

TRENDS IN ANNUAL BIRTH RATES AMONG MARRIED
WOMEN IN SELECTED AREAS ACCORDING TO
NATIVITY, AGE, AND SOCIAL CLASS¹

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DESPITE the common knowledge that our general birth rate is declining, we know very little about the impact of this decline on specific groups of our population. Important questions arise concerning the extent of this decrease among women grouped according to residence, nativity, age, and social class. During the past decade the crude birth rate of the foreign-born has declined more rapidly than has that of the native groups. Is this simply due to cessation of immigration with the consequent aging of the foreign-born women, or does it persist when foreign and native wives of the same ages are compared? Foreign-born women live more predominantly in urban centers than do native women. Does the greater decline in fertility of foreign-born persist when women of the same localities are compared? Laboring pursuits constitute a larger proportion of occupations among the foreign-born than among the native-born. How do the trends in native and foreign birth rates compare when the women are restricted to the same broad social-economic groupings? Related to the preceding question is the general one of trends with reference to social class differences in fertility within specific nativity and locality groups. Are the discrepancies in the birth rates of social classes tending to converge, diverge, or are they remaining about the same? Until official data are more adequate and more refined, the student of population problems must depend upon private sources for answers to many questions such as the above. Moreover, until more comprehensive data of any sort are available, he must be content with results from local rather than general situations, with suggestive rather than with conclusive evidence.

¹ From the Milbank Memorial Fund.

SURVEY	DATE	NUMBER FAMILIES
HEALTH AND DEPRESSION SURVEYS		
Greenville, S. C. (Mill Villages)	1933	1,353
New York City (Lower East Side)	1933	1,378
"Poor Areas in Five Cities" (Combined)		6,791
Baltimore	1933	1,392
Cleveland	1933	1,364
Detroit	1933	1,408
Pittsburgh	1933	1,383
Syracuse	1933	1,244
OTHER SURVEYS		
Columbus	1931	2,941
Syracuse	1930-1931	2,890
Brooklyn (Bushwick)	1933	5,135
GRAND TOTAL		20,488

Table 1. Surveys utilized for annual birth rate study, with date of survey and number of families included.

This paper presents an analysis of the annual birth rates from 1900 until 1930 and 1932 among specific groups of white married women of childbearing age. The basic data were derived from several field surveys in which the Milbank Memorial Fund has participated during the past few years. In Table 1, the surveys utilized are listed, together with the date of each survey and the number of families included. These field investigations have been described in greater detail in previous publications, so the comments here are restricted to those particularly relevant to the present analysis.

The Syracuse study of 1930-1931² and the Columbus investigation of 1931 represent attempts to secure a sizable number of family records from representatives of the several broad occupational class-

² The primary purpose of the Syracuse survey of 1930-1931 was to analyze sickness rates in various types of neighborhoods in that City. The original enumeration itself was practically completed in 1930. In all cities the coded annual fertility experience was brought up through the year preceding the enumeration. Therefore, the last year under consideration for women in this Syracuse survey is 1929 and the last five-year period shown in the tables and charts is that centering on 1927.

es. Localities ranging from university neighborhoods to very poor areas were enumerated in each of these two cities.³ The "Health and Depression" survey,⁴ conducted by the United States Public Health Service with the assistance of the Milbank Memorial Fund, had as its primary objective the determination of the effect of the depression upon the health of families of low income. In each selected city the survey was confined to poor areas. Although such restriction obviously renders the fertility data unrepresentative of the entire population of these cities, it has the advantage of supplying a fair degree of constancy to the factor of type of neighborhood. The Bushwick (Brooklyn) survey was confined to one "Health Area," which might be described as a "lower-middle-class" residential area within a metropolis. The houses enumerated ranged in character from tenements and "cold-water flats" to "brown stone fronts" and modest homes with resident owners.

Method of Analysis. In each survey the schedule included provision for entries concerning nativity of husband and wife, usual occupation of the husband, date of birth of wife, date of marriage, age of wife at separation (if marriage had been dissolved for any reason), and a complete birth-date roster of children born to the union.⁵

³ Unfortunately, however, the numbers of families in the professional and unskilled groups were too small to yield reliable annual rates. Birth rates based upon total number of children ever born for each of these classes have been reported in Notestein, F. W. and Kiser, C. V.: *Fertility of the Social Classes in the Native White Population of Columbus and Syracuse. Human Biology*, December, 1934, vi, No. 4, pp. 595-611.

⁴ For further details concerning this survey, see:

(a) Perrott, G. St. J. and Collins, S. D.: *Sickness and the Depression. The Milbank Memorial Fund Quarterly*, October, 1933, xi, No. 4, pp. 281-298.

(b)—: *Relation of Sickness to Income and Income Change in Ten Surveyed Communities. Public Health Reports*, United States Public Health Service, May 3, 1935, 50, No. 18, pp. 595-622.

⁵ Except in the case of the "Health and Depression" surveys, complete birth-date rosters of children were solicited from secondary families (married relatives in the household) as well as from primary families. In the "Health and Depression" surveys, complete rosters of children were solicited from all primary families but only for resident children in secondary families. In the latter instance, however, families with all births reported could be identified for inclusion in the analysis by comparing the number of resident children with the single entry concerning total number of children ever born. Experimentation with birth rates based upon total number of children ever born indicated that selections arising from

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The above items afford the essential data for computation of a series of annual birth rates among married women of childbearing age according to nativity and social class in the various areas studied. Fundamentally, the procedure was that of ascertaining the number of women who were exposed to the risk of childbirth (married and 15-44 years of age) in successive calendar years since 1900, and the annual number of live births to these women according to age of wife, nativity of husband and wife, and social class of husband.⁶

Certain limitations are imposed by the present method of analyzing past fertility trends of a population surveyed at the end of the period under investigation. Records were secured only from families in which the husband or wife was alive and resident in the household at the time of the enumeration. Questions of bias in the sample of older women thus secured become relevant on the basis of a possible association between fertility and longevity of women. If such an association exists, it is probably not strong,⁷ and the resulting bias would lose some of its force in the present analysis because broken marriages survived by husbands are included.

the omission of all secondary families are virtually removed by the inclusion of (1) the identified secondary families in which birth dates of all children were available, and (2) the childless secondary families. Remaining secondary families enumerated in the "Health and Depression" surveys were not used in this analysis.

⁶ In planning the punch cards, it was possible to code, in addition to basic descriptive data, the "calendar year wife entered exposure," the "calendar year wife left exposure," and year of birth of successive children. The "year wife entered exposure" was identical with year of marriage if the wife was 15-44 at marriage. If the wife's age at marriage was 45 or more, the woman was coded as never having been in exposure and was eliminated from the final analysis. If she was under 15 at marriage, the year of her fifteenth birthday was taken as "year entered exposure." The "year wife left exposure" was the calendar year she reached her forty-fifth birthday, if her marriage remained unbroken until that time. If marriage was dissolved before the wife reached 45, the calendar year of such termination was used. The specific calendar year during which a woman entered or departed from the period of exposure was arbitrarily assigned a value of six months instead of the full year. By utilizing birth dates of wives, it was possible to tabulate "woman-years" exposures and live births according to ages of wives in successive years.

⁷ On the basis of a critical study of the subject, Freeman concludes: "There probably is a low positive correlation between the duration of life and the number of offspring borne, in married women who have survived the reproductive period . . . However, the correlations are all of such a low order that changes in the mean duration of life associated with increasing numbers of offspring are of no practical importance." See Freeman, Bettie C.: *Fertility and Longevity in Married Women Dying after the End of the Reproductive Period. Human Biology*, September, 1935, vii, No. 3, pp. 392-418.

