

I

INTRODUCTION

More and more the nations of the Western World are concerning themselves to make inventories of their principal population movements. For a century and three-quarters Sweden has kept a relatively good account of its births and deaths as well as its numbers. Some of the other countries of western Europe have such data for a century or more, but for most of them the data have been gathered with reasonable accuracy for only a few decades; while for the countries outside of Europe having such data at all, they are of even more recent origin.

When the birth-registration area of the United States was first formed, in 1915, it comprised 10 States and the District of Columbia, containing 31.1 per cent of the population. In the same year the death-registration area, which had been established some years earlier, comprised 25 States, the District of Columbia, and certain cities and included 67.1 per cent of the population of the country. Certain States had had reliable registration data for a considerable time preceding the formation of the registration areas, but little information could be gleaned from them regarding births and deaths in the United States as a whole because of the great differences between different sections of the country. At present (1929) the registration area for both births and deaths includes all but four States and contains about 95 per cent of the total population.

The data on births published by the Bureau of the Census are gathered in the first instance not by the Federal Government but by the several States, and, in spite of the conditions maintained for admission to the registration area, they are of varying degrees of accuracy. The registration laws are not equally well enforced in all States. The States in which vital statistics have been gathered for a long time are quite likely to have more accurate data than some of the States in which the reporting of births and deaths has only recently attained sufficient accuracy to allow the States to be admitted to the registration area. It is, moreover, a matter of common knowledge that it is generally more difficult to secure accurate reports of births than of deaths; hence the birth rates of a good many States are probably less accurate than their death rates.

The birth statistics, however, in spite of shortcomings, do show directions in which we may look for significant trends in the processes of our population growth. But if we are to make any extensive inven-

tory of the sources of natural increase of population in this country we must supplement the vital statistics available with data from other sources. Under existing circumstances the best source of supplementary data appears to be the ratio of children to women based on the census of 1920.

On two points in particular a study of this ratio may be expected to throw some additional light, namely, the differential rates of increase in country and city and the differences between the native and the foreign born in their contributions to our population growth.

AVAILABLE BIRTH STATISTICS

It will be well before entering upon the discussion of the ratio of children to women to present briefly some of the more salient facts regarding births and deaths from the vital statistics for the United States as published by the Census Bureau. Vital rates are usually presented in terms of the number of births or deaths per 1,000 of the population. This number forms the crude birth rate or death rate, as the case may be. Such rates are presented in Table 1 for 1925 and 1920.

It is obvious that the number of deaths per 1,000 of the population will be greater in a city or State which has a large percentage of its people in the older age groups than in one containing fewer old persons; and that, other things being equal, a population containing a large percentage of women of childbearing age will have a higher birth rate than one with a relatively low percentage of such women. The wide range of differences between the population in various areas in respect to age and sex distribution is indicated by the data in Table 2.

As a consequence of these differences in the composition of the population, crude death rates and crude birth rates tell us whether a population is increasing or decreasing in numbers, but they are of little value in making close comparisons between groups unless we know beforehand that the age and sex constitutions of the groups are quite similar. The Bureau of the Census recognizes this limitation in the utility of crude death rates and publishes also "adjusted" death rates (Table 1), in which allowance (or compensation) is made for differences in age and sex composition, together with certain types of supplementary birth rates.

In Table 3 we have birth rates for 1920 based on the female population rather than on the total population, and classified according to the country in which the mother was born.

TABLE 1.—BIRTH AND DEATH RATES PER 1,000 OF THE POPULATION (BY COLOR FOR CERTAIN STATES) IN THE REGISTRATION STATES: 1925 AND 1920¹

[Exclusive of stillbirths]

AREA	BIRTH RATES PER 1,000 OF THE POPULATION		DEATH RATES PER 1,000 OF THE POPULATION			
	1925 Crude	1920 Crude	1925		1920	
			Crude	Adjusted	Crude	Adjusted
	A	B	C	D	E	F
Registration States ²	21.4	23.7	11.8	(³)	13.0	(⁴)
Registration States of 1920 ³	21.6	23.7	11.9	11.5	13.0	12.7
Alabama.....	(⁴)	(⁴)	11.7	(⁴)	(⁴)	(⁴)
White.....	(⁴)	(⁴)	9.4	(⁴)	(⁴)	(⁴)
Colored.....	(⁴)	(⁴)	15.6	(⁴)	(⁴)	(⁴)
California.....	20.4	19.3	13.6	12.4	13.6	12.4
Colorado.....	(⁴)	(⁴)	12.1	12.1	14.5	14.4
Connecticut.....	18.9	24.5	11.2	10.6	13.6	12.9
Delaware.....	19.6	(⁴)	13.1	12.3	14.6	13.7
Florida.....	23.3	(⁴)	13.3	13.7	13.0	13.4
White.....	23.5	(⁴)	11.8	11.5	11.7	11.4
Colored.....	22.9	(⁴)	16.6	18.8	15.5	17.6
Idaho.....	(⁴)	(⁴)	6.7	(⁴)	(⁴)	(⁴)
Illinois.....	19.1	(⁴)	11.5	11.4	12.6	12.5
Indiana.....	20.8	22.0	12.5	11.3	13.4	12.1
Iowa.....	19.7	(⁴)	10.0	(⁴)	(⁴)	(⁴)
Kansas.....	20.3	22.8	10.2	9.3	11.4	10.4
Kentucky.....	25.3	26.0	11.3	11.2	11.8	11.7
White.....	25.9	26.8	10.4	10.3	11.0	10.9
Colored.....	19.8	17.6	20.8	20.9	19.4	19.5
Louisiana.....	(⁴)	(⁴)	13.2	14.7	11.9	13.3
White.....	(⁴)	(⁴)	10.2	11.4	9.8	10.9
Colored.....	(⁴)	(⁴)	18.4	20.5	15.3	17.1
Maine.....	22.2	22.5	13.7	11.0	15.4	12.4
Maryland.....	21.7	24.8	13.9	13.6	14.7	14.4
White.....	20.8	24.3	12.4	11.9	13.3	12.8
Colored.....	26.4	27.5	21.5	23.0	21.2	22.7
Massachusetts.....	20.8	23.6	12.5	11.7	13.8	12.9
Michigan.....	23.2	25.0	11.5	11.0	13.9	13.2
Minnesota.....	20.6	23.3	9.7	9.5	10.7	10.5
Mississippi.....	25.2	(⁴)	12.4	13.5	12.3	13.4
White.....	25.9	(⁴)	9.6	10.1	9.2	9.7
Colored.....	24.6	(⁴)	14.9	16.6	15.1	16.8
Missouri.....	(⁴)	(⁴)	11.9	11.4	12.5	11.9
Montana.....	15.2	(⁴)	7.7	8.2	9.5	10.2
Nebraska.....	21.3	23.7	9.1	8.9	10.0	9.7
New Hampshire.....	20.8	22.4	14.5	11.6	15.2	12.2
New Jersey.....	20.6	(⁴)	11.7	11.8	13.0	13.1
New York.....	20.6	22.5	12.8	12.5	13.8	13.6
North Carolina.....	29.8	31.6	11.6	12.3	12.7	13.4
White.....	29.1	31.7	9.9	10.3	11.2	11.6
Colored.....	31.4	31.3	15.5	17.1	16.0	17.7
North Dakota.....	22.6	(⁴)	7.9	(⁴)	(⁴)	(⁴)
Ohio.....	19.6	21.3	11.4	10.6	12.8	11.9
Oregon.....	17.9	18.9	11.2	10.4	11.7	10.9
Pennsylvania.....	22.7	25.1	12.2	12.0	13.8	13.6
Rhode Island.....	21.2	(⁴)	12.1	11.6	14.3	13.8
South Carolina.....	(⁴)	28.2	12.2	13.5	14.0	15.6
White.....	(⁴)	28.8	9.6	10.4	11.4	12.3
Colored.....	(⁴)	27.7	14.9	17.0	16.5	18.9
Tennessee.....	(⁴)	(⁴)	11.4	11.8	12.1	12.5
White.....	(⁴)	(⁴)	9.7	9.9	10.7	10.9
Colored.....	(⁴)	(⁴)	19.0	20.1	18.1	19.2
Utah.....	27.3	31.2	8.9	9.3	11.5	12.0
Vermont.....	21.8	21.0	14.6	11.4	15.7	12.3
Virginia.....	24.6	28.3	11.8	12.2	13.1	13.6
White.....	23.9	27.8	9.9	10.0	11.3	11.4
Colored.....	26.4	29.7	16.6	17.9	17.6	18.9
Washington.....	16.4	19.8	10.1	10.0	11.1	11.0
West Virginia.....	27.7	(⁴)	10.5	(⁴)	(⁴)	(⁴)
Wisconsin.....	20.1	22.2	10.3	9.7	11.2	10.5
Wyoming.....	21.1	(⁴)	8.3	(⁴)	(⁴)	(⁴)

