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THE POPULATION MOVEMENT IN JAPAN

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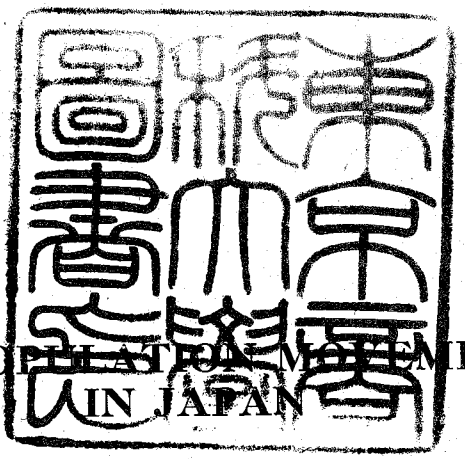


THE POPULATION MOVEMENT IN JAPAN

The population movement in the present-day Japan is not much different from the conditions in some of the European countries in the later decades of the nineteenth century or in the beginning of the twentieth. What happened there in the past is now taking place here with a time lag of half a century. Its outstanding features are two: (1) rapid increase in total number and (2) continuous migration from rural to urban parts of the country.

The population of this country, which remained stationary for a century and a half, began to expand after the inauguration of the New Regime in 1868, under certain influences fermented by the events usually called the Industrial Revolution. It doubled in sixty years, and is still growing with a remarkable pace. The latest national census revealed an increase of 4.8 millions in the five years, 1930–35, or about one million every year. This figure may appear abnormal to the Europeans of today, because, e. g., England's population in 1933 was only 84,000 larger than in 1932, and that of Germany increased by 233,000 in 1933, and by only about 470,000 even in the exceptional years of 1934 and 1935, when the new legislations for encouragement of marriage became effective. However, a glance at

the European records of the past will convince that there is nothing extraordinary in the growth of Japan's population. The population of England and Wales jumped from 9 millions in 1800 to 32 millions in 1900, and to 36 millions in 1914. That of Germany rose from 28 millions in 1800 to 56 millions in 1900 and to 67 millions in 1914. Germany showed in the first decade of this century an annual increase of 800–900 thousand, although her total population at that time was much smaller than that of Japan at present. But, it is a mistake to believe that the Japanese population will continue to increase indefinitely. It is already showing the sign of declining birth rate, following the example of Europe.

The second of the prominent features of the Japanese population is the migration of young people brought up in villages to cities and towns. The nation, which originally consisted mainly of peasant families, has been and is undergoing an enormous changes in occupations and mode of living. The percentage of agriculture was 78% in 1872, dropped to 51% in 1920 and to 48% in 1930. The farming population did not diminish but their number stood at where it was several decades ago. The vast number of people, which were added to the total population, found employment in other occupations. This is again what happened in the Western countries, when their population was growing rapidly.

The public opinion relating to the population problem is also not unlike that in some of the Western countries in the past.

People rejoice at each report of larger increase in the number of fellow country-men, but, at the same time, are feeling the pressure of increasing number. The Government organized a commission for the investigation of the "population and food problem" in 1927, when Japanese rice was rising in cost and price for some years. After the food problem was solved by the improvement of rice cultivation in Korea and Formosa, the problem of unemployment was considered in connection with

the rising number of the younger generation of workers. The remedies suggested were (1) birth control, (2) emigration and (3) development of export industries. Birth control was never received favourably either by the Government or by the general public, although the practice is spreading silently. But, even if it is going to have an effect on the process of propagation in the future, that cannot influence the number of children, who are born already and swelling the rank of applicants for employment as they grow in age. The policy of emigration, which was taken up with eagerness, so far could not be realized on such a scale as may help the solution of the problem, for economically suitable countries for colonization are not open to the Japanese. Since the foundation of Manchoukuo, a number of experiments of agricultural colonization were reported as successful so that a large-scale plan covering twenty years is now officially established. The development of export industries has been deemed as most hopeful as a remedy. In fact, it was the only way by which the problem was being solved. But here also the nation had to face difficulties of trade barriers: high tariffs, import quotas, etc. It is unfortunate that the world entered an age of economic nationalism, just at the time when the population pressure became hardest in this country. The movement for freer trade sponsored by the League of Nations have finally failed at the fall of gold standard. Thus, disappointed at the precarious conditions of international trade, the nation must turn to the formation of an economic bloc inside the sphere of political influence, where both the acquisition of raw materials and marketing of manufactured goods can be organized on a securer ground. Such was the attitude of the intelligent public towards the international trade in recent years. But, after all, nobody would believe that the country can depend solely on a plan of self-sufficient economic bloc of Eastern Asia. One of the key points of the economic policy under the war condition lies in the encouragement of export trade.

However, the purpose of this paper is not to discuss the solution of the problem, but to present the facts just as they are.