More important are the differences in the age composition of the women at different dates. Part of this is the result of the fact that all data were secured from marriages in which at least one member survived to the date of enumeration. As a result, the women in exposure during the initial years of the period under study are unduly weighted by individuals who were in the early stages of the childbearing period at that time. Thus, age-standardization of birth rates is doubly important in data of this type.

It should also be remembered that the residence and social class data referred to the time of the survey and not to each successive year under investigation. Had the sizes of the samples justified the procedure, the present analysis might have been restricted approximately to families whose place of residence and whose occupational levels remained unchanged during the fertile years of married life.⁸

⁸The coding of residence since marriage permits an approximate determination of proportions of families making important changes in residence or social class. Among native-whites in northern cities, the following proportions had spent all or most of their first ten years of married life in villages or open country: "poor areas in five cities," 7 per cent; Bushwick, less than 1 per cent; Lower East Side (New York City), less than 1 per cent; Columbus, 19 per cent; and Syracuse, 9 per cent. Twenty-one per cent of the native-white women enumerated in the Greenville mill villages had spent all or most of the first ten years of married life in the open country. Among the foreign-whites considered, the following proportions had spent most of their first ten years of married life abroad: "poor areas in five cities," 18 per cent; Bushwick, 6 per cent; and Lower East Side, 16 per cent.

The coding also provided for social class of husband at marriage, based upon replies to questions concerning occupations at marriage. In examining the occupational origins of the enumerated professional, business, skilled, and unskilled classes separately, the following proportions of the total native groups were found to have begun their marital careers in a broad occupational group different from that recorded as "usual social class:" "poor areas in five cities," 18 per cent; Bushwick, 10 per cent; Lower East Side, 16 per cent; Greenville, 24 per cent; Columbus, 26 per cent; and Syracuse (1930-1931), 17 per cent. Among the foreign groups, corresponding proportions were: "poor areas in five cities," 25 per cent; Bushwick, 12 per cent; and Lower East Side, 16 per cent.

Even in samples with fairly high ratios of important change in residence or social class, however, the spatial and occupational shifts have little bearing upon the data for the last ten to fifteen years of the period under study. In Greenville, for instance, the above described rural origins of marriages were found among 5 per cent of women married under 10 years, 15 per cent of those married 10-19 years, 38 per cent of those married 20-29 years, and among 63 per cent of women married 30 years or more. In the "poor areas in five cities," foreign women spending most of the first ten years of marriage abroad constituted only 5 per cent of women married less than 10 years, 9 per cent of those married 10-19 years, 20 per cent of those married 20-29 years, and 43 per cent of women married 30 years or more. The association of occupational shifts with duration of marriage is illustrated by the native business and skilled groups in Columbus. In the business class, the proportions beginning married life in a different broad occupational group were 15 per cent,

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Such was not the case, however, as may be seen from later discussion of steps which were taken to maintain sizable numbers in the necessary subdivisions of data. In justice to the above lack of refinement, it should be stated that the limitations have little or no bearing on fertility comparisons by nativity and social class in recent years. Furthermore, the social class designations were determined from the entry "usual occupation of husband," a datum which was not necessarily identical with occupation at the time of enumeration, for the surveys were made during the depression. The designated "usual occupation," therefore, may reasonably be accepted as a fairly long-standing badge of social status.

Large numbers of women are required if chance fluctuations in annual birth rates are to be eliminated. After the present data were restricted to married women of childbearing age in the successive years considered and were further divided by nativity, social class, and age, the numbers in certain categories were very small. Several steps were taken to meet this situation. The "Health and Depression" data for Baltimore, Cleveland, Detroit, Pittsburgh, and Syracuse were combined and labeled "poor areas in five cities." Although the crude birth rates in these cities vary, the combination for purposes of studying trends in specific nativity, age, and social class groups appeared justified on the basis of rough similarity in size and location of these cities, and on the basis of similarity in type of neighborhood canvassed and number of families procured. Another step which has been taken to smooth out irregularities accruing from small numbers is the presentation of rates in terms of five-year moving averages centered on successive years. This procedure necessarily masks the characteristics of a specific year, but the elimination of sharp annual fluctuations is advantageous for the observance of trends. It is apparent, therefore, that the rates presented in this report do not warrant close interpretation. Their value con-

30 per cent, 35 per cent, and 44 per cent, respectively, for the four durations of marriage. Corresponding figures for the skilled class were 11 per cent, 18 per cent, 18 per cent, and 33 per cent, respectively.

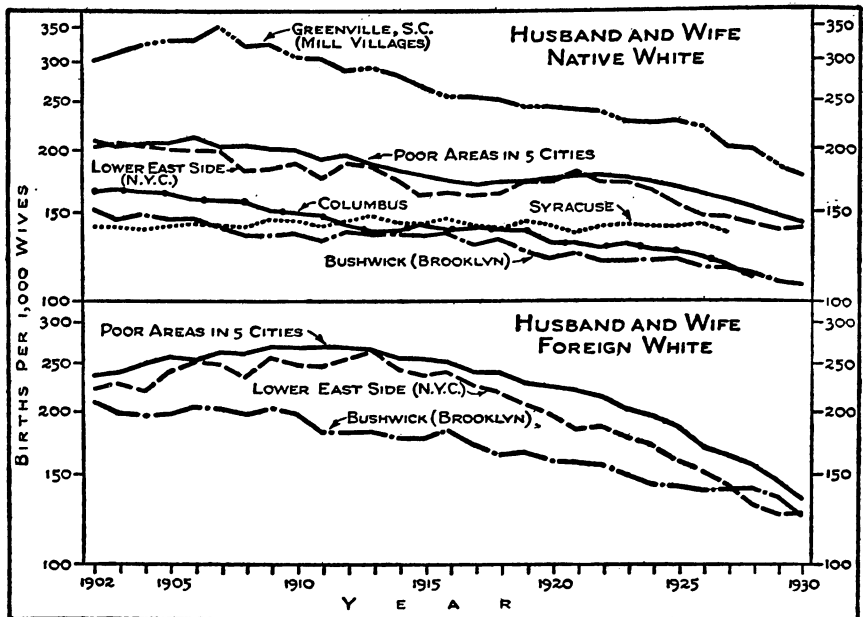


Fig. 1. Areal differences in levels and trends of birth rates among native and foreign-white married women of childbearing age. Annual rates per 1,000 wives are five-year moving averages, standardized for age, as shown in Tables 2 and 3.

sists in suggestive indications of relative trends in birth rates among specific groups of women.

Standardized Birth Rates by Area and Nativity. For systematic discussion, we shall be concerned, first, with series of standardized birth rates according to area and nativity; next, with age-specific birth rates according to area and nativity; and finally, with standardized birth rates⁹ according to area, nativity,¹⁰ and social class. The areal comparisons in levels and trends of birth rates among native and foreign groups may be seen at a glance from Figure 1, based upon Tables 2 and 3. Foreign-born groups were sufficiently large only for the "poor areas in five cities," the Lower East Side, and Bushwick. All rates have been plotted on semi-logarithmic paper in order to portray relative rates of change.

⁹ The standard used throughout this report is based upon the age distribution of urban white married females, 15-44, in the United States, as computed from the 1930 United States Census.

¹⁰ Throughout this paper the specified nativity refers to husbands as well as to wives. Native-foreign unions were not included in this analysis.