¹ Col. A, Bureau of the Census, Birth Statistics, 1925; col. B, Birth Statistics, 1920; cols. C, E, and F, Mortality Statistics, 1925, Part II; col. D derived from ratios shown in Mortality Statistics, 1924.
² Including District of Columbia. ³ Not available. ⁴ Not in registration area.

RATIO OF CHILDREN TO WOMEN

TABLE 2.—PER CENT DISTRIBUTION OF THE POPULATION IN THREE STATES AND THREE CITIES, BY SEX AND BY AGE GROUPS: 1920¹

AGE GROUP	PER CENT OF TOTAL POPULATION											
	State						City					
	Vermont		Iowa		North Carolina		New York		Detroit		Seattle	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
All ages.....	50.7	49.3	51.1	48.9	50.0	50.0	49.9	50.1	54.4	45.6	53.2	46.8
Under 5.....	5.0	4.8	5.3	5.1	7.1	6.9	5.1	4.9	5.7	5.6	3.9	3.8
5 to 14.....	9.5	9.2	9.8	9.6	13.3	13.0	9.2	9.1	7.9	7.9	7.0	7.0
15 to 24.....	8.0	7.9	8.8	8.9	9.4	10.1	8.3	9.4	9.5	8.6	7.4	8.2
25 to 34.....	6.9	6.9	8.2	7.8	6.3	6.9	9.7	9.7	14.0	10.3	11.2	10.1
35 to 44.....	6.7	6.4	6.6	6.3	5.3	5.4	7.9	7.3	8.9	6.2	10.6	7.9
45 to 54.....	6.1	5.6	5.5	4.8	4.0	3.5	5.4	5.0	4.8	3.7	6.9	5.1
55 to 64.....	4.3	4.1	3.8	3.3	2.5	2.2	2.8	2.8	2.3	2.1	3.9	2.9
65 to 74.....	2.8	2.7	2.1	1.9	1.5	1.3	1.1	1.2	0.9	1.0	1.5	1.3
75 to 84.....	1.2	1.3	0.8	0.8	0.4	0.5	0.3	0.4	0.2	0.3	0.4	0.4
85 and over.....	0.2	0.3	0.1	0.2	0.1	0.1	(¹)	0.2	(²)	0.1	0.1	0.1
Unknown.....	0.1	(³)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	(²)	0.3	0.1

¹ Fourteenth Census Reports, Vol. II, 1920.² Less than one-tenth of 1 per cent.TABLE 3.—BIRTHS (WHITE) IN THE REGISTRATION STATES PER 1,000 OF WHITE FEMALE POPULATION, BY COUNTRY OF BIRTH OF MOTHER: 1920¹[Rates are shown in *italics* when the number of births is less than 5]

STATE	COUNTRY OF BIRTH OF MOTHER						
	United States	Canada	Denmark, Norway, and Sweden	England, Scotland, and Wales	Ireland	Italy	Other foreign countries
Registration area.....	42.8	47.3	39.4	38.2	41.5	160.0	85.2
California.....	34.7	25.8	33.0	33.8	34.5	92.1	73.7
Connecticut.....	31.2	55.8	44.9	36.7	39.0	177.2	117.2
District of Columbia.....	33.9	23.4	43.0	32.9	31.2	137.9	68.2
Indiana.....	43.8	28.3	34.9	41.6	29.2	137.8	83.0
Kansas.....	46.4	15.5	20.6	18.8	14.1	96.1	58.8
Kentucky.....	55.1	12.8	44.6	21.3	13.1	124.3	29.6
Maine.....	41.3	72.1	41.9	42.7	48.9	231.2	103.9
Maryland.....	47.1	44.8	52.8	43.3	28.2	160.0	72.9
Massachusetts.....	33.2	54.7	42.7	42.0	50.1	175.7	116.9
Michigan.....	47.7	41.2	37.5	52.3	35.5	203.2	98.8
Minnesota.....	48.5	29.4	41.9	43.9	26.1	166.3	68.5
Nebraska.....	49.8	12.0	33.3	25.2	21.0	180.4	52.8
New Hampshire.....	37.0	71.4	34.9	34.6	34.5	176.4	130.6
New York.....	33.5	39.0	41.5	36.0	42.6	150.8	72.9
North Carolina.....	64.2	47.5	78.4	48.2	33.1	52.3	92.0
Ohio.....	39.9	32.7	41.3	35.8	31.4	178.0	82.5
Oregon.....	39.5	33.3	37.6	41.5	27.0	112.5	51.6
Pennsylvania.....	42.0	40.5	40.5	36.0	39.2	188.8	118.1
South Carolina.....	59.1	51.7	30.8	70.4	19.1	97.2	72.5
Utah.....	64.5	57.3	46.4	44.5	42.4	151.5	110.9
Vermont.....	39.1	61.1	35.0	43.7	24.8	107.8	144.4
Virginia.....	56.7	46.3	54.7	47.6	34.9	124.2	90.6
Washington.....	41.0	36.6	43.4	40.3	40.8	109.0	57.3
Wisconsin.....	45.4	25.7	32.8	28.7	19.4	191.2	51.1

¹ Bureau of the Census, Birth Statistics, 1920, p. 10.

