

PROSPECTS FOR POPULATION GROWTH IN THE NEAR EAST

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CHARACTERIZATION OF THE POPULATION

THIS paper will deal with prospects for population growth, as far as they can be derived from available information, in Turkey, Iraq, Iran, Syria, Palestine, Trans-Jordan, and Arabia. These countries cover an area of about 5.7 million square kilometers. That is more than the 5.4 million square kilometers covered by Europe without European Russia. Forty-seven per cent belong to Arabia, 29 to Iran, and only 24 to Turkey, Iraq, Syria, Palestine, and Trans-Jordan.

The total population living in this region that is greater than the area of Europe amounts to about 50 million, or to only one-eighth of the population of Europe without Russia. More than half live in Turkey, Iraq, Syria, Palestine, and Trans-Jordan, 30 per cent in Iran, and less than 20 per cent in the countries of Arabia. The order of the countries according to population size in the middle 1930's was as follows: Turkey, 17.6 million; Iran, 15 million; Saudi Arabia, 4.5 million; Iraq, 4.2 million; Syria, 3.6 million; Yemen, 1.6 million; Palestine, 1.3 million; Oman, 800,000; Aden Protectorate, 600,000; Trans-Jordan, 300,000; and the rest with about 100,000 or less.

The geographical differentiation according to density, implicit in the foregoing data, is shown particularly in Figure 1, where different degrees of density, that is, differences in the number of people per square kilometer, are distinguished. The darker areas indicate higher and the lighter areas lower density. On the whole, the density becomes lower from west to east and from north to south; it is lower in the south than in the east.

¹ From the Office of Population Research, Princeton University.

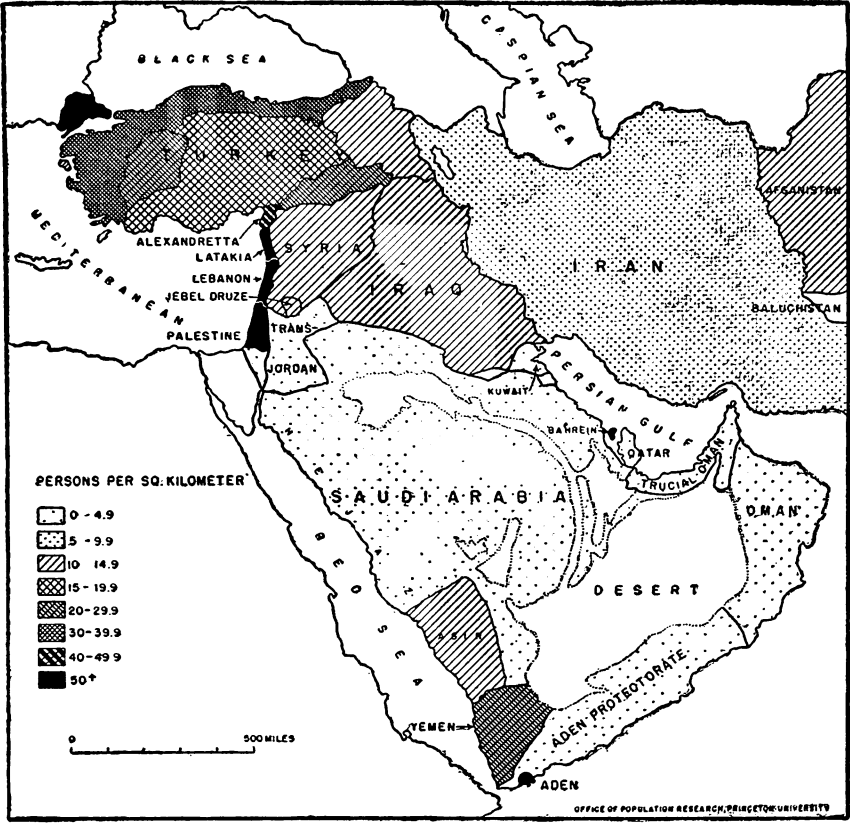


Fig. 1. Density of population.

The average density for the whole area is about 9 persons per square kilometer, but it is evident that an average figure has little meaning in this region where the density shows great variation. The density decreases from about 59 in European Turkey and 30-40 in the provinces of the Aegean, Marmara, and Black Sea Coast, to 20-30 in West Anatolia, 15-20 in Central Anatolia and the Turkish provinces of the Mediterranean Sea Coast, 10-15 in East Anatolia, Syria, and Iraq, around 9 in Iran, and under 5 in Beersheba in Palestine, Trans-Jordan, Saudi Arabia without Asir, Aden Protectorate, Oman, Trucial Coast, Qatar, and Kuwait.