Tokugawa Period

With regard to the population before the Meiji Restoration, we have only scanty materials. We can conclude indirectly from the materials relating to rice production*, that there was a considerable increase of population during the earlier part of the Tokugawa Period (1603–1868), when the endless struggles of local war-lords were put down by the powerful Tokugawa Shogun, and a long period of internal peace began. But, throughout the eighteenth century and the first half of the nineteenth, it is certain that the total population remained almost stationary at a little over 30,000,000, as official countings were taken regularly with six years' interval, the results of which were as follows:

TABLE I. Population Reports in Tokugawa Period
(In 1,000)

Year	Population	Year	Population
1721	26,065	1780	26,010
1726	26,549	1786	25,086
1732	26,922	1792	24,891
1738	Record lost	1798	25,472
1744	26,153	1804	25,518
1750	25,918	1816	25,622
1756	26,062	1828	27,201
1762	25,921	1834	27,064
1768	26,252	1846	26,908
1774	25,990		

These figures do not represent the whole population, as

* The annual rice crop in the Tensho Era (1573–1591) is said to have been 18,000,000 koku, while the total of territories belonging to different feudal lords in the middle of the Tokugawa Period was about 30,000,000 koku.

the *Samurai* class, numbering about 2,000,000* and certain groups of lowest people were not counted. Besides, the reports from some provinces did not include children under 15 and in others those under 2 or 1 year were excepted.

Unfortunately, the original reports coming from different provinces are lost and no separate figures for sexes and ages obtainable. Some historians suppose that they are 2 to 3 millions smaller than the actual totals, but the omission may be still larger, as the number of people entered in the new Family Register in 1872 rose to 34,800,000 and it is improbable that the population had increased by one sixth during the twenty six years following the last report of 1846. However, although the countings are inaccurate, we are able to see from them that a little changes happened in the century and half and no upward or downward trend is noticeable there. And this conclusion seems to be endorsed by general historical observations. The period, although it was remarkably free from civil strifes, has been greatly influenced by famines, pestilences, earthquakes, etc., which occurred from time to time. So long as years of favourable climate and good crops followed one after another, population increased gradually. But it had to shrink abruptly, when attacked by some natural calamity. That was probably a common feature to all countries before the modern ages. Besides, it is a well-known fact that, during this period, diverse habits of abortion and infanticide were prevalent in almost all parts of the country, owing to the necessity of limiting the number of households in villages.** The whole country being fairly well settled except Hokkaido, which was first colonized after the Restoration, and as no

* According to the Statistical Annual for 1882, former *Samurai* families, including those of *Daimyos*, numbered 426,368 and their population 1,934,028. Probably, these numbers remained with a little changes during the greater part of the Tokugawa Period.

** These practices were not particulary prevalent among *Samurai*, as stated by Droppers (Transactions of the Asiatic Society of Japan, Vol. XXII). That they were widespread among peasantry is well-known to Japanese scholars.

improvement was possible both in agriculture and transportation, the people had no means to produce food for additional population. The fixed social structure under 300 feudal lords, each governing his territory as separate from others, made the evolution of trade and industry a very slow process. Therefore, the customary standard of living was maintained only by limitation of number for each social class.

Growth under the New Regime

METHOD OF STATISTICS

The modern national census, which is now established and taken regularly every five years, began only as late as 1920. Before this date, the main source of the population statistics came from the Family Register, which was started as an administrative system in 1872.* Every family with Japanese nationality was then entered in the Family Books kept by all local communities and thence forward every birth, death and marriage was to be registered as the fact happens. If a person leaves his or her original place, it should be declared at the town office of the new domicile, but the original family register remains in the original place, unless the entire family removes to another town and a new register is made there. Thus, the total number of persons on the family books should cover the total population of the Japanese nation.

It does not correspond with the census population, as the foreigners living in Japan are not included, while the Japanese living abroad are included. But the immigration in this country was very small and almost negligible, until Korean labourers came in the latest decade. The Japanese emigration was also not large, about a million of them having been resident outside Japan Proper, just before the foundation of Manchoukuo. That

* The Law Relating to Family Register System was entirely revised in June, 1898.

the Family Books were fairly well kept, considering the crudeness of method, is seen from the fact that the total population for 1920, calculated by this way, was only two millions larger than the census figure for the same year. If we deduct from it the number of those living abroad, the difference is a little over a million. That was the total of errors made in 48 years*.

(In 1,000)

Year	Balance of births & deaths	Newly registered	Year	Balance of births & deaths	Newly registered
1872	163	26	1879	155	4
1873	145	179	1880	280	149
1874	139	232	1881	255	85
1875	214	126	1882	254	62
1876	289		1883	328	105
1877	270	598	1884	270	147
1878	271				

The Results of Family Registers

The results of Family Registers are widely used as population statstics for the 48 years preceding the first national census, as they are the only complete materials obtainable for the period. But, lately, the Bureau of Statistics made new estimates of population for each of these years back to 1872, in order to make the figures comparable to the census results of 1920 and after. Therefore, we give in the following table both the original results of Family Registers and the figures of that estimate.

* When the Bureau of Statistics made the new estimates of population, 1872–1920, of which we mention in the next paragraph, the difference was found to be only 334,275, as they made necessary corrections to the original reports. It seems that the entry in earlier years was very defective, and a large number of persons born before and after 1872 were registered besides those born in each of those years. The above figures are given in the Fifth Statistical Annual.

TABLE II. Population, 1872–1920

Year	Registered		Estimate	Annual rate of increase
1872	33,110		34,806	
1875	33,997		35,316	5.1
1880	35,929		36,649	7.4
1885	37,868		38,313	7.9
1890	40,453		39,902	8.2
1895	42,270		41,557	8.2
1900	44,825		43,847	10.8
1905	47,678		46,620	12.3
1910	50,984		49,184	10.8
1915	54,935	Census	52,752	14.1
1920	57,918	55,963	55,473	10.1
1925	62,044	59,736		
1930	66,888	64,450		
1935	71,968	69,254		

Notes: "Registered" means the population registered at the beginning of the year for 1875–1885, and that at the end of each year for 1890–1920. "Estimate" is made for the beginning of the years. "Census" was taken on October 1 of each year. The annual rate of increase is calculated from the estimate.