For the Nation as a whole, there are no considerable differences between the rates thus calculated for women born in the United States and for those born in the British Isles, in Canada, or in Scandinavia. The rate for women born in Italy, however, is almost four times that for native women; and for women born in the other foreign countries the rates are twice the native rate. This series of rates is still open to criticism because of the difference in age constitution of the women in the United States who were born here and those who came here from various foreign countries. Thus of all women born in the United States and living here in 1920, 36.4 per cent were 20 to 44 years of age, but of the foreign born living in the United States in 1920, 51.6 per cent were in this age group.¹ The variation in the percentage of foreign-born women from different countries who were in the 20 to 44 age group is also great; thus for certain representative urban and rural areas in the United States the women 20 to 44 born in England, Scotland, and Wales constituted 46.7 per cent of all women born in these countries. In these same areas women of this age group born in Italy constituted 63.1 per cent of all the Italian-born women.²

Clearly, differences in age constitution as well as sex must be allowed for in computing birth rates that are significant for strict comparisons. Such allowance is made to a certain extent in Table 4, which shows the number of births to mothers 20 to 49 years of age per 1,000 women aged 20 to 49, for certain population groups in each State, in 1920.

Even when the comparison is made on this basis, we still find large differences in the birth rates computed for native and foreign-born women in most of the States. In the Southern States and in Utah, however, the rate for native white women is larger than that for foreign-born white women.

The differences between States are about as wide as on the basis of the crude birth rates. The highest rate for the entire population in any of the States (Utah, 151.8) is slightly less than twice the rate in the lowest State (California, 77.6). In Table 3, which gives the rates on the basis of all women in the nativity group, the highest rate for women born in the United States (Utah, 64.5) is slightly more than twice the lowest rate (Connecticut, 31.2).

Still another form of birth rate is found in Table 5. In this table, the differences between native and foreign-born women are still further smoothed out because only married women 15 to 44 years of age are considered in calculating the rates.

¹ Fourteenth Census Reports, 1920, Vol. II, pp. 156, 157.

² Carpenter, Niles, Immigrants and Their Children, Census Monograph VII, Table 176, pp. 412, 413.

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TABLE 4.—BIRTHS TO MOTHERS 20 TO 49 YEARS OF AGE PER 1,000 WOMEN 20 TO 49 YEARS OF AGE IN THE POPULATION, BY COLOR AND NATIVITY OF MOTHER, FOR THE REGISTRATION STATES: 1920¹

[Rates are shown in *italics* when the number of births is less than 5]

NATIVITY OF MOTHER	BIRTHS PER 1,000 WOMEN 20 TO 49 YEARS OF AGE							
	Regis- tration area ²	Cal- for- nia	Con- nect- icut	Dis- trict of Colum- bia	Indiana	Kansas	Ken- tucky	Mary- land
Total.....	99.6	77.6	103.9	58.0	92.2	97.5	112.0	98.5
White.....	99.5	72.7	104.2	58.3	93.4	98.8	118.8	99.5
Native.....	98.6	68.8	77.1	55.0	91.2	98.7	119.3	96.9
Foreign born.....	120.8	94.7	146.3	90.4	130.0	98.9	73.3	121.3
Colored.....	101.5	195.8	87.9	57.2	57.8	61.8	58.7	93.7
Negro.....	95.9	53.0	87.1	57.1	57.8	61.1	59.7	93.6
Other colored.....	234.5	270.6	169.8	117.6	88.8	93.9	266.7	291.7

NATIVITY OF MOTHER	BIRTHS PER 1,000 WOMEN 20 TO 49 YEARS OF AGE							
	Massa- chu- setts	Michi- gan	Min- nesota	Ne- braska	New Hamp- shire	New York	North Caro- lina	Ohio
Total.....	93.8	109.7	106.4	105.1	97.1	89.7	144.1	88.8
White.....	93.8	110.7	106.4	105.7	97.1	90.3	149.2	89.6
Native.....	78.1	104.5	107.9	106.7	87.6	75.9	149.2	83.8
Foreign born.....	117.8	130.1	100.6	96.6	120.0	115.2	104.0	124.1
Colored.....	93.1	68.4	100.0	69.8	48.2	65.4	132.5	66.4
Negro.....	90.4	67.1	48.4	43.1	33.6	64.1	132.0	65.2
Other colored.....	231.1	89.1	182.8	220.6	187.8	118.7	168.4	188.9

NATIVITY OF MOTHER	BIRTHS PER 1,000 WOMEN 20 TO 49 YEARS OF AGE							
	Oregon	Penn- syl- vania	South Caro- lina	Utah	Ver- mont	Vir- ginia	Wash- ington	Wis- consin
Total.....	79.3	107.6	123.3	151.8	95.0	123.5	84.1	101.6
White.....	78.2	109.4	132.2	151.2	95.1	125.3	81.4	101.5
Native.....	78.2	96.1	132.4	154.3	90.0	126.4	82.2	101.5
Foreign born.....	78.2	154.8	107.3	132.6	121.9	115.1	77.8	100.6
Colored.....	156.3	67.4	115.0	187.4	18.0	119.5	194.5	111.4
Negro.....	45.0	67.2	114.9	64.4	9.3	119.3	41.4	59.8
Other colored.....	193.0	200.0	266.7	241.1	260.0	323.9	244.0	153.4

¹ Bureau of the Census, Birth Statistics, 1920, pp. 11 and 12.

² Exclusive of Maine, where birth certificate does not show age of parents.

This table considered by itself would give an erroneous impression of the relative rates of increase of native and foreign stock in this country, because of the much greater proportion of the foreign-born women who are married. About one-fifth more of the foreign-born women in the childbearing ages (15 to 44) are married than of the native women in the same age group. This fact alone would give the foreign-born population a considerably higher rate of increase even if the birth rates for married women were the same.