There are, however, two exceptions from the general rule of a

decrease in density from northwest to southeast. The first, and more significant, is found in Northern Palestine, which in 1931 had a density of 72.3. Around 1935-1938, Lebanon had a density of 101, Latakia 62, Alexandretta 46, and Southeast Anatolia 22. Although density by subdivision can not be plotted for Syria and Iraq, because information on area is not available, the population data show that the main bulk of the Syrian population is settled in the western section of the country and that the settlement of the Iraqi population follows the Euphrates and Tigris rivers in a band between Southeast Anatolia and the Persian Gulf. The second exception from the general direction of geographical density differentiation is found in Southwestern Arabia — in Yemen and Asir. Here the coastal highlands cover a larger area than in the rest of Arabia and provide comparatively good climatic conditions and cultivable land. They are in the reach of the monsoon rains and Yemen is also favored by heavy fogs in the spring and early summer. The region can be compared in many respects with the Black Sea Coast in Turkey.

One characteristic to be found in Near Eastern populations, nomadism, is closely related to density and also has significant demographic implications. The number of nomads can be estimated at about 12 per cent of the total population of the region. But there are no nomads in Turkey with the exception of her eastern sections, and none in Alexandretta, Lebanon, and Latakia. There are less than 5 per cent in East and Southeast Anatolia, Northern Palestine, and Ajlam in Trans-Jordan; there are about average or less than average proportions in the Mosul and Bagdad sections of Iraq, Syria, Trucial Coast, and Yemen. On the other hand, there are 15-25 per cent in Iran, Qatar, Oman, Aden Protectorate, and Jebel Druze; and more than 25 per cent in Basra (Iraq), Kuwait, Hasa, Nejd, almost all sections of Trans-Jordan, Hejaz, and Beersheba in Palestine. In Hejaz and Ma'an almost 80 per cent of the total population are nomadic and in Beersheba even 94 per cent.

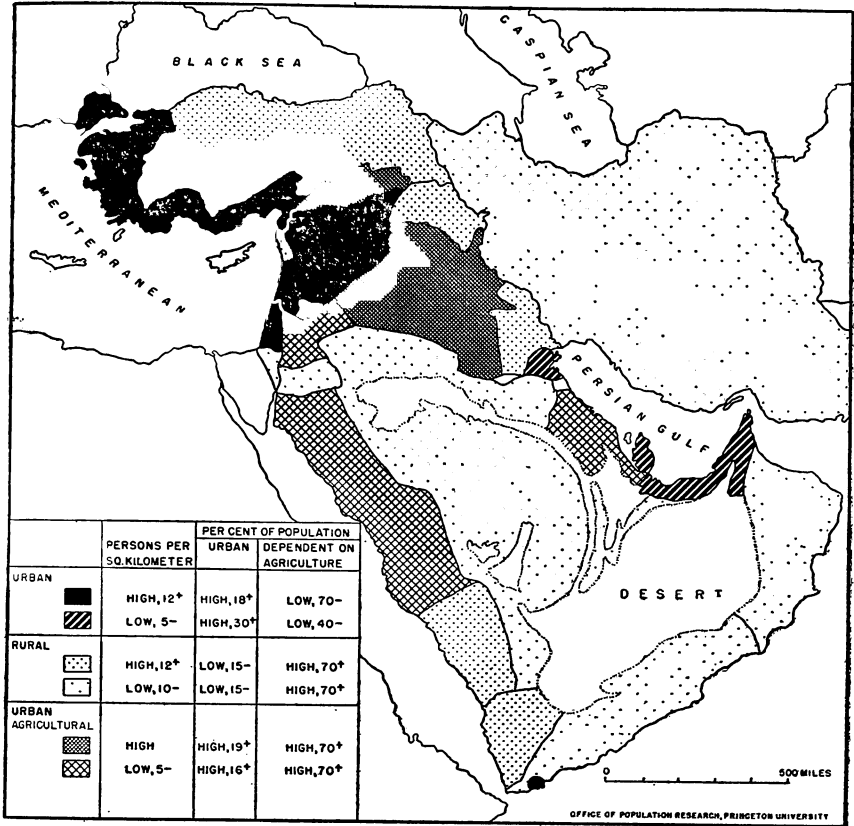


Fig. 2. Population types: urban, rural, and urban-agricultural.