With respect to levels of fertility among native-white marriages, Table 2, Figure 1 (top), the points of chief interest are that (a) highest rates in the series are those observed among native-white women enumerated in the textile districts of Greenville, South Carolina, and surrounding villages; (b) much lower but still relatively high rates are indicated for women included in the "Health and Depression" surveys of poor areas in five northern cities and the Lower East Side (New York City); (c) rates are low among women represented in the Bushwick, Columbus, and Syracuse (1930-1931) surveys, for these were by no means confined to poor

Table 2. Average annual number of live births per 1,000 native-white married women of childbearing age in specified areas.¹ (Rates have been standardized for age and represent average annual fertility during the five-year period centering on specified dates.)

MID-YEAR OF FIVE-YEAR PERIOD	MILL VILLAGES GREENVILLE S. C.	POOR AREAS IN FIVE CITIES	LOWER EAST SIDE (N. Y. C.)	COLUMBUS	SYRACUSE (1930-1931)	BUSHWICK (Brooklyn)
	RATE PER 1,000 WOMAN-YEARS					
1902	301	208	205	165	141	153
1905	335	207	201	164	142	145
1910	310	200	190	150	145	138
1915	269	179	163	143	143	137
1920	245	176	175	132	142	122
1925	227	169	157	126	141	122
1928	199	153	143	112	137 ²	113
1930	177	143	141	—	—	108
NUMBER OF WOMAN-YEARS						
1902	719	2,085	287	3,168	1,942	3,006
1905	967	2,608	348	3,701	2,273	3,538
1910	1,423	3,527	503	4,639	2,885	4,507
1915	1,981	4,769	647	5,485	3,614	5,503
1920	2,531	6,375	863	6,289	4,587	6,432
1925	3,279	8,349	1,212	6,813	5,487	7,467
1928	3,856	9,489	1,391	6,957	5,755 ²	7,949
1930	4,201	10,137	1,447	—	—	8,125

¹This and succeeding tables are skeleton arrangements of the full data. The woman-years observed are stated in full numbers. Half-year fractions were raised if the preceding digit was an even number and dropped if preceding digit was odd.

²Refers to five-year period centering on 1927. See footnote 2.

MID-YEAR OF FIVE-YEAR PERIOD	POOR AREAS IN FIVE CITIES	LOWER EAST SIDE (N. Y. C.)	BUSHWICK (Brooklyn)
	RATE PER 1,000 WOMAN-YEARS		
1902	240	224	211
1905	258	243	199
1910	271	251	200
1915	258	238	177
1920	226	201	160
1925	188	162	143
1930	136	127	126
	NUMBER OF WOMAN-YEARS		
1902	1,938	643	1,987
1905	2,615	789	2,121
1910	3,903	1,129	2,311
1915	5,257	1,534	2,401
1920	6,121	1,868	2,491
1925	6,568	2,047	2,582
1930	5,817	1,907	2,661

Table 3. Average annual number of live births per 1,000 foreign-white married women of childbearing age in specified areas. (Rates have been standardized for age.)

areas. Among these three cities, Bushwick was characterized by lowest fertility levels, perhaps due to metropolitan influence as well as to the fairly wide range of economic status represented.

The birth rates presented in the top section of Figure 1 are also of value for their bearing on the general question of declines in fertility of native-white stock. Our knowledge concerning this question has been very limited due to the inadequacies of official data for such an analysis. It is clear that in no area are the rates observed at the end of the period as high as those observed at the beginning. On the other hand, the nature of the trend lines ranges from that for women in Greenville mill villages, in which a fairly continuous decline in high fertility is observed since 1907, to that for women included in the Syracuse (1930-1931) survey, which shows no decline whatsoever¹¹ until about 1926. In the other areas,

¹¹ A previous attempt to analyze trends in the fertility of native-white groups covered in the Columbus and Syracuse (1930-1931) surveys was made by comparison of cumula-
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periods of varying rates of decline appear to have been interrupted by periods of fairly stationary fertility. On the basis of these data, it would seem that generalizations concerning trends in fertility of native-white women cannot neglect reference to area, urbanism, levels of birth rates, and period of time considered.

In regard to areal differences in levels of birth rates among foreign-born women, essentially the same type of comparison is found, Table 3, lower section of Figure 1. Until recent years, at least, the foreign-born women in the sample rigidly confined to poor areas both in the five cities and in the Lower East Side, have been more fertile than those drawn from Bushwick.

The trends in birth rates of the foreign groups differ radically from those observed among native-whites of the same area. Especially sharp declines from previously high levels of fertility were observed among the foreign groups enumerated in the "poor areas in five cities" and in the Lower East Side (New York City).¹² From approximately 1920 until the end of the period the rate of decline of birth rates of foreign groups doubled that of native groups in the same areas. In the "poor areas in five cities," the declines were 40 per cent among the foreign groups and 19 per cent among native groups. In the Lower East Side they were 37 per cent and 19 per cent, respectively, and in Bushwick, 22 per cent and 11 per cent.

In the "poor areas in five cities" and in the Lower East Side, the birth rates of foreign groups at the end of the period under study were actually as low or lower than those observed among native

tive birth rates according to social class, date and duration of marriage. The professional, business, and skilled classes were separately analyzed in each city. With the type of rate employed, the Columbus business class was alone in indicating decline, except in very recent years, among native-white women of specific social status. See Notestein, F. W. and Kiser, C. V.: *op. cit.*, pp. 605-611.

¹² The upward trends in birth rates during the few initial years, observed among foreign women enumerated in the "poor areas of five cities" and in the Lower East Side and among native-white women in Greenville, South Carolina, possibly do not reflect true situations. The upward trend shown may be the spurious result of small numbers in the samples for those years, but it appears more likely to arise from under-enumeration of births occurring 20-30 years before the enumeration. Failure to report such births would appear more likely among women having many to report and especially among foreign-born women with limited use of the English language.

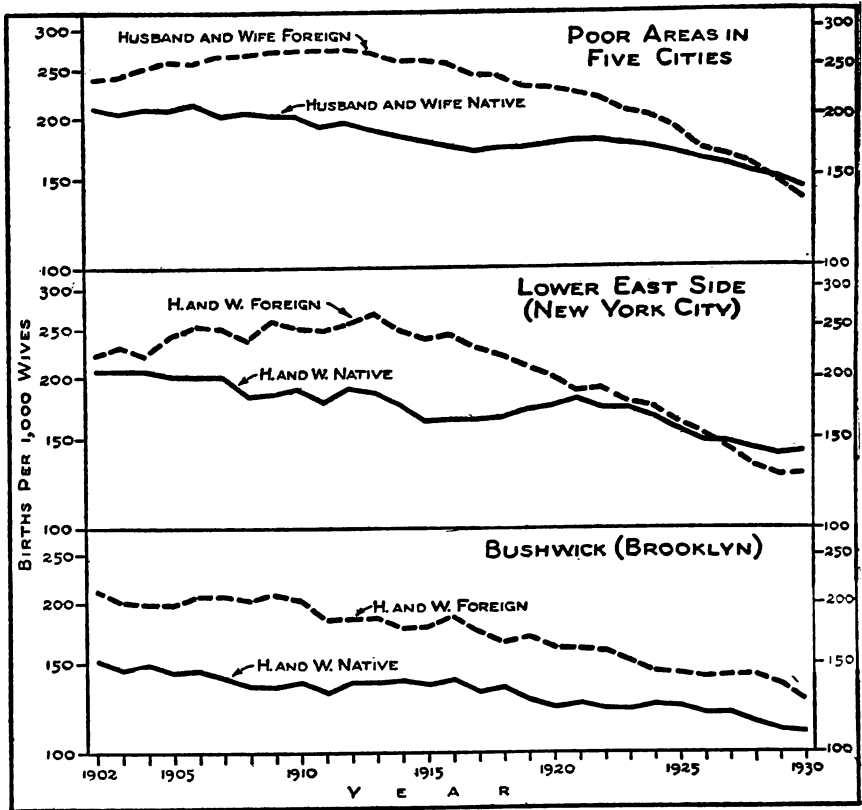


Fig. 2. Differences by nativity in levels and trends of birth rates in specified areas. Annual rates per 1,000 wives are five-year moving averages, standardized for age, as shown in Tables 2 and 3.