The differences in rates between States are still great, even on the basis of these figures, which equalize differences in the percentage of women married. For the native women in 1920, Utah stood highest, with a rate of 229.8, and Oregon lowest, with a rate of 124.4. For the foreign-born women, Pennsylvania stood highest, with 209.9, and Washington lowest, with 114.5. Clearly the differences between

States which are wholly of an environmental nature deserve considerable attention if we are to understand differences in birth rates and ratios of children to women.

TABLE 5.—BIRTHS PER 1,000 MARRIED WOMEN (ESTIMATED) 15 TO 44 YEARS OF AGE, BY COLOR AND NATIVITY, IN THE REGISTRATION STATES: 1920¹

STATE	WHITE			Negro
	Total	Native	Foreign-born	
Registration States ¹	167.2	164.3	177.4	148.6
Connecticut.....	174.7	151.6	201.1	141.0
District of Columbia.....	132.8	130.2	153.3	106.3
Indiana.....	151.1	149.4	175.0	94.5
Kansas.....	155.9	156.2	151.4	101.1
Kentucky.....	187.4	188.1	121.2	101.4
Maryland.....	170.4	169.2	179.3	145.7
Michigan.....	168.3	165.0	177.7	94.0
Minnesota.....	179.5	187.1	152.7	72.0
Nebraska.....	166.5	168.5	150.1	63.7
New Hampshire.....	174.5	166.9	190.9	64.1
New York.....	157.2	145.6	173.5	110.8
North Carolina.....	228.7	229.0	163.2	198.5
Ohio.....	143.8	139.5	165.1	101.6
Oregon.....	123.7	124.4	119.2	65.5
Pennsylvania.....	180.8	170.3	209.9	105.4
South Carolina.....	203.3	203.8	150.8	167.1
Utah.....	225.8	229.8	200.1	88.9
Vermont.....	161.7	158.2	178.3	172.4
Virginia.....	200.6	201.8	155.9	182.5
Washington.....	126.9	130.0	114.5	68.5
Wisconsin.....	166.2	170.7	146.7	89.3

¹ Bureau of the Census, Birth Statistics, 1921, p. 16, Table M, third division.

² Exclusive of California, Maine, and Massachusetts. The birth certificates of California and Massachusetts do not show the legitimacy of child; that of Maine does not show age of parents or legitimacy of child.

Table 6 shows what percentage of all married white women 20 to 44 years of age were foreign-born, and also what percentage of all white children born during the years 1918-1921 were born to foreign-born white mothers.

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TABLE 6.—PER CENT CHILDREN BORN TO FOREIGN-BORN WHITE MOTHERS ARE OF ALL WHITE CHILDREN, 1918-1921, AND PER CENT FOREIGN-BORN WHITE MARRIED WOMEN ARE OF ALL WHITE MARRIED WOMEN IN THE REGISTRATION STATES: 1920 AND 1910¹

STATE	Per cent children of foreign-born white mothers are of total children of white mothers				Per cent foreign-born white married women 20 to 44 years of age are of total white married women 20 to 44	
	1921	1920	1919	1918	1920	1910
	A	B	C	D	E	F
California.....	28.3	27.1	28.0	(²)	23.0	24.0
Connecticut.....	52.0	53.3	56.8	(²) 58.2	47.0	46.4
Delaware.....	20.2	(²)	(²)	(²)	15.1	13.8
District of Columbia.....	13.1	12.4	12.9	13.1	11.2	12.0
Indiana.....	7.1	7.3	8.4	8.5	6.4	5.8
Kansas.....	5.8	5.7	6.5	6.1	6.0	8.3
Kentucky.....	0.7	0.7	0.8	0.8	1.1	1.3
Maine.....	23.3	21.9	25.1	24.2	20.8	22.2
Maryland.....	11.6	11.8	13.2	13.2	11.7	13.3
Massachusetts.....	47.6	48.6	52.6	53.2	46.2	49.0
Michigan.....	26.1	26.8	29.1	30.1	25.9	26.9
Minnesota.....	17.6	19.0	21.9	22.3	23.1	24.4
Mississippi.....	1.0	(²)	(²)	(²)	1.1	1.3
Nebraska.....	10.1	10.0	(²)	(²)	11.4	17.8
New Hampshire.....	33.1	34.2	37.8	38.5	32.0	33.0
New Jersey.....	43.7	(²)	(²)	(²)	39.2	39.0
New York.....	44.8	45.4	49.0	49.1	41.8	42.9
North Carolina.....	0.3	0.3	0.3	0.2	0.5	0.5
Ohio.....	18.8	19.0	21.7	21.9	16.9	15.6
Oregon.....	12.2	12.5	13.0	(²)	13.3	15.0
Pennsylvania.....	29.7	30.2	33.9	34.5	26.8	27.4
Rhode Island.....	47.5	(²)	(²)	53.6	46.4	50.0
South Carolina.....	0.7	0.6	0.6	(²)	0.9	1.0
Utah.....	11.5	12.1	12.7	13.2	14.1	19.2
Vermont.....	18.9	19.5	20.7	21.4	18.1	18.4
Virginia.....	2.1	2.0	2.1	2.1	2.7	2.4
Washington.....	17.7	18.1	19.9	20.2	20.6	23.2
Wisconsin.....	15.5	16.6	18.7	19.1	19.4	26.5

¹ From reports of the Bureau of the Census: Columns A, B, C, D, from Birth Statistics, 1921, p. 16, Table N; column E from Vol. II, Population, 1920, Chap. IV, Table 11; column F from Population, 1910, Chap. V, Table 32.

² Not added to the registration area until a later date.

³ Not in the registration area in 1919 and 1920.

In most States these foreign-born women contribute a larger proportion of the children than they themselves constitute of the total women. This confirms the point brought out in Tables 3, 4, and 5, namely, that generally foreign-born women bear more children than native women. But it also emphasizes the differences between States and sections of the country in this respect. For, according to this table, the foreign-born women scarcely hold their own in the Southern States, where there are comparatively few foreign born. This is also the case in several of the Middle Western agricultural States, and in Oregon and Washington, where both natives and foreign born are of Teutonic stock.

Table 7 shows the average number of children ever born to the mothers of the children born in 1920, classified as native white, foreign-born white (total and by country of birth), and colored, and also the average number of such children living at the time of the 1920 birth.