Three population types can be distinguished in the Near East on the basis of the degree of urbanization and dependency on agriculture. They can be called urban, urban-agricultural, and rural. The first type comprises all countries in which less than 70 per cent of the total population are dependent on agriculture. In all of these countries the proportions of the population living in cities of 10,000 and more inhabitants are larger than the average for the region as a whole. In the entire area the city population amounts to about 16 per cent of the total. The urban-agricultural type includes all regions in which agricultural dependency is higher than 70 per cent but in which the city population exceeds the average. The rural type,

finally, is represented by countries with an agricultural dependency higher than 70 and with smaller proportions of city population than the average.

The geographical distribution of these three types is shown in Figure 2, where each of the three types is distinguished as between high and low population densities. The urban type can be mainly identified with the Mediterranean population of the region. It is also found on the Persian Gulf, especially in those sections where pearl fishing is an important occupation, and oil production is developing. The urban-agricultural type is found where areas of low density border areas of high density and where central Arabia finds its direct outlets to the sea. In this type the distinction between urban and rural modes of life is not so sharp as in the first type. Cities are less urban and more rural than in the former case and show up on the map as the urbanized sections of the low-density area, which is at the same time the area of nomadism.

THE DETERMINANTS OF GROWTH

Types of Data Available. Very little is known about the determinants of growth of the Near Eastern populations: that is, their birth and death rates and their natural increase. Reliable birth and death registration has existed for the settled population by religious groups in Palestine since 1926. Fairly reliable death registration exists for twenty-two cities in Turkey. Births and deaths are recorded in three cities of Iraq; since the data for deaths are pretty reliable these are especially helpful in estimating the type of death rate in Iraq. The registered births and deaths in Trans-Jordan place the vital rates of the population sector to which they relate in a range of high natural increase.

Under these circumstances birth and death rates had to be estimated by using all available information on the population structure. Census data that could be used or corrected for use give age

distributions for fifty-seven provinces in Turkey (1935), and the distribution of children under 13 and adults over 13 is given by sex in two good samples² for various population types of low-density areas, that is for urban, settled agricultural, semi-nomadic, and pacified nomadic groups. Sex distribution is given for the Turkish population, for Iraq, and for the population types in low-density areas, besides that for Palestine.

In principle, birth rates and death rates were obtained by utilizing all existing information concerning the relation of age-sex composition and the degree of urbanization of the population to components of their vital rates. Much of the material was built up in stages, so that estimated rates were in turn used in the estimation of additional rates. The whole was checked for agreement with such observed values as were available and for internal consistency at each stage. In building up the various stages of estimated vital rates, the principal method used was that of fitting regression lines on data available. For example, regression lines were fitted to fertility rates and death rates on the one hand and proportions of different age groups on the other. Basic data for the regression lines were secured from European, Asiatic, and African experience.

It would require a long paper of its own to give full explanation and evaluation of the whole procedure.³ It was carried through as

² District of Gishn and Beersheba.

³ Birth rates were computed for Turkey and her subsections from fertility rates estimated from the proportions of children under 1 and 2-4 per females in childbearing ages. Death rates were computed from age specific death rates estimated from fertility rates, estimated infant mortality rates, and age specific death rates for females. The level of death rates was checked against the recorded death rates for twenty-two cities in comparison with estimated birth rates for cities, and the natural increase was checked against the growth of the corrected populations from 1927 to 1935.

Birth rates for the various population types of low-density areas were computed from fertility rates estimated from proportions between children and women; death rates for the same types were estimated from proportions between children and adults. Birth and death rates for the countries of low-density areas were estimated from the birth and death rates of the various population types weighted according to the composition of the total populations. For the birth rates for Trans-Jordan geographical interpolation was necessary.

Birth rates for the settled population in Iraq were estimated from the sex ratios and the degree of urbanization. Death rates were estimated from birth rates and checked against the recorded death rates for the three cities.

carefully as possible. However, it should always be kept in mind that the estimations of birth and death rates are based on generalizations of a wide experience, that the estimates do not represent real vital rates, but are vital rates that agree in a general way, and in some cases more closely than in others, with proportions between various elements of the population structure and the relative size of elements of the population structure. Yet vital rates of this nature are the only basic tools that can be made available for forming some conception of the prospects for growth in populations for which no births and deaths are reliably recorded and for which no reliable total population figures for several consecutive census dates are available.