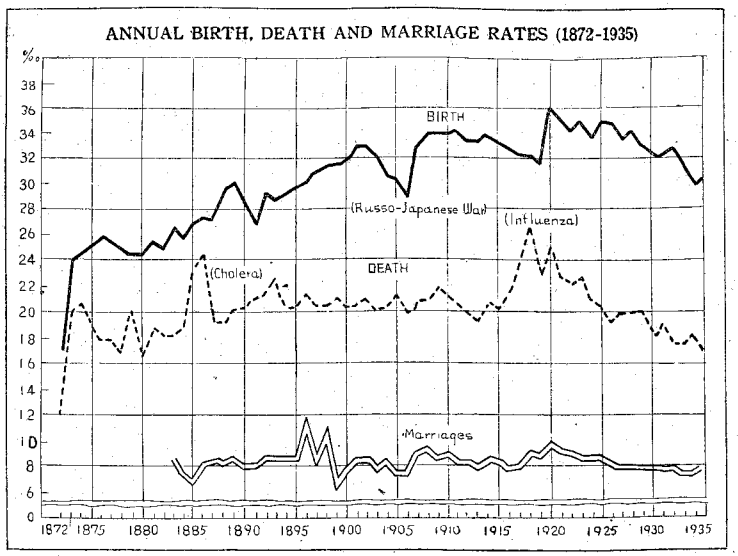
TABLE III. Births, Deaths, Natural Increases and Marriages Annual Average, 1874–1936

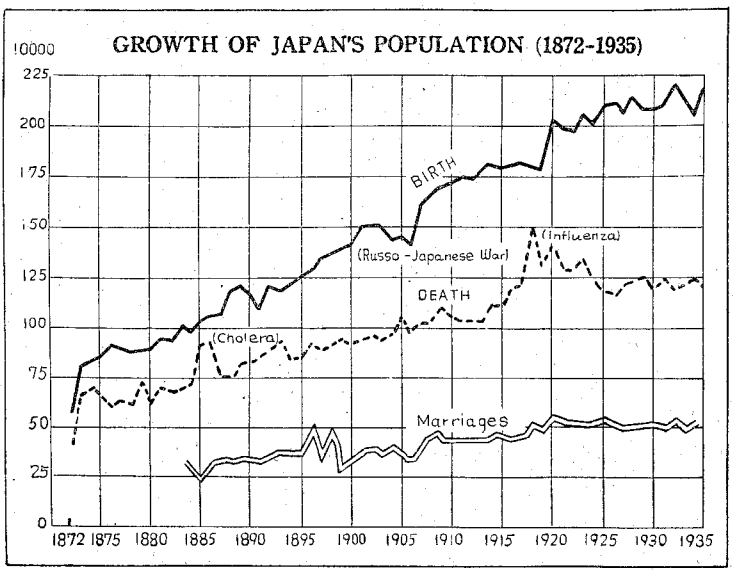
	Actual Numbers (In 1,000)				Rates (per 1,000 Inhabitants)			
Year	Marriages	Births	Deaths	Balance	Marriage rate	Birth rate	Death rate	Balance
1874–1878	—	874	637	237	—	25.3	18.4	6.9
1879–1883	—	925	670	254	—	25.2	18.3	6.9
1884–1888	305	1,056	807	248	7.93	27.4	20.9	6.5
1889–1893	389	1,165	869	303	9.57	28.6	21.2	7.5
1894–1898	413	1,288	875	412	9.68	30.2	20.5	9.7
1899–1903	357	1,461	931	530	7.87	32.2	20.5	11.7
1904–1908	399	1,512	992	520	8.24	31.2	20.5	10.7
1909–1913	434	1,729	1,052	677	8.45	33.7	20.5	13.4
1914–1918	456	1,803	1,215	588	8.07	32.6	22.0	10.6
1919–1923	514	1,961	1,322	639	9.03	34.4	23.0	11.2
1924–1928	505	2,077	1,215	862	8.34	34.3	20.1	14.2
1929–1933	500	2,114	1,209	905	7.68	32.4	18.5	13.9
1934–1936	540	2,112	1,209	903	7.80	30.5	17.5	13.0

Some caution will be required in reading these tables. Although the increase of population is shown by them fairly correctly, the figures of births and deaths cannot be taken as correct or nearly correct. At the face of statistics, births and deaths appear to have been smaller in earlier years in comparison with total population, and both were increasing as the country was being industrialized. But, really, that may not have been the case. It has been lately pointed out by Mr. Frumkin* that both the birth and death rates for the earlier part of the Meiji Period are so incredibly low, and that there must have been much defective registering in those days. And he draws from this observation an exceedingly interesting conclusion that the thesis of a marked rise in births and deaths should be altogether rejected, as the statistics simply show the gradual improvement in registering. In Japan, as in England and some other European countries, birth rate must have been formerly at least as high as in later year and death rate must have been always falling from a very high point. This, of course, requires a total reshaping of our diagram. We find it very difficult to contradict his argument. In view of the imperfect nature of the birth- and death-registering at present, we must naturally assume that the system worked with still more inaccuracy in by-gone days. And that is perhaps an agreed opinion of experts in this country, although they may not concede to an argument that the entire statistical evidences should be scrapped. Personally, I hold the opinion that a large number of births and deaths of infants passed without being registered. According to the mortality statistics in 1936, the deaths of infants under one year occupied 199.4% (245,000), those under five years 315.9% (388,000) of the total deaths roll numbering 1,230,000. The life table, computed upon the materials of 1926–1930, shows that, out of 1,000 babies born, 42.5 are lost in 15 days after birth; 56.5 in a month; 107.0 in six months; and

* G. Frumkin, Japan's Demographic Expansion in the light of statistical analysis. Sociological Review, Vol. XXX, No. 1, January, 1938.