The foreign-born women in the United States as a whole average one more child born than the native women, but only 0.7 of a child more living, by reason of greater child mortality in the foreign-born group. It is difficult to draw any conclusions from such data, however, because of the fact that foreign-born mothers are likely to be somewhat older on the average than native mothers; hence the average number of children they have borne would be greater, even if the total number of children in completed families of native and foreign-born women were the same. When we compare women born in different countries as regards the number of children they have borne, there is no mistaking the fact that some of the recent immigrant groups (Poles, Italians, Hungarians, and Austrians) have larger families than most of the older immigrant groups, though even here, on account of lack of data on the age of the mothers in the different groups and because of the small numbers of foreign born in some States, the data are far from satisfactory.

Table 8 shows for 1920 the distribution of 1,000 births to mothers of different nativities according to the order or serial number of the birth—that is, according to the number of children previously born to the mother.

These figures indicate that a much larger proportion of the births to native women are first and second births than is the case with most foreign-born women. Here again, however, we must remember that we do not know the ages of the women in these different groups. Furthermore, the distinctly agricultural States were not adequately represented in the birth statistics in 1920.

Table 9 shows the average number of children ever born to mothers of children born in 1920 classified according to the occupation of the father, for certain selected occupational groups.

Maryland:																		
Children ever born.....	3.3	3.2	3.1	4.0	3.9	4.4	3.2	2.8	3.2	3.9	4.1	4.5	5.0	3.6	3.4	4.3	3.9	
Children living.....	2.9	2.8	2.7	3.4	3.3	3.8	2.9	2.7	2.8	3.4	3.5	3.9	3.9	3.2	2.9	3.7	3.1	
Michigan:																		
Children ever born.....	3.2	3.2	2.9	4.1	4.3	4.3	3.5	4.1	2.8	3.0	4.9	4.3	4.3	3.8	4.3	3.7	2.9	
Children living.....	2.8	2.8	2.6	3.5	3.6	3.5	3.1	3.7	2.5	2.6	4.1	3.6	3.6	3.2	3.7	2.9	2.4	
Minnesota:																		
Children ever born.....	3.3	3.3	3.0	4.5	5.0	5.1	4.0	4.2	2.9	3.6	5.5	4.8	4.9	3.7	4.5	2.9	3.8	
Children living.....	3.0	3.0	2.8	4.0	4.4	4.3	3.5	3.9	2.7	3.2	5.0	4.1	4.3	3.3	4.0	2.7	3.0	
Nebraska:																		
Children ever born.....	3.4	3.4	3.2	4.8	4.7	4.7	2.9	4.3	3.6	4.0	5.8	3.8	5.5	5.6	3.9	2.5	3.5	
Children living.....	3.1	3.1	3.0	4.2	4.2	4.1	2.6	3.9	3.4	3.5	5.3	3.5	4.8	4.7	3.4	2.4	3.0	
New Hampshire:																		
Children ever born.....	3.3	3.3	2.9	4.0	3.5	1.8	4.3	3.3	2.7	3.8	3.0	4.4	4.2	3.7	3.3	4.0	1.9	
Children living ¹																		
New York:																		
Children ever born.....	3.1	3.1	2.6	3.6	3.3	3.2	3.2	2.8	2.8	3.3	3.5	4.5	4.1	2.9	2.9	3.0	2.8	
Children living.....	2.7	2.7	2.3	3.1	2.9	2.7	2.8	2.5	2.5	2.9	3.1	3.8	3.5	2.6	2.5	2.7	2.3	
North Carolina:																		
Children ever born.....	3.8	3.8	3.8	3.3	4.3	6.0	1.8	1.9	2.7	3.4	2.7	4.9	3.3	3.4	3.6	3.7	4.0	
Children living.....	3.3	3.3	3.3	2.9	2.8	5.0	1.7	1.7	2.6	3.4	2.2	4.5	2.3	3.1	3.3	3.0	3.4	
Ohio:																		
Children ever born.....	3.1	3.1	2.8	4.1	4.3	4.2	2.8	3.1	3.1	3.3	4.2	4.6	4.4	3.3	3.7	2.5	3.2	
Children living.....	2.6	2.6	2.5	3.4	3.5	3.4	2.5	2.8	2.8	2.9	3.7	3.8	3.7	2.9	3.1	2.2	2.6	
Oregon:																		
Children ever born.....	2.7	2.7	2.6	3.2	3.7	3.9	2.5	3.4	2.3	3.0	3.8	4.0	2.7	4.1	3.0	3.2	2.7	
Children living.....	2.5	2.5	2.4	2.9	3.2	3.5	2.3	3.1	2.1	2.7	3.4	3.4	2.5	3.5	2.7	2.8	2.4	
Pennsylvania:																		
Children ever born.....	3.5	3.5	3.1	4.6	5.1	4.8	2.8	3.9	4.0	3.7	4.9	4.9	4.8	4.0	4.1	3.6	3.3	
Children living.....	3.0	3.1	2.7	3.8	4.1	3.9	2.6	3.4	3.4	3.2	4.2	4.1	4.0	3.3	3.4	3.1	2.6	
South Carolina:																		
Children ever born.....	3.7	3.6	3.6	3.3	5.0	5.0	3.8	1.5	2.8	2.5	3.8	4.6	3.3	3.2	3.5	4.4	3.8	
Children living.....	3.2	3.2	3.2	2.9	5.0	5.0	3.7	1.5	2.4	2.3	2.4	4.4	3.0	2.9	3.1	3.8	3.3	
Utah:																		
Children ever born.....	3.5	3.5	3.4	4.3	5.1	4.9	2.5	4.6	4.3	3.9	4.6	4.3	7.5	4.2	3.9	1.0	2.7	
Children living.....	3.2	3.2	3.1	3.8	4.1	4.4	2.2	4.1	3.9	3.5	4.1	3.7	7.0	3.8	3.5	1.0	2.3	
Vermont:																		
Children ever born.....	3.4	3.4	3.2	4.5	5.3	4.8	4.6	4.0	3.3	4.9	4.2	4.7	4.8	4.2	4.0	-----	2.0	
Children living.....	3.0	3.0	2.8	3.9	4.8	4.1	3.9	3.5	2.9	4.5	3.8	3.8	4.4	3.8	3.3	-----	2.0	
Virginia:																		
Children ever born.....	3.7	3.6	3.6	3.8	4.7	5.8	2.9	3.4	2.9	4.3	4.1	4.8	3.8	3.4	3.3	3.7	4.0	
Children living.....	3.3	3.2	3.2	3.3	4.1	4.6	2.5	3.0	2.6	3.6	3.4	4.2	3.4	3.1	2.9	3.1	3.4	
Washington:																		
Children ever born.....	2.7	2.7	2.6	3.3	4.4	3.8	2.6	3.2	2.8	3.1	3.7	3.9	4.5	4.3	3.2	3.3	2.6	
Children living.....	2.5	2.5	2.4	3.0	3.8	3.2	2.4	3.0	2.6	2.7	3.4	3.4	3.9	3.7	2.9	3.1	2.4	
Wisconsin:																		
Children ever born.....	3.3	3.3	3.1	4.6	4.5	4.0	4.4	4.5	3.0	3.6	5.1	4.3	5.4	4.1	4.3	3.6	3.3	
Children living.....	3.0	3.0	2.8	4.0	3.9	3.3	3.9	4.1	2.8	3.3	4.5	3.8	4.4	3.6	3.7	3.1	2.7	

¹ Bureau of the Census, Birth Statistics, 1920, p. 15.