Critique of General Validity of Estimated Birth Rates. The birth rates obtained for the Near Eastern countries range from 27 for European Turkey and 37 for the Aegean Sea Coast area to between 60 and 70 in the low-density area of Arabia. The death rates range from 14 and 22 to 45 and can be assumed to be over 50 where the proportions of unpacified nomads are high. These are high rates, especially as far as the birth rates are concerned. Can they stand the challenge of criticism?

It has been noted that fertility rates for the Turkish provinces and for the various population types in the low-density areas were estimated by the application of child-woman ratios to a regression of such ratios on general fertility rates obtained from the experience of many areas. Had the child-woman ratios been used directly as indices of fertility, the differences in fertility would have been minimized because such ratios neglect infant and child mortality, which varies directly with fertility. Use of the regression permits the effect of this positive association to be reflected in the estimated general

Finally, birth rates and death rates for Syria and birth rates for Iran were obtained through geographic interpolation having regard to the degree of urbanization, and in the case of Syria to the religious composition of the population. The birth rates for parts of Syria were appraised in the light of the natural increase indicated in registration data. Death rates for Iran were estimated from birth rates. The natural increase for Syria was checked against the change of the total population.

fertility rate. That this procedure is justified in the case of Turkey is supported by the experience for twenty-two cities. Such direct evidence is not available for the low-density areas. But it is very unlikely that the infant and child death rates in such areas are higher than those implicit in the general regression lines for fertility rates and ratios of children to women. There is no reason to assume that they are higher than in the backward areas of Turkey. But what is more important is that in those areas where infant mortality rates are especially high, such as the regions of Central Africa and the Guinea Coast, no such high ratios of children to women are observed as in the backward Moslem populations of the Near East. In the first place fewer children are born and more young children die off. Where many children are found, the probability is high that the general health conditions are not exceptionally bad.

On the other hand, it is equally unlikely that the infant and child death rates in backward Moslem populations are essentially lower than those implicit in the general regression lines. The population group in which this really happens is that of the Moslems in Palestine. But they enjoy exceptionally good health services. Besides that, the fertility rates estimated for them from the general regression lines are not very much lower than the observed ones, so that the birth rates for the population types of low-density areas still would approach 60 per 1,000 inhabitants even if health conditions were exceptionally good.

The question arises as to whether the ratios of children to women in the two sample populations of low-density areas can be regarded as typical for backward Moslem populations. That they are probably typical is again supported by experience in Africa, where we find at least majorities of backward Moslem populations in Somaliland, sections of Kenya, Anglo-Egyptian Sudan, French Niger, French Sudan, and French Mauritania. Birth rates of at least 54 and 59 can be directly traced in the cities of Berbera and Hargeisa in British Somaliland. The ratios of children to 100 women in pre-

ponderantly non-Moslem and preponderantly Moslem populations compare as follows:

<i>Area</i>	<i>Preponderantly Non-Moslem Population</i>	<i>Area</i>	<i>Preponderantly Moslem Population</i>
Kenya	127 (children under 15)	Kenya	160 (children under 13)
Northern Uganda	Below 100 (children under 18)	Anglo-Egyptian Sudan	144 (children under 14)
Northern Nigeria	105 (children under 15)	French Niger	121 (children under 15)
Ivory-Coast	79 (children under 10)		
Mauritania, Senegal Section	73 (children under 10)	Mauritania, Sudan Section	107 (children under 10)

More direct evidence on the high fertility of the population of Arabia can be found in the ratios of children to women among Arab migrants outside the Near East — in the East Indies, in Uganda, Tanganyika, and Basutoland. For these groups fairly reliable records on age distributions are available, and among them high fertility rates are found. The ratios of children to women among these Arab migrants are as high as in the sample populations studied, where they range from 160 to 200 for children under 13 per 100 women 13 and over.