groups. Knowledge of this situation may come as a surprise to those who were schooled in the urban sociology of fifteen years ago, when the high fertility rates of immigrant groups were posited as an acute social problem. It should be emphasized that this situation exists independently of the influence of such factors as cessation of immigration and aging of the foreign women, for we are here dealing with standardized and age-specific birth rates in surveyed populations.¹³ Graphic comparisons by nativity are available in Figure 2, in which the birth rates of native and foreign groups are shown

¹³ It is possible that the process of selection of large families into poor urban neighborhoods operates more strongly among native groups than among foreign groups. Even if this were the case, however, it would have little bearing upon the conspicuous nativity differences in the trends observed.

together for each of three sets of data yielding such analysis. It is evident that in the "poor areas in five cities" and in the Lower East Side the formerly marked excess of birth rates among foreign groups over those of native groups no longer exists. Although the observed differences in the direction of higher fertility among the native women are too small for application beyond the above two samples,¹⁴ yet it is safe to say that at the end of the period foreign women were no longer more fertile than the native women in the two specified areas. If the last observed trends have continued, the foreign women in those areas are today less fertile than their native-white neighbors.

The earlier convergence of the rates in the Lower East Side arises from the fact that here continuous declines in birth rates began five to eight years earlier among the foreign-born than among the native. This may be due to a combination of factors which are peculiar to this area, such as the greater homogeneity in type of neighborhood (since only one area was involved). Too, the metropolitan influence on the foreign-born may have operated to bring about an earlier decline in their fertility. In Bushwick, characterized by wider ranges in economic status, the higher fertility rates of the foreign women persist throughout the period under study, but the differences have diminished considerably.

Birth Rates According to Age and Nativity. Foregoing rates have been standardized for age but it is of interest to examine the areal

¹⁴ The following figures indicate the degree of reliability of observed nativity differences in fertility among women drawn from the "poor areas in five cities," Bushwick, and the Lower East Side. It will be seen that at the end of the period under study the excess of native fertility over foreign fertility was scarcely significant in the "poor areas in five cities" and was not significant in the Lower East Side. The excess of foreign fertility in Bushwick was statistically reliable.

AREA	RATES 1928-1932		DIFFERENCE ± STANDARD ERROR
	Native	Foreign	
"Five Cities"	143	136	7 ± 5.7
Bushwick	108	126	18 ± 7.1
Lower East Side	141	127	14 ± 14.3

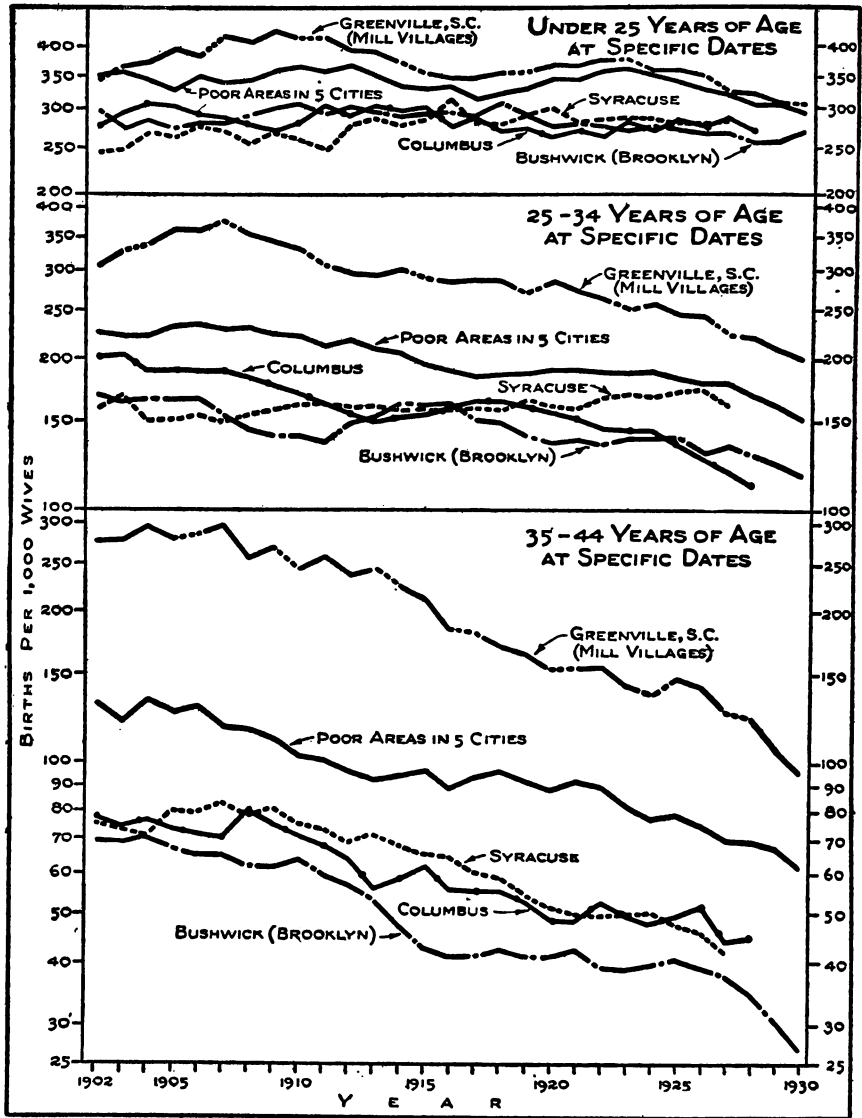


Fig. 3. Areal comparisons in levels and trends of birth rates for native-white married women of specific ages. Annual rates per 1,000 wives are five-year moving averages for which skeleton data are presented in Tables 4, 5, and 6.

and nativity comparisons of levels and trends in fertility among women within identical age groups. In Figure 3 (plotted from data represented by Tables 4, 5, and 6), the average annual birth rates

MID-YEAR OF FIVE-YEAR PERIOD	AGE OF WOMEN AT SPECIFIED DATES					
	Under 25		25-34		35-44	
	Native	Foreign	Native	Foreign	Native	Foreign
	RATE PER 1,000 WOMAN-YEARS					
1902	341	354	227	277	129	148
1905	324	350	234	302	126	171
1910	360	390	224	315	102	170
1915	322	395	195	290	97	164
1920	342	349	191	242	88	152
1925	337	346	183	187	79	119
1930	293	278	158	146	61	65
	NUMBER OF WOMAN-YEARS					
1902	539	631	1,011	896	534	411
1905	663	865	1,216	1,170	729	581
1910	933	1,185	1,481	1,797	1,113	920
1915	1,337	1,353	1,963	2,580	1,469	1,325
1920	1,756	1,008	2,811	3,088	1,808	2,025
1925	2,187	737	3,756	2,882	2,405	2,949
1930	2,464	363	4,431	2,073	3,241	3,381

Table 4. Average annual number of live births per 1,000 married white women of specified age and nativity in "poor areas in five cities."

are shown, by area,¹⁵ for native-white married women under 25, 25-34, and 35-44 years of age. Corresponding data for foreign marriages are presented in Figure 4, based upon Tables 4 and 5. Several striking points emerge from this analysis. In the first place, comparison of the upper and lower sections of Figures 3 and 4 clearly shows that in each area and in both nativity groups declines in fertility have been smallest among the youngest married women and most conspicuous among those in the later ages of the child-bearing period.¹⁶ In the second place, the areal differences in levels

¹⁵ The Lower East Side sample was inadequate for analysis of age-specific birth rates, by nativity.