² Exclusive of Massachusetts where the birth certificate does not show the number living or the number ever born. The birth certificates of Maine and New Hampshire do not show the number of children living.

³ Not shown on the State certificate.

TABLE 8.—DISTRIBUTION OF CHILDREN IN ORDER OF BIRTH (FIRST, SECOND, ETC.) PER 1,000 BIRTHS, BY COLOR AND BY COUNTRY OF BIRTH OF MOTHER, IN THE REGISTRATION AREA:¹ 1920²

CHILD IN ORDER OF BIRTH	DISTRIBUTION OF CHILDREN IN ORDER OF BIRTH PER 1,000 BIRTHS																
	Total	White														Colored	
		Total	Country of birth of mother														
			United States	Foreign country											Country not stated		
			Total foreign born	Austria (includes Austrian Poland)	Hungary	Canada	Denmark, Norway, and Sweden	England, Scotland, and Wales	Ireland	Germany (includes German Poland)	Italy	Poland (not specified)	Russia (includes Russian Poland)	Other foreign countries			
Total children.....	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
First child.....	290.6	291.6	324.1	184.8	136.1	145.7	267.1	208.1	312.5	233.9	180.1	157.9	106.4	221.7	233.1	264.6	279.2
Second child.....	204.4	206.6	217.6	170.4	153.7	167.3	194.9	202.5	218.1	214.0	162.0	125.1	142.2	222.3	183.9	148.1	179.5
Third child.....	147.9	149.1	147.2	155.7	153.7	158.8	141.5	156.8	146.7	161.7	140.2	135.2	178.9	179.4	154.0	101.1	134.0
Fourth child.....	105.8	105.9	98.5	130.4	140.2	141.6	103.8	120.8	104.2	129.6	114.4	133.8	157.9	125.2	118.8	84.1	104.5
Fifth child.....	75.0	74.8	66.9	100.7	111.0	113.4	78.0	93.4	64.3	91.8	88.9	118.9	114.0	82.4	89.3	58.3	77.4
Sixth child.....	53.9	53.3	46.3	76.5	86.8	84.7	55.9	65.2	46.5	61.7	74.9	95.0	88.2	57.6	65.4	38.0	60.0
Seventh child.....	38.8	38.3	32.6	57.1	65.5	61.8	43.1	47.8	35.7	42.5	58.2	73.6	67.8	38.5	47.4	41.3	44.5
Eighth child.....	27.8	27.2	22.8	42.0	49.1	46.9	31.7	36.3	22.7	25.9	32.0	55.1	48.3	26.5	34.1	25.9	34.8
Ninth child.....	18.9	18.3	15.1	28.8	34.2	31.7	22.6	24.8	16.8	13.3	38.5	37.9	33.8	16.1	25.4	12.1	25.2
Tenth child.....	12.9	12.4	10.1	20.0	21.6	20.8	20.7	15.6	12.2	11.2	30.2	26.9	21.7	11.1	17.0	4.9	19.2
Eleventh child.....	7.7	7.3	5.9	12.0	13.0	9.4	11.7	10.1	6.5	5.6	20.7	16.1	14.2	6.6	11.0	6.5	12.2
Twelfth child.....	4.8	4.4	3.4	7.7	8.8	7.4	10.8	7.2	3.6	2.5	16.3	9.3	8.8	3.5	7.0	4.0	9.0
Thirteenth child.....	2.6	2.4	1.9	4.0	4.1	3.2	5.5	3.2	1.6	1.5	8.6	5.1	4.8	2.0	4.1	2.4	5.6
Fourteenth child.....	1.4	1.3	1.0	2.2	2.0	1.4	3.1	1.4	1.6	0.8	4.6	2.9	1.9	1.6	2.5	1.6	3.3
Fifteenth child.....	0.7	0.6	0.5	1.1	1.0	1.0	1.7	0.7	0.8	0.1	2.2	1.5	1.6	0.5	1.0	-----	1.7
Sixteenth child.....	0.4	0.3	0.2	0.6	0.4	0.4	1.3	0.3	0.5	0.2	1.3	0.9	0.6	0.4	0.6	-----	0.9
Seventeenth child.....	0.3	0.3	0.2	0.6	0.6	0.3	1.1	0.3	0.5	0.1	1.0	0.6	0.3	0.5	1.1	-----	0.9
Serial number of child not stated.....	5.9	5.8	5.7	5.3	8.2	4.1	5.6	5.2	5.3	3.4	5.8	4.3	6.5	4.3	4.3	207.1	8.0

¹ Exclusive of Massachusetts, which does not show on the birth certificate the number of the child in order of birth.
² Bureau of the Census, Birth Statistics, 1920, p. 14.

TABLE 9.—NUMBER OF CHILDREN EVER BORN, TO MOTHERS OF CHILDREN BORN IN 1920, AND NUMBER LIVING AND AVERAGES, BY CERTAIN SELECTED OCCUPATIONS OF FATHER, IN THE REGISTRATION AREA: 1920¹

[The averages and the numbers born and living are exclusive of the number "not stated"]