Pattern of Fertility and Natural Increase in the Near East. Turning back to the Near East and considering the sociological and geographical differentiation of the estimated birth rates, we find the low birth rates — and in the Near East we consider as low those rates below 50 — in European Turkey, the provinces of the Aegean and Mediterranean Sea Coast, West Anatolia, Latakia, Lebanon, Palestine without Beersheba, and very likely in Kuwait. That means we find them mainly in the urban type of high-density areas. Urban-rural differentiation, however, can also be traced as far as the urban-

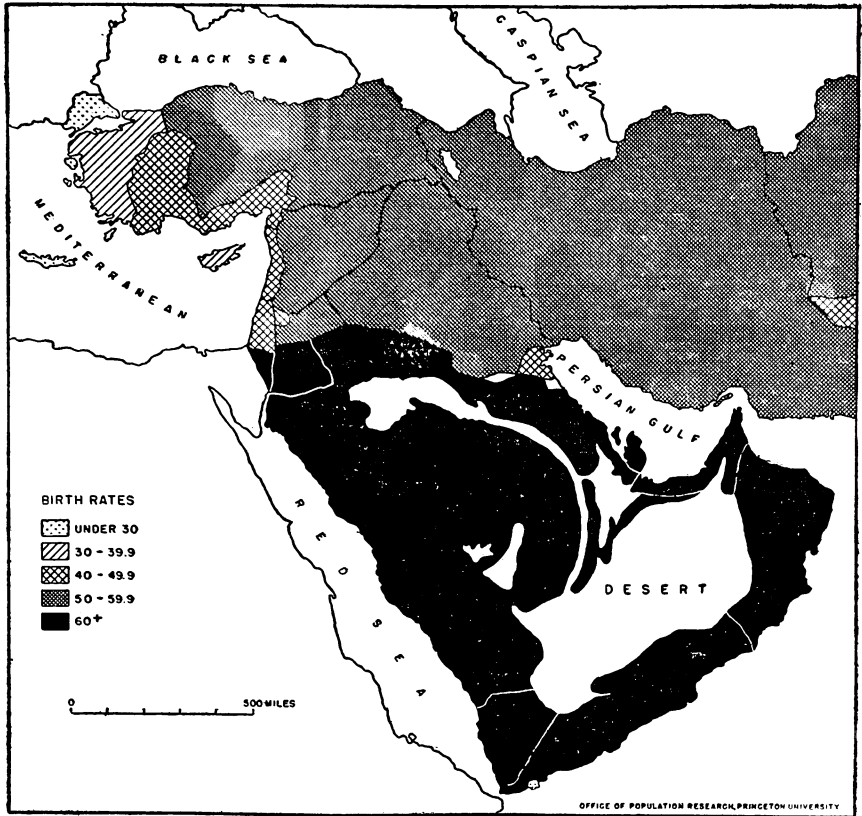


Fig. 3. Estimated birth rates by country, circa 1935.

agricultural type is concerned. Estimated birth rates of 55 per 1,000 population for Southeast Anatolia, 52 for the Bagdad region of Iraq, and 51 for Belqa in Trans-Jordan are lower than birth rates of around 60 estimated for the eastern Black Sea provinces and East Anatolia, and 58-59 for Mosul and Basra. In particular they are lower than the birth rates of the rural types of low-density areas, which have been estimated at over 60.

Also of significance is the geographical pattern of the birth rates. This is shown in Figure 3, where the shading becomes darker with increasing birth rates. There is again an apparent west-east and north-south direction. Within the high-rate areas the estimated rates are from west to east: around 50 per 1,000 population in the western

provinces of the Black Sea Coast and Central Anatolia, 54 in Southeast Anatolia, 55 in the State of Syria and in Iraq, and 53-58 in Iran.

Considering the general level of birth rates in the Near East, it is not surprising that the natural increase is high everywhere in years of normal health conditions such as those to which the general relationships of data expressed in the regression lines refer. The natural increase is between 12 and 17 per 1,000 population in most of the regions. In Palestine, however, it was 25 in 1931, owing to exceptional health conditions created by strong European influences, and it must have been around 18 or 19 in Syria, Latakia, and Lebanon. It is probably over 17 in the settled and pacified nomadic populations of low-density areas and hence especially in Beersheba and the Arabian Sea Coast region from Yemen to Qatar. On the other hand a natural increase of only about 12 has been computed for the Turkish provinces of the Mediterranean Sea Coast region. It is probably lower than 12 in sections of Trans-Jordan and in Hejaz, where the number of nomads in proportion to the population is very high.

THE PROSPECTS FOR GROWTH

Generally speaking, the potentialities of population growth are higher in countries with high vital rates than in countries with low vital rates. High birth rates provide a larger and longer chance for future high natural increase than do low birth rates. The real future growth, however, depends on the eventual actual development of the natural increase rates. Thus the prospects for population growth are in fact the prospects for the size of the future natural increase rates.