140.1 in a year. If this is the fact in 1935, the infantile mortality must have been exceedingly high during the earlier





times and the number of infants lost in a short time after birth must have been very large. Under such conditions, the register of birth and death of a child may be both easily evaded, where police administration of burial permits* is loosely handled. And such evasion will effect a considerable omissions in statistics. I believe that this is the reason for a comparatively little error made by the Family Book statistics with regard to population increase, in spite of irregular registration of births and deaths in the earlier years. In short, my suggestion is that births in these years must have been much larger than the figures stated in the official statistics, but much of the deaths of infants also escaped from the notice of statisticians. Therefore, they were not much mistaken in the balance of births and deaths in later dates. It may be useful to state here that the birth and death rates appearing in the official statistics are even now a little lower than they actually are, owing to defective registering. The annual number of births and deaths put in ordinary statistics is the number of those cases which took place in a year and were registered in that year. But a number of births and deaths pass without being recorded in the year in which they happened, but are brought into Family Books in later years. For example, when the annual report for 1936 was made, the official statisticians made it clear that the registered births for that year numbered 2,101,000, but 70,000 births besides these should be estimated as having not been registered, which would bring the total to 2,172,000. The estimate for non-registered deaths was naturally much smaller than this and numbered 6,000. These estimates for non-registration are made on the calculation of belated registers, which occurred during the past thirty years, and of which details are published in the official report on the Dynamic Statistics of Population. Our calculation of corrected birth rates for recent years stand as follows in comparison to the official ones.

* The administration of burial permits was reorganized in October, 1884.

TABLE IV. Births and Birth Rate Corrected

(In 1,000)

Year	Births corrected	Births uncorrected	Birth rate corrected	Birth rate uncorrected
1920	2,088	2,025	37.2	36.2
1921	2,053	1,990	36.3	35.1
1922	2,038	1,969	36.0	34.2
1923	2,117	2,043	36.6	34.9
1924	2,068	1,998	35.3	33.8
1925	2,157	2,086	36.3	34.9
1926	2,175	2,104	36.1	34.8
1927	2,130	2,060	34.8	33.6
1928	2,206	2,135	35.5	34.4
1929	2,145	2,077	34.1	33.0
1930	2,154	2,085	33.7	32.4
1931	2,136	2,102	33.0	32.2
1932	2,257	2,182	34.4	32.9
1933	2,193	2,121	32.9	31.6
1934	2,112	2,043	33.9	30.0
1935	2,263	2,190	32.9	31.6
1936	2,101	About 2,172	30.9	29.9

THE CAUSES OF THE EXPANSION

We do not believe that the causes of that phenomenal growth of the European population during the nineteenth century have been sufficiently explained. So it is not yet possible to clarify the causes of the great change that took place of the Japanese population trend in this period. But we may say that the general opinion points to the forceful influence of the modern economic development on the increase of population, owing either to the rise of fertility or the fall of mortality. The Japanese of the Tokugawa Period probably were as fecund in physiological sense as they are today. Their number, which had been limited both by natural calamities and by social habits, found the way of expansion under the more favourable economic conditions due to the coming of new technique of production

and transportation. It was the opening of the country to foreign intercourse that wrought a vast change in our population movement. We find very interesting Prof. Gini's opinion* that the sudden change in the Japanese population movement has happened as a result of the national rejuvenation, caused by the abandonment of the caste system and the adoption of free circulation between the different strata of society. But we have no proof for a biological change that would have brought about higher fecundity in this country. If we have to dismiss with Mr. Frumkin the statistical evidence and deny the fact of a rise in birth rate during the Meiji Period, we must also deny Prof. Gini's theory. At the same time, we cannot disprove that a nation may become more or less fecund as the result of a fundamental transformation. I feel safer not to believe in this biological theory than to believe in it. What I want to insist is that a people must be able to bring up more children in an age when economic conditions have greatly improved. This is not to say that man will propagate in proportion to the supply of food, as Malthus did. But I conclude from personal observations that the Japanese peasantry, who made 78 per cent of the whole nation at the beginning of the New Regime, were progressively placed in a circumstance which enabled them to have a larger number of children. They have not become better-off enough to live with them until they reach maturity. But the younger generation could now go to towns and obtain employments there. Whether they became more fecund or not does not matter. The fact is that they were given means to bring up children born to them in a larger number than they used to, without damaging the living standard or at an improved standard. A large number of children perish even now, because of bad nourishment or want of medical treatment, as the mortality statistics show. But their lot was still worse seventy years ago, when many of them were lost before being born or

* Corrado Gini, the Birth and Revival of Nations, in "Population," Lectures at Harris Foundation, 1929.

sent to darkness deliberately.

