DIFFERENTIAL FERTILITY IN MADISON COUNTY, NEW YORK, 1865

WENDELL H. BASH[1]

THE hypothesis that the "normal" pattern of differential fertility in a population is that of a "J" shaped curve rather than a straight line inverse relationship between birth rates and social status has gained increasing acceptance in recent years. According to the interpretation of the history of these patterns, the straight line inverse relationship is a product of the diffusion of contraceptive information through a population, beginning in the upper classes and in the urban centers and spreading downward and outward. Most of our reliable information about differential fertility falls into the period of this transition, and actually toward the end of it as we can make out the cycle.[2] Verification of the "J" hypothesis depends upon the most recent census information in the United States and Europe,[3] and this is necessarily incomplete. The surge in the birth rate of these nations during the 1940's and early 1950's is closely related to the rapidly rising marriage rate and consequent speeding up of family formation. Not until reproductive histories of this generation of wives is more complete can we be certain, even though there are many indications in census materials,[4] of some real change in family size.

Another source of materials for the verification of the "J" hypothesis can be in the historical period before the beginning of this transitional period. Unfortunately, Western nations in this stage of the cycle rarely collected census information usable for this analysis, and this has also been true of those non-West-

[1] From the Department of Sociology, Colgate University. This study was made possible by assistance from the Milbank Memorial Fund and by the friendly advice and counsel of Clyde V. Kiser.

[2] For an exception, *see* Jaffe, A. J.: Fertility Differentials in the White Population in Early America. *Journal of Heredity*, 31, No. 9, September, 1940, pp. 407–411.

[3] Edin, K. A. and Hutchinson, E. P.: STUDIES OF DIFFERENTIAL FERTILITY IN SWEDEN. London, P. S. King & Son, Ltd., 1935; Innes, John W.: CLASS FERTILITY TRENDS IN ENGLAND AND WALES, 1876–1934. Princeton University Press, 1938. Also, the entire "Indianapolis Study" is related to this problem.

[4] Whelpton, P. K.: COHORT FERTILITY. Princeton University Press, 1954.

ern nations which today fall into the early stage of demographic development.[5] Nevertheless, we can help to extend the time span within which we have substantially reliable information by referring to manuscript copies of some censuses.[6] Published data help to provide a context for special studies.

The Census of the State of New York in 1865 is one such source inasmuch as it included a question on completed fertility. The published volume provided only a tabulation of the number of women who had had specified numbers of children, by county and for the native and foreign-born population, but the manuscript copies located in most of the court houses in the State make possible detailed tabulations by occupation and other measures of social status with age and marital condition controlled.

This study is concerned with 5,343 women in Madison County in 1865 with special attention to 4,300 of these women who were native white. Cards were prepared only for couples who had been married only once, thus omitting plural marriages for either spouse, widows, and women who were listed as married but with no husband listed on the household schedule.[7]

Madison County in Relation to Other Counties

The editors of the New York State Census of 1865 expressed a faith that the returns were reasonably accurate on cumulative fertility. Instructions to the census takers were as follows:

> 11. *Of how many children the parent.*—This inquiry is to be made only of adult *females,* and usually of wives or widows. It should, in all cases, include the number of living children the woman has borne, *whether now living or dead,* and *whether present or absent* from the family. These children may perhaps be

[5] Chen, Ta: Population in Modern China. *American Journal of Sociology,* LII, No. 1, Part 2, July, 1946.

[6] Sydenstricker, Edgar and Notestein, Frank W.: Differential Fertility According to Social Class. *Journal of the American Statistical Association.* 25 (NS) 169: 9–32, March, 1930; Sydenstricker, Edgar: A Study of the Fertility of Native White Women in a Rural Area of Western New York. Milbank Memorial Fund *Quarterly Bulletin.* 10: 17–32, January, 1932.

[7] In one tally of 3,453 married women, some 14 per cent were widowed, and 2 per cent were listed as married with no husband in the household.

themselves the heads of families, and residents of another state, or they may have died in childhood. The object of the inquiry is to obtain data for determining the natural increase of the population in this state among the various classes, and it should be taken fully and uniformly to possess value. Be careful to note in this column the number of children borne by females now aged, as well as that of those now surrounded by their families. We can thus determine the relative rate of increase of a former age, for comparison with the present.[8]

No detailed check of the completeness of this enumeration is possible on a statewide basis, since the published data included nothing on age or marital condition. Nevertheless, the editors' guess that the census was reasonably complete seems to be justified since the tables derived from the manuscript copies of the census include only eighteen wives for whom no information about fertility was obtained.

The published data on completed fertility indicate a generally negative relationship between the birth rate and urbanization and industrialization. The number of children ever born per 100 women was calculated for each county and for native and

Table 1. Correlations between native and foreign birth rates by counties and indexes of urbanization, New York, 1865.