The problem of growth among populations as backward as are those in the areas of low density is further complicated by the fact that growth over a period is not identical with natural increase in years of normal health conditions, even if migration is ignored. These backward populations have to pay an additional toll to epidemics. Hence, their actual growth is probably lower than the

natural increase rates would indicate. Through better control of epidemics, therefore, they would seem to have a chance of larger increase in the future than at present or in the past. Another factor favoring rapid growth is that the populations in the areas of low density have begun to pacify and settle their nomads. After a period of transition, this process usually results in lower death rates for this sector of the population. But whatever their chances of more rapid increase in the near future may be, all possibilities of population growth are open to them if a long-range view is taken: they have before them the whole cycle of growth that civilized populations have already passed through.

Turkey comprises the major portion of the area of high density with a degree of urbanization about equal to the average for the entire region. For Turkey more specific attempts have been made to appraise the prospects of population growth. The probable future trend of birth rates in Turkey was determined on the basis of past trends in other high birth rate countries. The experiences of such groups as the Moslems and Christians in Palestine and of such countries as European Russia, Bulgaria, Roumania, Yugoslavia, Hungary, Italy, and Lithuania were aggregated to provide an insight into how rapidly birth rates have moved in the past from levels as high as those in Turkey today. By seeing how past trends have behaved, we can determine the way in which Turkey's rates are likely to behave in the future. From a general regression line between birth and death rates the natural increase rates corresponding to different levels of birth rates have been estimated. The projection of the population of 1935 by this means is shown by the dotted line curve of Figure 4. As a check on this projection, a second projection was made on the basis of a symmetrical growth curve, using the population figures of Cuinet for 1890, the official estimates for 1915, and the corrected census figures for 1927 and 1935. It was necessary to overcome the special difficulty created by the fact that population growth was interrupted during the war period 1915 to 1922. Since

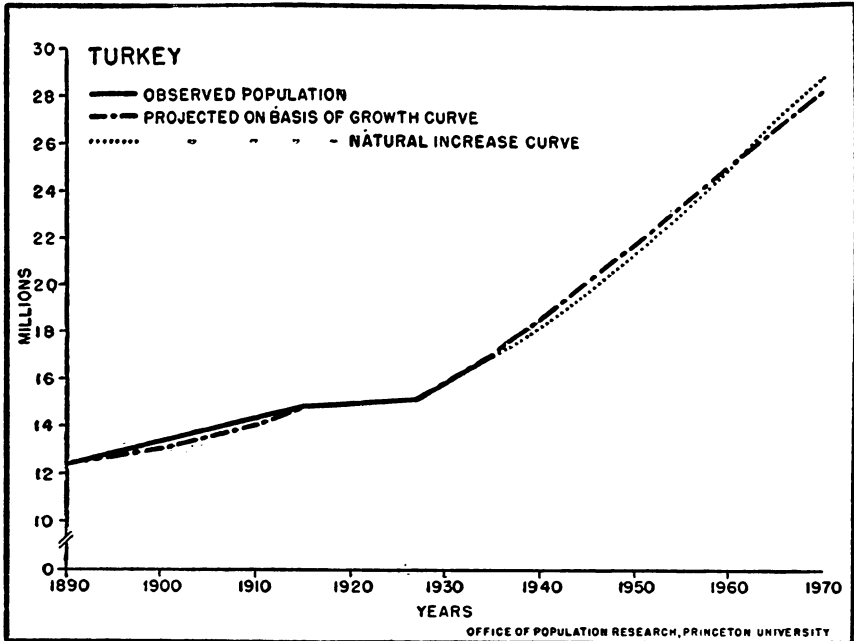


Fig. 4. Population growth in Turkey, 1890-1935, and projected population, 1935-1970.

there are strong indications that the trend of growth before 1915 was resumed after the war, the original growth curve was fitted so that the growth rate 1927 to 1935 represents the uninterrupted continuation of the growth rate from 1890 to 1915. By using the growth rates of this curve beyond 1935, a projection of the 1935 population was made. The result is shown in the second curve of the graph. On the whole, it agrees with the other curve, although it might be said that it represents more the over-all trend than the subcycles of the growing population.