FUTURE OF THE JAPANESE POPULATION

An interesting problem, which has a great practical importance, is the future trend of the Japanese population. Is it going to grow with the same rapidity as at present, or is it to follow the European example and stop growing at a time in the future. Of course, it is not easy to make a prophecy. But, the general trend must be found by observations of what happened in the past. It will be noticed in our diagram that there appeared certain new features in the population movement somewhere about 1920. In the earlier years, births and deaths have both been rising, if we follow the official statistics. The population increased in those years by growing numbers, because the increase in births was quicker than that in deaths. After 1920, the total population is still increasing by growing numbers. But this is not so much due to the increase in births as to the decrease in deaths. Annual births are rising only slowly while deaths are absolutely falling, in spite of the large increase of total population. The rate of natural increase is not rising as in the actual number, but it is still very high.

Births

The annual births during the last forty years were as follows:

TABLE V. Average Annual Births, 1895–1934

Average,	1895–99	1,323,000	Average,	1915–19	1,796,000
	1900–04	1,472,000		1920–24	2,005,000
	1905–09	1,563,000		1925–29	2,092,000
	1910–14	1,752,000		1930–34	2,107,000

The decade 1920–30 is the period in which girls born between 1890 and 1900 entered the child-bearing age-group. The decade 1890–1900 was, as is shown in the above table, just the period in which the annual births increased rapidly. Therefore, between 1920 and 1930, the number of potential mothers was

increasing rapidly. If young men and women married at the same age as they did in the foregoing decades and had as many children as before, the annual births of this decade ought to have shown a marked increase. But, in fact, the births stood with a little change at about two millions per year. Marriages did not increase in spite of the growth of adult population. The number of births per married woman was also falling. Thus, the growth of the child-bearing age-group and the decrease in fertility just offset each other.

It is not a new fact that the Japanese population has become less fertile. The refined birth-rate, i.e., the births per capita of women in the child-bearing age, changed as follows:

TABLE VI. Refined Birth Rate

Year	(A) Births per capita of women of 15–44	(B) Births per capita of women of 15–29
1898	0.146	0.250
1903	0.152	0.254
1908	0.160	0.278
1913	0.159	0.265
1918	0.152	0.294
1920	0.169	0.265
1925	0.165	0.277
1930	0.157	0.262

Here, we see the rate (A) reached a peak already in 1908 and was dropping in the two successive five-year periods, but jumped to another peak, which was higher than the former one in 1920, and then began to drop again. The rate for 1930 was at a level lower than the first peak. The fluctuations of the rate was probably due to the extraordinary boom, which occurred during the Great War and in the years immediately following it. During the years of the boom, the number of marriages rose, with the result of increasing births. It is also to be noted here that influenza epidemic brought the rate for 1918 to an exceptionally low point. And an abnormal increase in 1920 is said to be the result of registration of the hitherto

unrecorded births. But, on the whole, we cannot deny that the fertility of the nation has decidedly entered upon a stage of decline at about 1920. It has been argued by some scholars at a time, that the economic depression was keeping the number of marriages abnormally low in the years 1925 and 1930, so that we might expect to see another rise in fertility when the depression was over. But, in fact, the better years after 1932 did not show any noticeable increase in births, although marriages rose to an extent. The Japanese began to marry less frequently and to have smaller families in the same manner as the Western people had done before. The ancient family system, although it is firmly rooted in the people's life, does not seem to prevent birth rate from declining.

Deaths

On the other hand, the changes of deaths in recent years are also very important. The annual number of deaths absolutely declined, while the total population was increasing at the rate of one million every year. The death rate which stood at about 20% twenty years ago fell to 17% by 1935. But this fall in deaths does not mean that men and women of the country live much longer now than fifteen years ago, so that life premium may be reduced for that reason. The death rate for adult population declined only slightly. The drop in the general death rate is almost entirely due to the improvement in infantile mortality among children, yet it is still remarkably high in this country, as has been already stated in connection with the discussion of the population in the Meiji Period. We might give some more data. The specific death rate for infants under one year is 16%; for those between one and two years 4.8%; and those between two and three years 2.6%. Of all babies born, nearly one-fourth are lost before they are five years old. Thus, the proportion occupied by child mortality in the total death-roll comes to a little over one-third, as has been pointed out before. Therefore, even a little improvement

in infantile mortality would make a noticeable decline in the general death rate. As it happened in fact, such improvement was marked in the last twenty years. Here, also, the Japanese population movement is following the example of some European countries, thus:

TABLE VII. Infantile Mortality under One Year
(Three years' average)

Year	Japan	England	Germany
1870–72	—	144	—
1880–82	—	134	—
1890–92	—	141	—
1900–02	—	140	—
1905–07	—	—	189
1910–12	178	108	167
1915–17	171	—	146
1920–22	167	81	132
1925–27	140	74	101
1930–32	125	67	84

On the whole, we may conclude that the nation is now rearing less number of children in better conditons than in the past. The lower death rates among children are to an extent making good the decline of natural growth due to the decline of birth rate. The future growth of the population is to be decided between the expanding number of child-bearing age-group, on the one hand, and the decline of birth rate, which will be counterbalanced to an extent by the improvement in child mortality, on the other hand.

Reproduction Rate

By applying Dr. Kuczynski's new method for measuring population growth to the Japanese materials, we obtained the following result.*

* In calculating these rates, we used annual births including belated registers.