¹⁶ The above findings are similar to the results secured from available analyses of official data. See (a) Thompson, W. S. and Whelpton, P. K.: *POPULATION TRENDS IN THE UNITED STATES*. New York, McGraw-Hill Book Company, 1933, pp. 269-271; (b) Kiser, C. V.: *Recent Trends in Birth Rates Among Foreign and Native-White Married Women in* (Continued on page 62)

MID-YEAR OF FIVE-YEAR PERIOD	AGE OF WOMEN AT SPECIFIED DATES					
	Under 25		25-34		35-44	
	Native	Foreign	Native	Foreign	Native	Foreign
	RATE PER 1,000 WOMAN-YEARS					
1902	295	373	172	242	69	106
1905	269	336	166	242	68	93
1910	300	330	141	242	64	99
1915	289	298	163	221	43	79
1920	273	318	136	175	41	75
1925	270	289	140	149	40	71
1930	269	224	118	156	27	53
	NUMBER OF WOMAN-YEARS					
1902	545	292	1,501	853	995	842
1905	627	330	1,697	835	1,214	956
1910	876	391	1,957	897	1,675	1,023
1915	885	383	2,601	993	2,017	1,026
1920	979	299	3,091	1,163	2,361	1,028
1925	1,097	249	3,219	1,149	3,151	1,185
1930	1,158	161	3,300	1,124	3,667	1,377

Table 5. Average annual number of live births per 1,000 married white women of specified age and nativity in Bushwick. (Rates have been standardized for age.)

of annual birth rates were smallest among youngest women and greatest among the oldest women. This was true for the native and foreign groups. It would appear that the net areal differences in fertility (observed in Figures 1 and 2) arise largely from differences in the extent to which women continue bearing children in the advanced fertile years of married life. In this connection it is interesting to note the extremely high birth rates of Greenville women 35-44 during the early years of the period under study. More closely than in any other area did these rates approach those for women under 25.¹⁷

In the third place, the previously observed areal differences in Up-State New York. *The Milbank Memorial Fund Quarterly*, April, 1936, xiv, No. 2, pp. 173-179.

¹⁷ This fact is probably associated with the high proportion of rural origins of marriages of long duration in this area (see footnote 8).

MID-YEAR OF FIVE-YEAR PERIOD	AGE OF WOMEN AT SPECIFIED DATES								
	Under 25			25-34			35-44		
	Columbus	Syracuse (1930-31)	Greenville S. C.	Columbus	Syracuse (1930-31)	Greenville S. C.	Columbus	Syracuse (1930-31)	Greenville S. C.
	RATE PER 1,000 WOMAN-YEARS								
1902	275	244	340	203	160	308	78	76	277
1905	302	259	388	191	151	364	74	81	280
1910	277	258	409	171	163	331	72	75	243
1915	297	282	351	156	158	289	62	66	212
1920	262	301	363	156	161	284	48	51	152
1925	280	274	357	136	173	248	49	47	148
1928	265	285 ¹	318	113	164 ¹	223	45	42 ¹	122
1930	—	—	303	—	—	201	—	—	95
	NUMBER OF WOMAN-YEARS								
1902	615	360	318	1,577	933	321	977	649	79
1905	649	424	405	1,831	1,070	440	1,221	779	121
1910	804	500	531	2,097	1,359	637	1,738	1,026	255
1915	863	561	701	2,446	1,707	809	2,177	1,346	471
1920	951	705	803	2,807	2,125	1,077	2,530	1,757	651
1925	933	761	1,121	2,913	2,555	1,312	2,967	2,171	846
1928	981	734 ¹	1,428	2,767	2,683 ¹	1,421	3,209	2,338 ¹	1,007
1930	—	—	1,500	—	—	1,546	—	—	1,155

¹Refers to five-year period centering on 1927. See Footnote 2.

Table 6. Average annual number of live births per 1,000 native-white married women of specified age in Columbus, Syracuse (1930-1931) and Greenville areas. (Rates have been standardized for age.)

trends of birth rates of native-whites did not exist uniformly in the three age groups. Figure 1, for instance, dealing with the total native women in each area, brings out the contrast between a practically stationary birth rate in Syracuse and a sharp downward trend in Greenville. When, however, the data are broken down by age classifications, no such decided contrast appears. It is most surprising that even in the City of Syracuse, characterized by low and stationary fertility, the birth rate of women in the group 35-44 years of age has declined since about 1910 at a rate approximating that found among women of these ages in the high birth rate area of Greenville. It is only among women 25-34 that the areal differences

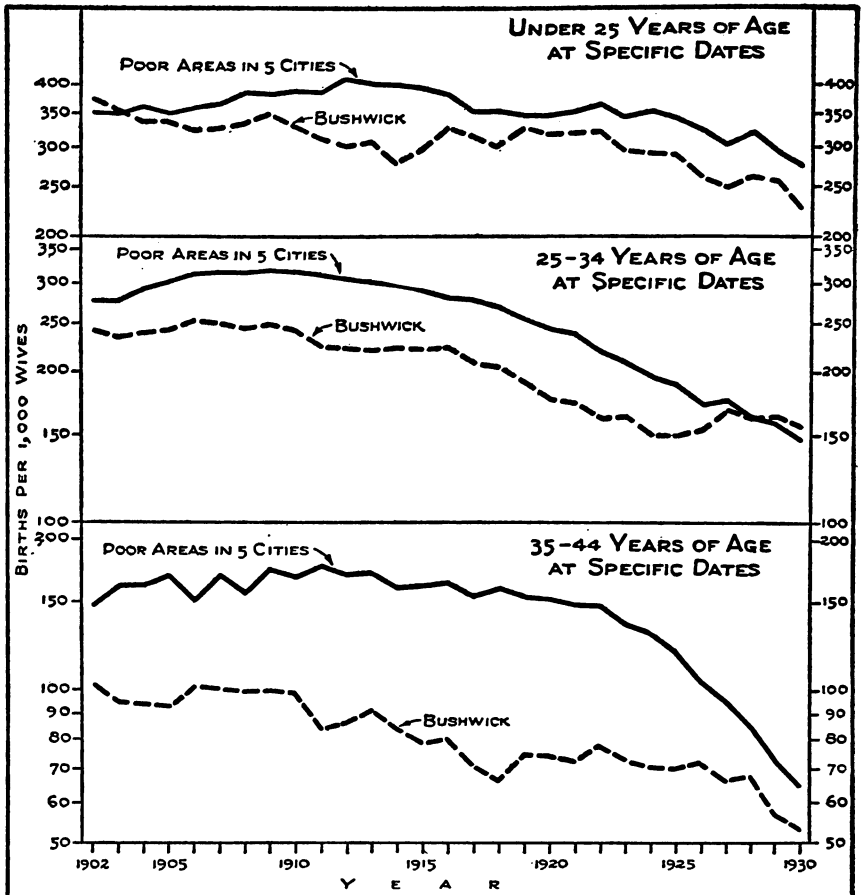


Fig. 4. Areal comparisons in levels and trends of birth rates for foreign-white married women of specific ages. Annual rates per 1,000 wives are five-year moving averages for which skeleton data are presented in Tables 4 and 5.

observed in Figure 1 persist in strong fashion, for when the groups under 25 are isolated the areal contrasts in trends are again diminished. Among Greenville and Lower East Side women of the youngest ages, slight but interrupted declines have taken place and the trends of rates in these two areas are strikingly alike. Barring the slow but persistent upward trend visible in the rate for Syracuse at the beginning of the period, the trends in fertility of the youngest women in three "low birth rate" areas (Bushwick, Columbus, and Syracuse) have been very similar.