OCCUPATION OF THE FATHER (CODE NUMBER IN PARENTHESES)	Total births, 1920	Total number of children ever born	Total number of children living	Average number of children ever born	Average number of children living
All occupations.....	1,461,604	4,484,055	3,857,555	3.3	2.9
AGRICULTURE, FORESTRY, AND ANIMAL HUSBANDRY					
Dairy farmers, farmers, and stock raisers (000-006).....	345,519	1,294,785	1,142,511	3.8	3.4
Farm laborers (008-016).....	8,613	29,088	24,880	3.5	3.0
EXTRACTION OF MINERALS					
Foremen, overseers, and inspectors (070-072).....	1,022	4,628	3,002	4.6	3.9
Operators, officials, and managers (074-078).....	584	1,825	1,660	3.2	2.9
Mine operatives (080-092).....	47,544	199,396	167,856	4.3	3.6
MANUFACTURING AND MECHANICAL INDUSTRIES					
Blacksmiths, forgemen, and hammermen (136, 138).....	9,132	30,311	25,895	3.6	3.2
Carpenters (148).....	33,440	105,767	90,505	3.5	3.1
Electricians (158).....	14,496	31,094	27,802	2.3	2.1
Engineers (stationary), cranimen, hoistmen, etc. (164, 166).....	14,601	41,552	36,440	3.1	2.8
Foremen and overseers (manufacturing) (178).....	9,534	26,614	23,016	3.3	2.9
Laborers (not otherwise specified) (196-358).....	244,365	877,082	708,475	3.7	3.1
Machinists, millwrights, toolmakers, mechanics (n. o. s.) (362-366, 374-378).....	84,718	195,211	172,181	2.6	2.3
Managers, superintendents, manufacturers, and officials (368-372).....	14,142	31,573	28,642	2.5	2.3
Semiskilled operatives (not otherwise specified) (416-576).....	129,945	322,384	268,542	3.0	2.6
TRANSPORTATION					
Chauffeurs (610).....	21,888	46,302	40,565	2.4	2.2
Laborers (steam and street railroad) (640, 642).....	6,629	21,529	17,990	3.6	3.0
Locomotive engineers (644).....	2,336	7,817	6,538	3.5	3.1
Officials and superintendents (steam and street railroad) (650, 652).....	1,000	2,818	2,522	3.0	2.7
TRADE					
Bankers, brokers, and money lenders (700-706).....	5,045	10,774	9,994	2.3	2.1
Commercial travelers (708).....	2,525	5,706	5,091	2.4	2.2
Retail dealers (787-789, 795).....	63,840	179,869	158,165	3.1	2.8
PUBLIC SERVICE (NOT ELSEWHERE CLASSIFIED)					
Guards, watchmen, doorkeepers (802).....	1,502	5,313	4,414	4.1	3.5
Soldiers, sailors, and marines (822).....	4,263	6,960	6,141	1.8	1.6
PROFESSIONAL SERVICE					
Clergymen (839).....	4,193	13,104	11,679	3.3	3.0
Lawyers, judges, and justices (860).....	4,338	9,520	8,761	2.4	2.2
Physicians and surgeons (868).....	4,711	9,755	8,850	2.3	2.1
Teachers (school) (862).....	4,793	10,077	9,207	2.3	2.1
Technical engineers (civil, electrical, mechanical, mining) (864-870).....	5,971	11,448	10,443	2.1	1.9
DOMESTIC AND PERSONAL SERVICE					
Barbers, hairdressers, and manicurists (900).....	9,003	26,025	22,458	3.2	2.8
Hotel keepers and managers (914).....	1,163	3,698	3,290	3.3	3.0
Janitors and sextons (918).....	2,228	7,710	6,403	4.1	3.4
Servants (946-960).....	4,352	10,617	8,937	2.7	2.3
CLERICAL OCCUPATIONS					
Bookkeepers, cashiers, and accountants (986, 988).....	11,580	21,299	19,580	2.0	1.9
Clerks (except in stores) (990-994).....	43,506	85,311	80,288	2.2	2.1
Stenographers and typewriters (999).....	632	1,108	1,020	1.9	1.8

¹ Bureau of the Census, Birth Statistics, 1920, pp. 18 and 19, selected occupations from each group. Code numbers from Classified Index to Occupations, 1920.

As in the statistics of England and Wales,³ miners head the list and the groups that might be called upper and middle class come near the bottom. Unskilled laborers have a higher average than skilled workmen. These averages, however, can not be compared directly with those given for England and Wales because these are not for completed families and often the women of one group bearing children in any given year may have their families practically filled, while those in another group may not average more than half the children they will ultimately have.

A good illustration of this is found in the composition of the groups designated "foremen, overseers, and inspectors" in the extraction of minerals, and "miners." The former are largely drawn from the older, more skilled, and more dependable miners; hence their wives are older and their families are more nearly complete. But even though these data do not permit of direct comparison of social classes, it is clear that the size of the family tends to become smaller as the social status improves, except where one passes through a lower class in rising to a higher one, as in the case of the mine foremen, etc., mentioned above.

Table 10 gives the ratios of children under 5 to white women 16 to 44 years of age in the United States since 1800.⁴

These ratios show beyond doubt that the decline in the birth rate has been going on in certain parts of this country since 1800, particularly in the industrial States. One other point in Table 10 is important as bringing out a difference not clearly indicated in any of the preceding tables, namely, the differences between the industrial and the agricultural States. As early as 1800 there was a differential birth rate as between these two groups of States, or if not differential birth rate, at least a large difference in their rates of increase because of the higher survival rate of children in the agricultural States.

The data given above, although throwing much light on the processes of population growth in this country, leave much to be desired in respect to completeness and consistency. One must remember, however, that they were not gathered directly by the Federal Government but by the several States, some of which had not yet seen the importance of taking account of their basic population movements. The statistics of births do show, however, the directions in which we may look for significant trends in the processes of our population growth.

³ See Appendix.

⁴ Whelpton, F. K., "Industrial development and population growth," *Social Forces*, March and June, 1928.

TABLE 10.—CHILDREN UNDER 5 PER 1,000 WOMEN 16 TO 44 YEARS OF AGE IN THE WHITE POPULATION OF THE UNITED STATES: 1800-1920¹

YEAR	CHILDREN UNDER 5 PER 1,000 WOMEN 16 TO 44 YEARS OF AGE			
	United States	Agricultural States ²	Semi-industrial States ³	Industrial States ⁴
	A	B	C	D
1920.....	489	629	534	458
1910.....	503	678	537	444
1900.....	531	706	587	465
1890.....	541	702	591	460
1880.....	611	759	640	500
1870.....	638	718	690	529
1860.....	705	808	731	595
1850.....	690	810	613	598
1840.....	835	966	773	697
1830.....	877	947	799	619
1820.....	955	1,036	918	674
1810.....	1,006	1,048	940	756
1800.....	1,000	1,043	962	786

¹ For method of computation, see Wilcox, W. F., *The Change in the Proportion of Children in the United States*, American Statistical Association, March, 1911. This table is taken directly from Mr. Whelpton's paper cited on p. 14. This is the reason the age group of women is 16 to 44 instead of 20 to 44 as in the body of the study.

² States grouped according to proportion of those gainfully employed engaged in agriculture. The agricultural group in 1800 contained Maine, New Hampshire, Vermont, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Ohio, Indiana, Illinois, Missouri, Kentucky, Tennessee, Alabama, Mississippi, Louisiana. Additions in 1850, Michigan, Wisconsin, Iowa, Florida, Texas, Arkansas; in 1860, West Virginia, Minnesota, Kansas; in 1870, Nebraska; in 1890, North Dakota, South Dakota; in 1900, Oklahoma, New Mexico, Idaho.