TABLE VIII. Reproduction Rate

Year	Gross rate	Net rate
1925	2.59	1.64
1930	2.37	1.57

The so-called reproduction rate is a statistical device to show a nation's capacity to reproduce the present population in the future, by combining certain figures relating to births and deaths. When net reproduction rate stands at 1.00, the population is just reproducing itself. In Japan's case, as it stands between 1.00 and 2.00, the population is now more than reproducing itself but it cannot double itself in a generation. But the reproduction rate of a nation itself changes, as its fertility and mortality do not remain the same. The reproducing capacity of the Japanese dropped from 1.64 to 1.57 in the five years, 1925–30. The growth of the child-bearing age-group and the improvements in death rate do not seem to offset the decline in fertility. Still, these rates are exceptionally high, when compared with the rates calculated for some other countries. For instance the net reproduction rate of England and Wales stood in 1933 at 0.73, that of France at 0.82, and that of Germany at 0.70. The only country, which surpasses Japan in this respect, is European Russia with 1.70, among the 19 countries mentioned in Dr. E. Charles' table, published in the London Economist, July 27, 1936.

An Estimate of the Future Population

Five years ago, when the result of the third national census was published, an estimate of the future Japanese population was made by the writer of this article. As it is unavoidable for all such attempts, a number of assumptions had to be allowed, which naturally makes the result of calculation somewhat unreal and provisional. Still it would not be without value, if we use it as a means of clarifying the nature of the so-called population problem of Japan. We assumed (1) that

the expansion of the child-bearing age-group and the decline in their fertility would offset each other and that, under this condition, the annual births would remain at 2,100,000 for the coming twenty years. We also assumed (2) that the death rate for each of the five-year age-groups, including those for children, would remain unchanged through the period. The third assumption was (3) that there would be no flow of migration either outward or inward. The estimate obtained under these assumptions is shown on the following page.

When the result of the national census of 1935 was published, our estimate of the total population was found wrong as a prophecy. The actual population in that year rose to 69,254,000, while our estimate was 68,107,000. The reason for this difference of over one million, of course, comes from the unreal nature of the assumptions. Firstly, the annual births have so far remained near an average of 2,100,000, as was assumed. But, probably, there were about 350,000 births, outside the official reports, owing to the defective registering. Secondly, the death rate made a drop from what had been used in calculation. That a considerable improvement took place during the last ten years is already clear. Besides, contrary to our assumptions that there would be no immigration or emigration, a large number of immigrants came from Chosen (Korea), and some emigration to Manchuria was realized during the period.

However, the estimate of the total population was not the only aim of our estimate. Rather, the most important part of it was the calculation of the "productive" or "working" population, or the number of men and women coming under the age-group between 15 and 60. This group, as will be seen from the table, was about 31 millions in 1920, increased to 33 millions in 1925, and to 36 millions in 1930; i.e., increased by 5 millions during the decade, 1920–30. As calculated in our estimate, the group is to reach 46 millions by 1950. This means that a tremendous number of ten millions are to be

TABLE IX. Estimate of the Future Population (In 1,000)

	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970
0- 4	7,457	8,264	9,044	9,078	9,078	9,078	9,078	9,078	9,078	9,078	9,078
5- 9	6,856	6,924	7,741	8,471	8,503	8,503	8,503	8,503	8,503	8,503	8,503
10-14	6,101	6,735	6,717	7,509	8,217	8,248	8,248	8,248	8,248	8,248	8,248
0-14	20,416	21,924	23,502	25,058	25,799	25,830	25,830	25,830	25,830	25,830	25,830
15-19	5,419	5,885	6,272	6,255	6,993	7,531	7,682	7,682	7,682	7,682	7,682
20-24	4,609	5,060	5,452	5,811	5,795	6,478	7,090	7,117	7,117	7,117	7,117
25-29	3,923	4,393	4,822	5,195	5,537	5,522	6,174	6,756	6,782	6,782	6,782
30-34	3,609	3,716	4,091	4,491	4,839	5,159	5,143	5,750	6,292	6,316	6,316
35-39	3,410	3,449	3,541	3,900	4,280	5,612	4,915	4,902	5,480	5,987	6,020
40-44	3,243	3,221	3,382	3,472	3,824	4,197	4,522	4,820	4,807	5,374	5,880
45-49	2,658	3,055	3,103	3,258	3,345	3,685	4,043	4,356	4,643	4,630	5,176
50-54	2,234	2,450	2,867	2,912	3,057	3,139	3,457	3,794	4,088	4,357	4,345
55-59	1,840	1,990	2,293	2,682	2,725	2,860	2,937	3,234	3,506	3,825	4,077
15-59	30,949	33,223	35,827	37,980	40,399	43,306	45,966	48,414	50,399	52,083	53,399
60-64	1,655	1,568	1,692	1,949	2,280	2,316	2,432	2,497	2,750	2,981	3,252
65-69	1,312	1,294	1,265	1,365	1,572	1,839	1,869	1,962	2,014	2,218	2,404
70-74	896	919	888	868	936	1,079	1,262	1,282	1,346	1,382	1,522
75-79	482	523	541	522	510	551	635	742	754	792	813
Over 80	250	284	351	363	350	342	370	426	498	506	531
Over 60	4,597	4,589	4,737	5,068	5,652	6,130	6,568	6,911	7,364	7,880	8,524
Total	55,963	59,736	64,067	68,107	71,850	75,267	78,364	81,165	83,594	85,794	87,753
Increase		3,773	4,331	4,040	3,743	3,417	2,097	2,800	2,439	2,200	1,959
Rate of increase		.0674	.0725	.0630	.0549	.0475	.0411	.0357	.0300	.0263	.0228

added to the army of workers, male and female, in the coming twenty years. Of these, a large portion of women are to work as housewives, but the others will go to seek employments in field, workshops, factories, stores, offices, etc. Altogether, about 250,000 per year must go to earn money for their family, either as workers in larger establishments or as small independent farmers and traders. They will become unemployed or under-employed, unless the national industry as a whole expand in the same proportion as their number. The expected growth of the productive age-group in the coming decades is the necessary outcome of the high birth rate in the past. They are already existing now as the child population of the country; and, therefore, it should not be technically so difficult to make an estimate of their number, as that of the total population.