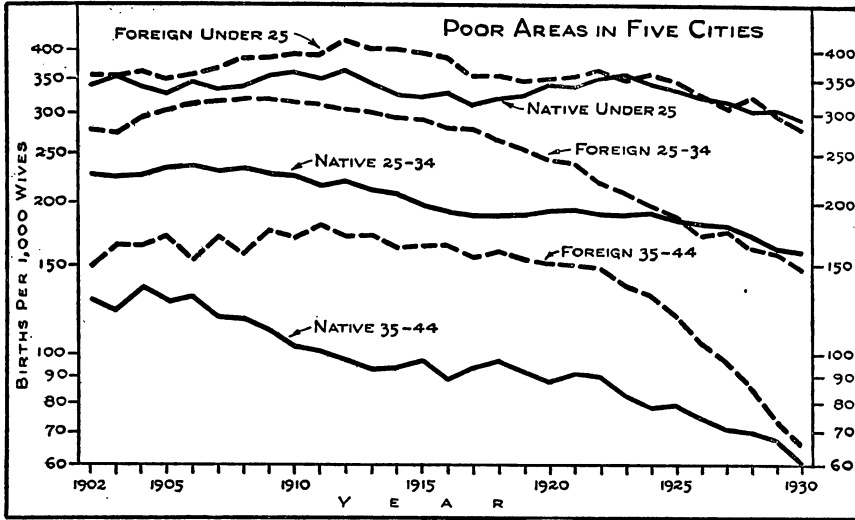


Fig. 5. Nativity comparisons in levels and trends of age-specific birth rates for married white women in the "poor areas in five cities." Annual rates per 1,000 wives are five-year moving averages for which skeleton data are shown in Table 4.

The differences in trends among foreign women in the "poor areas in five cities" and in Bushwick are likewise not uniform in the various age groups. Unlike the trends for native women, those for the foreign-born were most dissimilar in the oldest age group during the close of the period studied. Until 1922 fertility trends among the oldest foreign-born women in the two areas concerned were fairly alike, but about that time the rates for the foreign women in the "poor areas in five cities" began to drop precipitately from their previously high level while the lower rates among the foreign women in Bushwick continued their gradual decline. On the other hand, like those of the native group, fertility trends among the foreign women under 25 were quite similar in the two areas considered.

In order to bring out the nativity differences in levels and trends of birth rates among women of the same age, the data for the "poor areas in five cities" and Bushwick have been re-plotted in Figures 5 and 6. A fact of arresting interest is revealed in Figure 5. It appears that in the "poor areas in five cities" equalization of birth rates

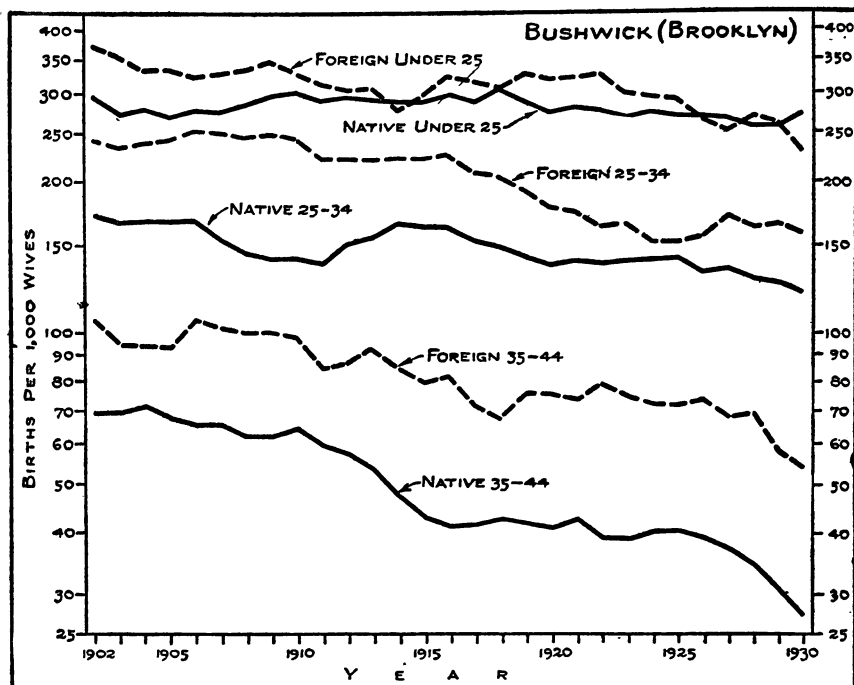


Fig. 6. Nativity comparisons in levels and trends of age-specific birth rates for married white women in Bushwick. Annual rates per 1,000 wives are five-year moving averages, as shown in Table 5.

among native and foreign women 35-44 years of age was just beginning to be attained at the end of the period under investigation. Similarity of birth rates was reached about six years earlier among women 25-34 and about ten years earlier among women under 25. This situation arose from the fact that prior disparities in native-foreign rates were greatest among women of the oldest ages and least in evidence among the youngest. Furthermore, although the decline in fertility of the foreign women in the oldest ages was strikingly abrupt, the advent of the decline itself was later than that observed either among native women of the same age or among foreign women of younger ages.

A similar association of nativity differences in fertility with age of women is observed from the Bushwick data, Figure 6. Throughout the period, there was little substantial nativity difference in the

MID-YEAR OF FIVE-YEAR PERIOD	POOR AREAS IN FIVE CITIES						COLUMBUS	
	Business		Skilled		Unskilled		Business	Skilled
	Native	Foreign	Native	Foreign	Native	Foreign	Native	Native
	RATE PER 1,000 WOMAN-YEARS							
1902	170	233	212	233	209	253	158	165
1905	175	258	207	252	218	254	162	156
1910	155	250	204	261	206	265	140	145
1915	168	214	180	234	189	281	129	142
1920	159	190	177	197	193	262	124	135
1925	139	177	168	178	206	205	111	135
1928	141	124	154	150	168	185	105	122
1930	124	116	145	128	153	160	—	—
	NUMBER OF WOMAN-YEARS							
1902	293	352	1,237	1,239	832	921	1,321	1,075
1905	361	433	1,556	1,605	957	1,201	1,601	1,308
1910	490	559	2,157	2,310	1,151	1,723	2,073	1,684
1915	637	711	3,019	3,002	1,369	2,264	2,502	1,957
1920	802	759	4,179	3,559	1,659	2,541	2,899	2,299
1925	1,116	818	5,509	3,945	2,021	2,578	3,010	2,655
1928	1,345	775	6,193	3,789	2,215	2,362	2,959	2,819
1930	1,521	687	6,548	3,451	2,138	2,120	—	—

Table 7. Average annual number of live births per 1,000 married white women of childbearing age according to social class and nativity in "poor areas in five cities" and in Columbus. (Rates have been standardized for age.)

fertility of women under 25, and the previous excess of foreign fertility among women 25-34 diminished considerably toward the end of the period. On the other hand, a strong persistence of the disparity in foreign-native birth rates is seen among women 35-44. There have been fairly continuous declines in the upper-age fertility of both nativity groups in Bushwick, but rates of decrease have been practically uniform. This may be inherent in the fact that the levels of the birth rates of both nativity groups have been very low relative to those of women of comparable age and nativity in the poor areas.