³ The semiindustrial group in 1800 contained New York, New Jersey, Pennsylvania. Additions in 1830, Delaware, Maryland, California; in 1870, Virginia, Wisconsin; in 1880, Indiana, Minnesota, Colorado, Utah; in 1900, Kansas, Wyoming, Arizona, Nevada; in 1910, Tennessee, Louisiana; in 1920, Texas, Oklahoma.

⁴ The industrial group in 1800 contained Massachusetts, Rhode Island, Connecticut. Additions in 1830, New Jersey; in 1840, Pennsylvania; in 1850, Maryland; in 1860, New York; in 1870, Maine, New Hampshire, Delaware; in 1890, Ohio; in 1890, Illinois, Michigan, Colorado; in 1900, Vermont, Indiana, Wisconsin, California; in 1910, Minnesota, Nevada, Washington; in 1920, West Virginia, Florida, Missouri.

METHOD AND SCOPE OF STUDY

The method followed in the study of the relation between the number of children under 5 years of age and the number of women from 20 to 44 years of age, which forms the subject under discussion in the major part of the succeeding chapters, is very simple.

It is well known to students of population statistics that all but a relatively small percentage of the children under 5 enumerated in the census will be the children of women 15 to 44 years of age, that is, of women within the so-called childbearing ages. Hence comparisons of the ratio of children to women for different groups and localities should throw considerable light on the contributions of these different groups and localities to the next generation.

It will be observed at once by the reader that the women in the age group 20 to 44 are made the basis of the ratios used rather than the women 15 to 44. The elimination of the age group 15 to 19 was decided upon after careful consideration of the advantages and disadvantages of its inclusion. Briefly, it appeared that since only 12.5 per cent of the young women 15 to 19 were married, they figured as mothers in very few cases. Hence the group could be omitted from

consideration without appreciably changing the resulting picture and the numbers we would have to handle would be more manageable. Further, comparisons between native and foreign-born women would be more accurate if those under 20 years of age were eliminated, since the foreign-born group contains relatively few of them.

Another matter that should be explained is the basis adopted for the allocation of the children of mixed parentage to native and foreign-born women. This point is of particular importance because one of the most interesting comparisons throughout the study is that between native and foreign-born women. After careful consideration it was decided to allocate the children of mixed parentage to native and foreign-born women on the basis of the percentages of the persons of mixed parentage under 21 years of age having native and foreign-born mothers. This seemed to be the best course both because of the fact that the Bureau of the Census had these tabulations available and because no more accurate method, short of an actual tabulation, which was quite impracticable, suggested itself. It is believed that the errors resulting from this method of allocation are not sufficient to affect the results materially when comparing native and foreign-born women and they are of very little significance indeed in comparing different localities. The operation of this method may be made clear by a definite example. Thus in Massachusetts there were, in 1920, 232,144 white persons under 21 of mixed parentage. Of these, 114,522, or 49.3 per cent, had native mothers and 117,622, or 50.7 per cent, had foreign-born mothers. There were in Massachusetts in 1920, 61,778 children under 5 of mixed parentage. These were allocated to native and foreign-born mothers on the basis of the percentages given above; namely, 49.3 per cent to native mothers and 50.7 per cent to foreign-born mothers.

It will be well to say a word here regarding the meaning and the uses of the ratio of children to women. It is by no means the same as the birth rate, although in communities of similar age and sex composition and having practically identical death rates, the ratio of children to women varies directly with the birth rate; that is, under given conditions, a community with a birth rate of 20 would have a ratio two-thirds that of a community having a birth rate of 30.

The ratio of children under 5 to women 20 to 44 years of age is affected by three largely independent variables: (a) The specific birth rate; (b) the death rate of children under 5; and (c) the age distribution of the women within the group 20 to 44 years of age. The ratios of children to women could only be translated into terms of birth rates if the mortality of children under 5 were the same in all groups and if the age distributions of the women in the basic group were also the same. These ratios can, however, be used for comparative purposes

if we bear in mind their limitations. What these ratios really measure is the effective reproduction of the different groups.

When due allowance is made for the number of children needed to replace the people who die (see Chap. VIII) in a given group, then the size of the excess shows us the number of children available for increase in that group. When this excess (or deficiency) is expressed in terms of the ratio it bears to the number needed for replacement, then we have an index of increase; using their index of increase we may compare different communities and get a fairly accurate notion of their relative rates of increase. The ratio of children to women is fully as useful as the birth rate in studying the effective reproduction of groups because it is less affected by the abnormal age and sex composition than the crude birth rate and also because the census count of the groups dealt with here is undoubtedly more accurate⁶ than the registration of births in a considerable part of the registration area. Besides, there is a considerable part of our population for which we do not have any birth data in 1920.

By way of illustrating the use of these ratios of children to women in ascertaining the reproduction of different groups we may cite the fact that Massachusetts had a crude birth rate of 23.6 in 1920, and Kansas one of 22.3.⁶ Death rates of children under 5 were 21.1 and 12.9, respectively. This difference in child mortality, together with differences in the age constitution of the women 20 to 44, resulted in Massachusetts having fewer children under 5 per 1,000 white women 20 to 44 than Kansas, as shown by the ratios of children of 490 and 582, respectively.⁷ The difference in these ratios is 19 per cent in favor of Kansas, although the crude birth rate showed that Massachusetts was in the lead by a little more than 5 per cent. Thus it appears that the study of the ratio of children to women will throw considerable new light on the actual processes of population growth in the United States.

⁶ Lest what has just been said give a false impression of the accuracy of the census count of children it will be well to note that a study to determine omissions in Washington, D. C., indicates a considerable underenumeration of young children. This may possibly amount to as much as 5 per cent of all children under 5 among whites and 13 per cent among Negroes. This study, however, was very limited in scope and does not justify our changing the ratios derived from the published census results. Moreover, these omissions are not equally great in all localities. For this reason the ratios of children to women in the different groups of the white population used in this study will not be corrected for omissions, for it is believed that in attempting to do so on the basis of the study referred to, many errors would be introduced which would render the ratios less reliable than they are without corrections. When, however, comparisons are made between groups not equally affected by underenumeration, for example, whites and Negroes, or when the absolute size of the ratio is of great importance, attention will be called to this fact of underenumeration. See *United States Abridged Life Tables, 1918-1920*, p. 9.

⁶ Bureau of the Census, *Birth Statistics, 1920*, pp. 44, 45.

⁷ Calculated from Detailed Table 1.