We may refer to the school statistics as a means to explaining this movement in the population. The number of children entering primary schools made a very rapid increase between 1925 and 1927, with the consequent increase in the number of them leaving schools in 1931–1933. This is due to the great increase in annual births about 1920, as children are sent to schools at the age of six and a six-year course of learning is prescribed by law. At present, about 1,400,000 boys and girls finish their compulsory education every year. Their entrance to the labour market is only being stemmed to an extent by the growing practice of attending higher-grade primary schools and other higher educational institutions.

TABLE X. Primary School Children (In 1,000)

School year	Ordinary primary school				Higher primary school			
	Entered		Left		Entered		Left	
1920	(a)	1,408		1,102	(a)	570		340
1921	(b)	1,422		1,155	(b)	605	(a)	400
1922	(c)	1,404		1,178	(c)	639	(b)	421
1923	(d)	1,489		1,216	(d)	673	(c)	448
1924	(e)	1,363		1,221	(e)	706	(d)	473
1925	(f)	1,325	(a)	1,268	(f)	706	(e)	499

1926	(g)	1,448	(b)	1,288	(g)	737	(f)	514
1927	(h)	1,553	(c)	1,285	(h)	759	(g)	545
1928	(i)	1,544	(d)	1,276	(i)	760	(h)	570
1929		1,559	(e)	1,261	(j)	753	(i)	575
1930		1,600	(f)	1,232	(k)	750	(j)	581
1931		1,604	(g)	1,358	(l)	736	(k)	581
1932		1,694	(h)	1,463	(m)	827	(l)	584
1933		1,711	(i)	1,462		900	(m)	662

Notes: The school year begins on April 1st and ends on March 31st of the following year. Therefore, children, who entered at the beginning of the school year 1920, leave at the end of the school year 1925 or March, 1926.

MIGRATION FROM VILLAGES TO CITIES

The second outstanding features of the Japanese population movement is the continuous migration from rural to urban parts of the country. This movement has been proceeding ever since this country adopted the Western methods of production and transportation. A new habit developed among the young generation of farming communities to the effect that all sons and daughters, except those who succeed to parents' places, leave villages to obtain employments in towns and cities. Usually, the eldest son would stay at home and get married, as it is his duty to look after the aged members of his family, as well as to tend the ancestral altars. But younger brothers go to cities in order to be trained in some industrial or commercial occupations, and their sisters to be hired in cotton mills, silk mills or in domestic services.

The latest census of October 1, 1935, revealed that a marvellous expansion of cities took place in the five-year period between this and previous censuses.

TABLE XI. Increase of Population in the Urban Prefectures (1930–35)

Tokyo	960,000	20.0%
Kanagawa	220,000	4.6
Osaka	757,000	15.8

Hyogo	276,000	5.8
Kyoto	149,000	3.1
Aichi	295,000	6.2
Fukuoka	226,000	4.7
		60.2%
Nagano	-3,000	
Kochi	-3,000	
Saga	-5,000	
Whole country	4,801,000	100%

Out of the increase in the total populatian of 4,801,000, which was recorded in the period, 20% was absorbed by Tokyo Prefecture alone, 16% by Osaka, and 24% by the five other prefectures, making a total of 60% for these seven prefectures. On the other hand, almost all the agricultural prefectures showed only a small increase, and in some of them even an absolute decrease, notwithstanding the fact that they had a higher birth rate than in the urban districts. This shows that the Japanese countryside is not being depopulated, but a large part of the natural increase of its inhabitants is being absorbed by cities, especially by large cities. There are two centres of population in the country, one in the east, including Tokyo and Yokohama, and the other in the west, including Osaka, Kobe and Kyoto. About half of the additional population went to expand these two centres, each taking 25%. The population of Tokyo City is now 5,875,000 and that of Osaka is put at 2,989,000.

This process of urbanization had a profound influence on the age composition of the urban and the rural population, with far-reaching social and economic effects, one having an abnormally large proportion of the younger generation of workers, and the other including an abnormally large percentage of children and old people. On the other hand, the size of large cities is becoming somewhat unmanageable, and social ties are loosening there, as the rapid growth was only possible by swelling the number of people coming in from different

parts of the country to 60% of the inhabitants. However, the process was going on for many decades, and that was the only way, by which the population problem was solved. The extent of the flow fluctuated with the condition of business. When the industry was expanding, the migration was specially large and, as its result, the living standard in villages was being improved; while, during the general depression, it went slowly and even a reverse current was seen in some special cases. When the farming class was hard hit by the fall in prices of both rice and silk cocoons at the time of the world depression in 1930, the wage level in towns could not rise for some years, although the export industries were expanding and the flow of migration was quickened.