Trends in Birth Rates by Social Class and Nativity. Since laboring pursuits are more frequently represented among urban foreign

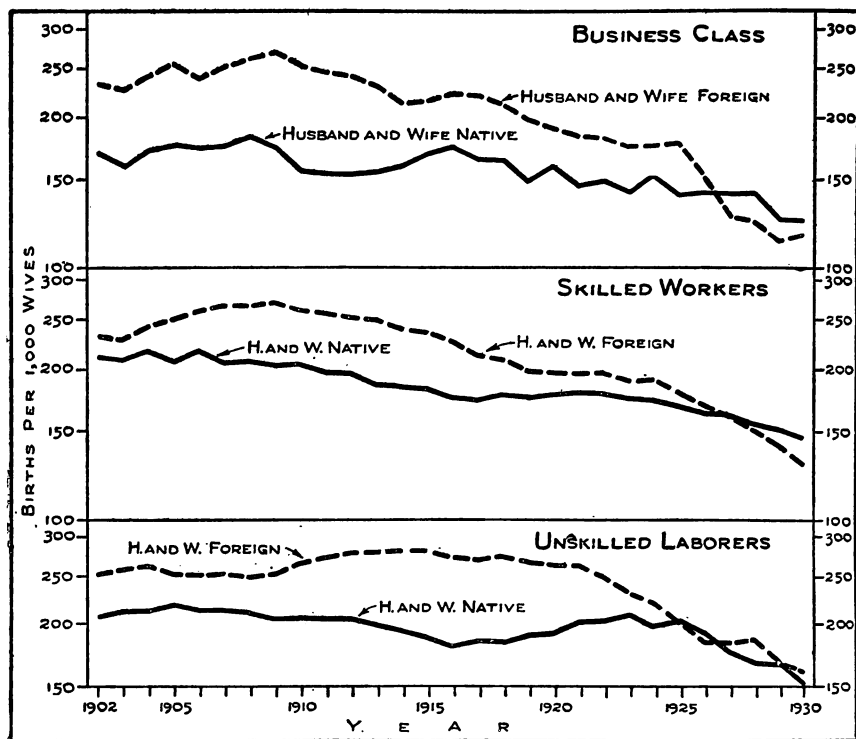


Fig. 7. Nativity comparisons in levels and trends of birth rates among white married women of specified occupational groups in the "poor areas in five cities." Annual rates per 1,000 wives are five-year moving averages, standardized for age, as shown in Table 7.

groups than among native groups in the same areas, it is of interest to compare birth rates among groups of different nativity but of the same broad occupational class. Such comparison could be made among representatives of the business, skilled, and unskilled classes in the "poor areas in five cities" and in Bushwick. From Table 7 and Figure 7, it is apparent that among women included in the surveys of "poor areas in five cities" the disappearance or reversal of the former excess in foreign fertility has definitely occurred in each of the social-economic groups.¹⁸ Furthermore, these data suggest that in the "poor areas in five cities" the equalization in birth rates of the total native and foreign groups (Figure 2) was delayed some-

¹⁸ One should discount the accuracy of the extremely abrupt recent declines in the birth rates of the foreign business group in the "poor areas in five cities," because numbers upon which all rates of this group were based were very small.

MID-YEAR OF FIVE-YEAR PERIOD	BUSHWICK						SYRACUSE (1930-1931)	
	Business		Skilled		Unskilled		Business	Skilled
	Native	Foreign	Native	Foreign	Native	Foreign	Native	Native
	RATE PER 1,000 WOMAN-YEARS							
1902	137	209	160	203	186	215	133	147
1905	130	172	153	191	178	213	139	157
1910	126	172	145	192	180	252	129	155
1915	122	169	143	174	188	208	133	154
1920	118	153	123	157	150	192	122	154
1925	103	174	131	137	154	155	130	147
1928	107	178	115	137	133	144	126 ¹	140 ¹
1930	106	136	109	122	111	140	—	—
	NUMBER OF WOMAN-YEARS							
1902	927	443	1,664	1,155	275	295	687	797
1905	1,074	458	1,934	1,246	319	324	811	956
1910	1,392	491	2,459	1,351	389	363	1,029	1,293
1915	1,749	517	2,954	1,404	495	380	1,351	1,601
1920	2,106	511	3,423	1,490	547	393	1,643	2,100
1925	2,489	497	3,995	1,585	601	416	1,982	2,546
1928	2,644	479	4,251	1,671	658	416	2,120 ¹	2,611 ¹
1930	2,663	479	4,351	1,696	703	405	—	—

¹ Refers to five-year period centering on 1927. See Footnote 2.

Table 8. Average annual number of live births per 1,000 married white women of childbearing age according to social class and nativity in Bushwick and Syracuse (1930-1931) areas. (Rates have been standardized for age.)

what by differences in social class composition. In each social class considered separately, the birth rates of the foreign groups fell below or dropped as low as those among native groups from two to four years earlier than was the case when social class composition was disregarded.

From the Bushwick data (Table 8, Figure 8) valid comparisons of trends in fertility of native and foreign groups of the same occupational level are limited by the small numbers upon which rates are based for the foreign business class and for the native and foreign unskilled classes. The observed trends for the above groups

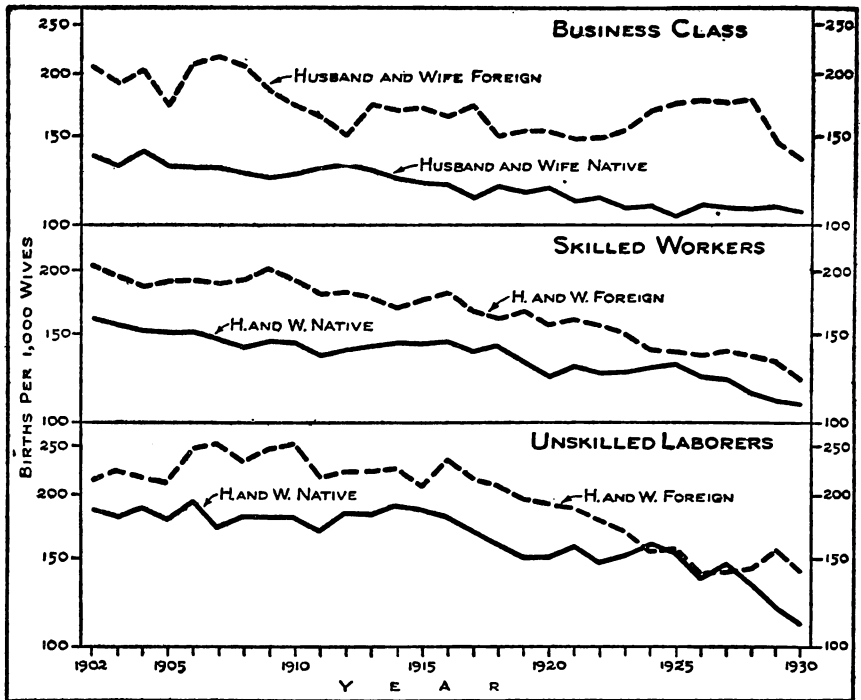


Fig. 8. Nativity comparisons in levels and trends of birth rates among white married women of specified occupational groups in Bushwick. Annual rates per 1,000 wives are five-year moving averages, standardized for age, as shown in Table 8.

are obviously erratic. There is the suggestion, however, that the excess of foreign fertility has persisted more strongly in the business class than in either laboring class. Had larger samples been available, it is likely that they would reveal no nativity difference in the fertility of unskilled laborers at the end of the period under study.¹⁹

It may appear to the reader that the above materials might be used for an indication of trends in the social class differences in fertility among women of the same nativity. For this purpose, however, the value of the data is limited. In the first place, the "Health and Depression" surveys were confined to poor areas. Not only are the ranges of economic status narrow, but it also seems likely that

¹⁹ In the "poor areas in five cities" there was no significant nativity difference in the birth rates of either the business or the unskilled class at the end of the period under study. The excess native fertility among the skilled classes was statistically reliable. In Bushwick, birth rates were higher among the foreign-born in each of the three social classes. This (Continued on page 71)

the occupational groups represented are not equally representative of their respective universes. For instance, unskilled laborers in poor areas are probably fairly representative of that occupational group throughout the respective cities, but this is perhaps not true of skilled workers and is almost surely untrue for the white-collar workers residing in poor neighborhoods. For these reasons, the trends in social class differences in fertility observed there would have limited bearing on the general problem.