If the projections are at all indicative of the probable future population growth, the population of Turkey in 1970 would be about 70 per cent larger than it was in 1935. Two reservations, however, have to be made. As far as the projection on the basis of natural increase is concerned, it is not certain that the decline of the birth rate will actually assume the same speed as has been experienced by backward populations of Europe. If it should be faster, then the

curve will become shorter and lower. On the other hand, no age-specific fertility and death rates were used, and no allowance was made as to future age composition. The population in 1940, even after correction of the census figures, was probably somewhat lower than could have been expected on the basis of the natural increase curve, owing to a deficit of women in early childbearing ages. This loss, however, is likely to be counterbalanced in a later period when the death rates may be comparatively low because of small numbers, particularly of men, in older age groups.

The prospects of population growth in Iran and Iraq are somewhat different from those in Turkey. Their position is between that of the areas of low density and that of Turkey. They actually have begun to improve their health conditions, and especially in Iraq a vast program of settlement of nomads is under way. They will not grow so fast as Turkey in the near future. On the assumption, however, that they continue the process of modernization, they will soon enter the growth cycle that Turkey is now experiencing.

Another type of population growth is represented by Palestine, a country of high urbanization and density. The two religious groups, Moslems and Christians, are considered separately. The Moslems, like the Christians, have extraordinarily low death rates without having modernized their ways of life to the degree that would correspond to such low death rates. They, therefore, still have relatively high birth rates. Rita Hinden has projected the future size of the Moslem population on the assumption that the true rate of natural increase in 1931 would prevail. Her projection, as presented in Figure 5, results in a population of 1.8 million in 1970 as against about 760 thousand in 1931 and 826 thousand in 1935. A projection, based on an asymmetrical growth curve and fitted to the real population figures between 1933 and 1940, results, however, in a somewhat different conception of the future population. It is represented by the second curve for the Palestine Moslems in Figure 5. According to this projection the Moslems are entering a period of

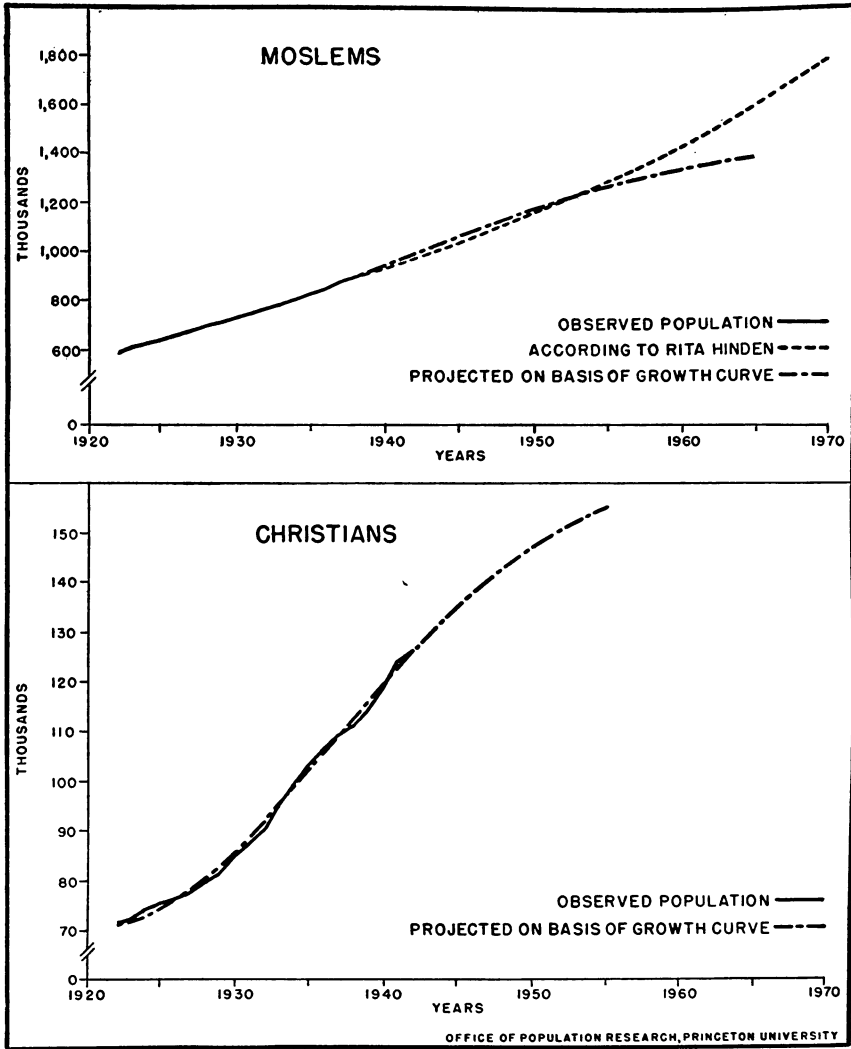


Fig. 5. Population growth of Moslems and Christians in Palestine, 1922-1942, and projected populations after 1942.