OCCUPATIONAL CHANGES

The migration of the population from rural to urban districts, of course, means changes in occupation for these people. We have no reliable statistics of occupations for the whole nation until the first modern census was taken in 1920. And since that year, the occupation census of 1930 is the only material of the kind. Still we are now able to compare the results of these two censuses, and see the extent of industrialization which has taken place between the two dates, or, in other words, during the decade that immediately followed the end of the Great War.

In 1930, the total number of persons engaged in all occupations amounted to 29,299,000, of which 18,739,000 were male and 10,560,000 female. Agriculture comes first with 14,081,000, or 48% of the total number. Fishery, which may be counted as a rural occupation, employed 2%. Industry and mining employed 21% between them, commerce and transportation 20%, public services and liberal professions 7%, and domestic service 3%. Thus, it must be said that Japan is still a predominantly agricultural country, nearly half of her inhabitants being supported by farming. In fact, the entire structure

of national economy is still based upon the old-style households of peasantry, which numbered about 5,600,000. But, when we look into the development of things and compare the condition in 1930 with that in 1920, the comparative importance of agriculture is found to be declining. The number engaged in it was 14,081,000 in 1930 and 14,127,000 in 1920. The farming population did not increase at all, while the total population increased by 8,100,000, and the number engaged in all occupations rose by 2,038,000. Thus the percentage of agriculture stood at 51% in 1920, but fell to 48% in 1930. This means that agricultural families were unable to support the natural increase of their members. All their sons and daughters, except those who succeeded to their parents' places, left farms to obtain employment in other occupations.

Such movement from agriculture to urban occupations seems to have been continuing for generations. The occupations of the people, reported in 1872, includes 14,787,000 (78%) employed in agriculture, out of the total of 18,736,000. The number of farmers 58 years ago was as large as now, whatever difference in the technique of counting may there be between the two reports. Again, according to other reports, the number of farming households in 1886 was 5,518,000 (71%) and the number reported every year from 1903 to 1935 shows the increase of only 300,000 during these 32 years, the percentage falling from 64% to 48%. Thus it will be seen that the population engaged in urban occupations expanded all the time since the Meiji Restoration by recruiting workers from the class of peasantry, which remained about the same size.

The numbers engaged in all the other occupations increased between 1920 and 1930. During this decade, industry gained by about half a million or about 10%, and commerce by one million and a half or 50%. The increase in commerce, which includes, in addition to the wholesale and retail of merchandise, the finance and insurance business, hotels, restaurants, bath houses, theatrical and cinema entertainments, was exceptionally

large in contrast with the conditions in other occupations. This fact caused some alarm among many observers, as commercial occupations are often considered unproductive. And it is certain that a large part of the commercial business, especially shop-keeping, was not in a satisfactory condition between the two censuses. Many people entered those trades, not because they were profitable but simply because they did not require as much special training as demanded in other occupations. But, when the process of industrialization and urbanization is going on, it should be taken for granted that distributive services should expand. Besides, mechanization and rationalization can be carried out to less degree in commerce than in industry, mining and transportation. It should also be noted that there were changes made in the method of classification, which would make the increase of commerce appear too large. Some occupations classified as industry in 1920 were removed to the commerce group in 1930. There are vast numbers of shops crowding cities and towns in Japan, which still bear the features of the old-fashioned handicraft system; small masters working at materials with the help of a few apprentice boys, and selling their products directly to consumers living in the vicinity. Small traders, who supply such common goods of every day use, such as rice, cakes, tofu (bean curd), etc., are half commercial and half industrial, as they must apply some kind of processing to the materials before distributing them to consumers. Thus, the alterations in the method of classification relating to these trades caused some discrepancies in the results of the census.

The total number engaged in industry increased by 410,000 from 5,296,000 in 1920 to 5,707,000 in 1930. But the number of female workers absolutely decreased by 134,000, and it was only outnumbered by an increase of male workers reaching 544,000. Industry as classified in the census includes sixteen subdivisions, ranging from large-scale modern industries such as iron and steel making, shipbuilding, and cotton mills to old-fashioned

handicrafts of diverse kinds. Spinning and weaving industries employ 25% of all the workers, building trades 16%, food and drinks 8%, tailoring, etc. 8%, wood and bamboo works 11%, metal works 60%, engineering 4%, ships and vehicles 3%, etc. The outstanding features are the predominant part played by textile groups and the comparatively unimportant position of metal and engineering industries. But if we compare the figures for 1920 and those for 1930, it is seen that some of the industries absorb larger numbers than others and there are trades in which employment is decreasing, irrespective of their present proportions. Generally speaking, changes are clearly reflected in the advance of the modern and the retreat of the old trades. For example, engineering, shipbuilding, making of vehicles and chemical industries each occupied a large share in the increase, while wood and bamboo working and hide working showed remarkable decreases. A notable fact is the decrease in the number of female workers in spinning and weaving, in spite of the enormous expansion that has been made by that line of industry in the ten-year period. The production index for spinning, with 1919 as the base year, jumped from 91 in 1920 to 162 in 1930; and that for weaving from 100 in 1920 to 150 in 1930. But the number of females in these industries dropped by 1.8%. This is clearly due to the technical improvements achieved. The transformation from hand-loom weaving to electric power-loom had been largely carried out in these years. Spinning mills also had undergone a notable technical improvement, side by side with the extention of factory legislations, including the abolition of night work and the raising of the minimum age, although the so-called rationalization movement came in the years following the census. The decrease of women and children and the increase of men workers, accompanied by some sort of mechanization, were the features in many industries, and this fact is clearly shown in the census reports.