30,000,000—35,000,000
Lyons Commercial Mission	1895–6	40,000,000—45,000,000
G. J. L. Litton	1898	43,000,000
F. A. S. Bourne	1898	45,000,000—55,000,000
Hosie	1904	45,000,000

To these should be added the figure in his article on the 1910 census, 54,500,000. This is based on a report of the Viceroy of Szechwan upon the census of 1910 printed in a Chinese newspaper. The average of these six estimates is 43,000,000–46,000,000 which agrees pretty well with the estimates in Table IV.

The foregoing analysis of the evidence seems to justify the conclusion that the population of China Proper in 1910 was probably between 275,000,000 and 300,000,000 and nearer the smaller than the larger number. Perhaps 280,000,000 is as close an approximation as the evidence permits.

The ablest writer on Chinese population is Rockhill. The general result of the preceding discussion is to reduce his estimate of 311,000,000 for the population of China Proper in 1910 (accepting his very doubtful figure of 9,000,000 for the omitted children under six years of age) to about 280,000,000 and so to bring the result into line with his earlier conclusion. Then he wrote: "The conviction is forced on me that the present population of China Proper does not exceed 275,000,000 and is probably considerably under this figure." The foregoing argument places his earlier result on a sounder statistical foundation than it has hitherto had.

To the figures in Table IV estimates may be added for the outlying districts of Sinkiang, Manchuria, Mongolia and Tibet and thus an approximate figure reached for the population of all China. For Sinkiang and Manchuria some material is available in the published returns of the census of 1910. From Fengtien in Manchuria returns were received for only 28 districts. As it now has twice as many, the number of households for that province in Table I has been doubled. For Tibet no information was published and for Mongolia the fragmentary material gives no basis for an estimate. For these districts, therefore, Rockhill's estimates of 1912 have been accepted. Thus Table V has been constructed.

TABLE V

ESTIMATED POPULATION OF OUTLYING DISTRICTS OF CHINA, 1910

Outlying districts	Number of households	Population on the basis of	
		4.3 persons to a household	4.5 persons to a household
Sinkiang	466,691	2,007,000	2,100,000
Manchuria	2,580,144	10,837,000	11,587,000
Fengtien	1,599,672	6,719,000	7,199,000
Kirin	739,461	3,106,000	3,328,000
Heilungkiang	241,011	1,012,000	1,060,000
Mongolia	.....	1,800,000	1,800,000
Tibet	.....	2,000,000	2,000,000
Total Outlying Districts	.....	16,644,000	17,487,000
China Proper	.....	277,520,000	.....
All China	.....	294,164,000	.....

The population of the Republic of China with its dependencies is not far from 295,000,000.

The foregoing estimate has already been compared with Rockhill's; it should be compared also with the best European results. The only authors familiar with geography and statistics who have examined the population of China over a series of years with penetrating analysis and trained critical ability are Behm, Wagner and Supan.[1] The general result of their discussions has been to estimate the population of China much below current official figures and the further their analysis was pushed the lower their results became. At the beginning in 1874 Behm based himself on the Chinese census of 1842 and estimated the population of China at 405,000,000. In 1882 he accepted the Chinese census of 1812 as probably more trustworthy than that of 1842 and in consequence reduced his estimate to 350,000,000. In 1901 Supan discussed a padding of the Chinese figures in 1775 by about 48,000,000 which had remained in all subsequent figures and to which Sacharoff had previously called attention. Supan devised an ingenious method for squeezing out this water and as a result reduced his estimate to 320,000,000. But this was long before the evidence derivable from the Chinese census of 1910 to which the present paper is confined had become available.

[1] In "Die Bevölkerung der Erde" Numbers I–XII (1872–1904).