decreasing natural increase rates, and their population in 1970 will hardly exceed 1.4 million, in contrast to 826 thousand in 1935. That, however, would still be an increase of about 70 per cent in thirty-five years. Moreover, it has become evident by now that the birth rates of the settled Moslems are decreasing. They averaged 53.5 per 1,000 population in 1926-1930 and 48.3 in 1940-1941. The question is

whether the death rate will continue to decline in the future as it has in the past. Such a continued decline is doubtful. Whereas the birth rate in 1931 was almost as high as the estimated birth rate in Southeast Anatolia in 1935, the crude death rate was between the estimated death rates for West Anatolia and those for the provinces of the Aegean Sea Coast. The death rate of infants, however, was still significantly lower than in the Aegean Sea Coast provinces, 170 as compared with 184. This is a relatively low death rate in view of the current height of the birth rate. The death rate is not likely to drop rapidly unless the birth rate also declines. In fact, because birth rates are relatively high and infant death rates are relatively low, it is possible that modernization will bring a more rapid decline in the birth than in the death rate. Under such circumstances natural increase would be reduced somewhat.

A growth curve has also been fitted to the actual population figures 1922 to 1942 for the Christians in Palestine. (*See* Figure 5.) This curve, as well as a birth rate of 36 and a death rate of 15 per 1,000 inhabitants in 1931-1935, indicates that the Christians in Palestine definitely have entered a period of decreasing natural increase rates. The number of Christians amounted to 71 thousand in 1922, 76 thousand in 1926, 103 thousand in 1935, and probably will never exceed 165 thousand.

Some inferences regarding the prospects of growth for the populations of Lebanon and Latakia can be made from the estimates of their own vital rates, implying high natural increase, and the growth curve for the Christians in Palestine. Their vital rates would place them at the beginning of the steep sector of the growth curve for the Christians. But it is doubtful that their growth will be so pronounced as was that of the Christians in Palestine.

The present analysis of the demographic position of the countries of the Near East and of the prospects for growth involved in this position leads to the over-all conclusion that the Near East belongs to the areas of the world in which future population growth may be

expected to be very high. Are the resources in the countries of the Near East sufficient to meet this situation? This is certainly the case as far as Turkey, Iran, and Iraq are concerned. There is a wide scope for increasing agricultural productivity on the land already under cultivation and there are sufficient reserves of land which can be made cultivable. In Iraq and Iran this largely means reconstruction in modern form of irrigation systems that already existed in ancient times and the removal of the too high alkali contents of the soil. But there are also mineral resources in these countries. Turkey has coal, copper, lead, manganese, and magnesium and is one of the countries richest in chrome. Minerals, in addition to industrial plants, provide the basis for industrialization, which is already under way. Iran has oil, gold, silver, copper, tin, zinc, mercury, nickel, iron, antimony, and manganese, and Iraq has mainly oil and salt and some gold, lead, copper, platinum, and zinc. Both countries produce and can increasingly produce agricultural raw materials for industrial production. Lowdermilk in his recent book on Palestine⁴ has shown that there are large possibilities for the expansion of the cultivable land in this country also. Full utilization of the Jordan Valley Depression will provide the power needed in an advanced economy, and larger extraction of important minerals from the Dead Sea waters will make larger chemical production possible. Palestine has a favorable location between the European producer of production goods and the African and Asiatic producer of raw materials and thus may become the manufacturer of consumption goods for and from the Near East. It is difficult to appraise the economic possibilities in Arabia. Yemen certainly can become an important agricultural producer. There has always been significant emigration from Arabia and it is probable that the other countries of the Near East themselves will be able to accept more immigrants in the future than they have in the past.

⁴ Lowdermilk, Walter C.: *PALESTINE, LAND OF PROMISE*. New York, Harper and Bros., 1944.

Fuller utilization of the natural resources in order to meet the needs of rapidly growing populations will, however, necessitate emancipation from the old ways of life and the change of a medieval and half-medieval into a modern society. The social problems of rapid evolution will be the real problems created by population growth in the Near East.