An additional limitation is the erratic nature of the rates among occupational groups in which samples were small. This is obviously of more consequence in the exploration of trends in the comparatively narrow social class differences than in the study of the more pronounced nativity differences. For the above reasons, the data are presented in Figure 9 only for the native-white²⁰ business, skilled, and unskilled classes in Bushwick, and for the native-white business and skilled classes in Columbus and Syracuse.

In considering trends in social class differentials in fertility among native-whites of Bushwick, top section of Figure 9, the influence of fluctuations in the birth rates of unskilled laborers

excess of foreign fertility was highly significant in the business group and moderately so in the skilled and unskilled classes.

AREA AND SOCIAL CLASS	RATES 1928-1932		DIFFERENCE \pm STANDARD ERROR
	Native	Foreign	
"Five Cities"			
Business	124	116	8 \pm 15.1
Skilled	145	128	17 \pm 7.3
Unskilled	153	160	7 \pm 11.2
Bushwick			
Business	106	136	30 \pm 15.6
Skilled	109	122	13 \pm 9.1
Unskilled	111	140	29 \pm 20.5

²⁰ The data were inadequate for presenting charts of trends in social class differences among immigrant groups. Actual plotting of the full data suggested, however, that occupational variations in fertility of foreign women were less than those among native groups. In general it appeared that rates for unskilled laborers were higher than those for the business and skilled groups, but the latter two classes were practically undifferentiated as to fertility.

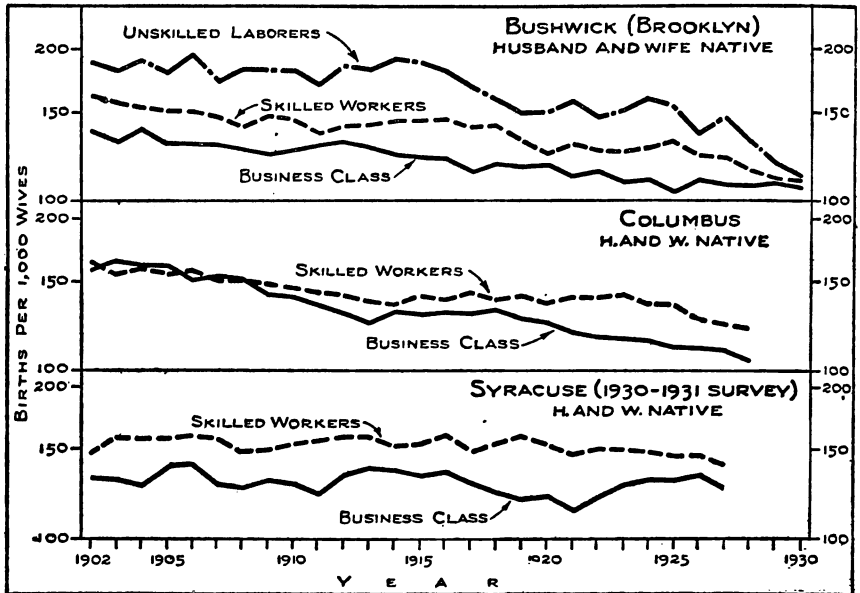


Fig. 9. Occupational comparisons in levels and trends of birth rates among native-white married women of childbearing age in Bushwick, Columbus, and Syracuse. Annual rates per 1,000 wives are five-year moving averages, standardized for age; data for Columbus are shown in Table 7 and for Bushwick and Syracuse in Table 8.

should be discounted because the numbers in this group were small. When this is done, it appears that the variations in fertility among social classes may have remained fairly constant until about 1925, after which time they were reduced. The data, however, do not warrant the conclusion that social class differentials in fertility have disappeared in Bushwick. The rates for the skilled and business classes alone are based upon fairly substantial numbers, but this cannot be said for the unskilled class, and representatives from the professional class are absent altogether.

The lack of differentiation between the Columbus native skilled and business classes during the early part of the period probably arises from the rather high proportion of rural origins among families included in that sample.²¹ The differences between these classes

²¹ Studies based upon samples drawn from the 1910 Census schedules and concerning total number of children born to native-white marriages have established the fact of business-skilled differentials in fertility among women definitely residing in Columbus in 1910. See Notestein and Kiser, *op. cit.*, p. 600.

in Columbus appear to have been widest about 1923, middle section of Figure 9. There may have been some convergence since that time. At all events, the rates of the two classes did not diverge during the last five years under investigation.

The general conclusion derived from the Syracuse data, lower section of Figure 9, is that throughout the major part of the period under study the business-skilled differentials in fertility have remained fairly constant among native-whites in that City. The rates for both classes were as high during the five-year period centering on 1926 as they were during the initial mid-year, 1902. Uniform rates of decline in the two classes are shown when the mid-years 1926 and 1927 are compared. The fluctuations observed in the rates for the business class are probably not real, but there is the suggestion that the business-skilled differences were enhanced from about 1916 to 1921 and were diminished to former ratios during the quinquennium 1922-1926.²²

Concerning recent general trends, therefore, about all that can be said with assurance is that during recent years the social class differences have not widened. It is possible that some convergence took place, but these data afford no conclusive evidence on this point.

The results of this study clearly indicate that declines in birth rates have not fallen with equal force upon all areas or upon all elements of the population within the same area. The most important points brought out by the investigation may be summarized as follows:

(1) In general, net declines during the period under study have been least in areas characterized by low birth rates at the beginning

²² Such interpretation is supported fairly well in terms of statistical reliability. The observed decline in the business rate from that of the five-year period centering on 1916 to that of the 1921 mid-year quinquennium was from 136 to 114 (difference 22 ± 11.9 standard error). The business-skilled difference in birth rates during the 1921 mid-year quinquennium was 33 ± 11 standard error. On the other hand, the business-skilled difference during the mid-year 1927 quinquennium was not significant (difference 14 ± 10.0 standard error).

of the period and greatest in areas where fertility rates were formerly very high.

(2) The rates of recent decline have been more striking among the foreign-born than among native-whites, and this remains true apart from such factors as stoppage of immigration, differences in age or social class composition, and proportions residing in cities. In areas characterized by poor economic status, the abrupt decline of fertility among the foreign-born has brought the birth rate of these groups down to levels which are as low as, or lower than, those of the native-whites in the same neighborhoods.

(3) Among both native and foreign-born married women, the rate of decline has been most striking in the group 35-44 years of age and least in evidence among wives under 25. The former excess of fertility of immigrants over that of native groups of the same area, however, was greatest among women of the older ages, and least among women under 25. The net result has been that equalization of birth rates among foreign and native women of the youngest ages has preceded or is preceding such equalization among women in the older ages.

(4) Among women of identical nativity, variations in *levels* of fertility, by area, have been greatest among women 35-44 and least among the youngest women. On the other hand, areal differences in *trends* in birth rates have been absent altogether among women 35-44, greatly diminished among women under 25, and most pronounced among those 25-34.

(5) There is no evidence of any recent enlargement of social class differences in fertility among native-whites in Bushwick, Columbus, and Syracuse samples. On the contrary, although the data are not conclusive on this point, the weight of the evidence points toward some recent contraction of such differences.