	Children Ever Born per 100 Native White Women	Children Ever Born per 100 Foreign-Born White Women	Per Cent Population Foreign Born	Number Unable to Read and Write per 1,000 Population	Number of Persons Employed per 1,000 Population
Population per Square Mile	−0.44[a]	−0.57[a]	0.72[a]	*	0.42[a]
Number of Persons Employed per 1,000 Population	0.10	−0.24	0.34	0.38	
Number Unable to Read and Write per 1,000 Population	0.13	0.30	0.38		
Per Cent Population Foreign Born	−0.50	−0.24			
Children Ever Born per 100 Foreign-Born White Women	0.48				

* Less than 0.01.
[a] Calculated without Kings, New York, and Richmond Counties because of their extreme departure from the density of other counties.

[8] Instructions for taking the Census of the State of New York, in the year 1865, Albany, Weed, Parsons & Co., 1865, p. 18.

foreign-born white women. These were then correlated with (1) the population per square mile, (2) the number of persons employed per 1,000 population, (3) the number unable to read and write per 1,000 population, and (4) the per cent of the population foreign born.

The inter-correlations between these factors (*see* Table 1.) show population density as being the most important single factor. Birth rates of native and foreign-born white women were positively related (0.48) and both of them were lowest in areas of high density with correlations of −0.44 and −0.57 respectively.

The geographical differentials in birth rates in 1865 can be compared with Anderson's[9] data for 1930 with profit. The mountainous and hilly sections of the State had high birth rates, and these were generally isolated and rural. But a broad band through the central part of the State, the "David Harum"

Table 2. Cumulative birth rates for native and foreign-born white women living in New York State in 1865.

	Total	Native	Foreign Born
New York State[1]			
Number Women Reporting	842,560	520,250	322,320
Number Live Births	3,088,233	1,857,151	1,231,082
Births per 100 Women	367	357	382
Eight Counties[2]			
Number Women Reporting	81,847	67,939	13,908
Number Live Births	298,100	236,125	61,975
Births per 100 Women	364	348	446
Madison County			
Number Women Reporting	10,444	9,057	1,387
Number Live Births	36,201	30,126	6,075
Births per 100 Women	347	333	438
Nine Townships[3]			
Number Women Reporting	5,301	4,522	779
Number Live Births	18,038	14,659	3,379
Births per 100 Wives	340	324	435

[1] Derived from pp 66–67, New York Census, 1865.
[2] Chenango, Genesee, Ontario, Orleans, Oswego, Otsego, Tompkins, Wayne.
[3] Both husband and wife married only once, husband present. These rates are lower than the rest of the County because widows are not included, most of whom are in the older age brackets.

[9] Anderson, W. A.: Natural Increase in the Population of New York State. Cornell University Agricultural Experiment Station Bulletin 733. Ithaca, N. Y., 1940.

part, was also prevailingly agrarian and had low birth rates. Among the counties in the lowest quartile of cumulative birth rates for native women in 1865 were the following near neighbors of Madison county: Otsego, Chenango, Tompkins, Ontario, Genesee, Orleans, Wayne, and Oswego, with only the last having a city of over 10,000 inhabitants. (*See* Table 2.)

If one accepts the hypothesis of urbanization and industrialization as being related to falling birth rates, then he must assume that low birth rates in these relatively prosperous, but fundamentally rural, counties are the product of early diffusion. The possibility that the analysis must be even more complicated may be indicated by the study of differentials according to nativity in the next section.

Nativity

In the Madison County sample wives born in Madison County had the lowest birth rate at all ages except under 25, and foreign born wives the highest. (*See* Table 3 and Figure 1.) Native women from New York and other states fell in between. When standardized by age the cumulative birth rates of these groups of white women were as follows: native to Madison County 289, born in New York State outside Madison County 315, born in the United States outside New York State 321, foreign born 418. Recognizing that birth rates of all three native groups were close at most ages, the fact that the Madison County wives were least fertile on all counts is considered significant. They have the highest percentage of childlessness and the lowest birth rate.[10]

Madison County was not selected for this study because it was considered representative of the upstate farming areas, but it is not far from it. The County was settled after 1790, largely by migrants from New England and the eastern counties. It has some good and some poor farm land. It has never been highly urbanized; but it has never been too isolated. The

[10] Birth rates were also computed for mothers only. These come out as one would expect when the proportion childless is recognized. The tables are not reproduced here because they offer relatively little additional information.

Age of Wife and Variable Considered	Nativity of Wife			
	Madison County	New York not Madison County	United States not New York	Foreign Born
Number of Wives				
Total Under 65	2,094	1,775	430	757
Under 25	369	266	22	68
25–34	708	536	58	275
35–44	547	414	83	229
45–54	326	347	130	134
55–64	144	212	137	51
Children per 100 Wives				
Total Under 65 (Not Standardized)	273	323	422	427
Under 25	95	87	105	122
25–34	199	213	224	315
35–44	343	362	390	534
45–54	430	472	448	539
55–64	469	579	551	671
Standardixed Rate	289	315	321	418
Median Age of Wife	34.1	36.6	48.5	36.1
Per Cent Childless 45–54	10	7	10	6

Table 3. Cumulative birth rates by nativity of wife, Madison County, 1865.

Cherry Valley Turnpike pushed west across the middle of the County in 1806 and the Erie Canal later crossed the upper townships. By 1865 the Chenango Canal (Binghamton-Utica), the Seneca Turnpike, the Skaneateles Turnpike, and the New York Central Railroad provided other transportation.

Over half of the native-white population of Madison County was in agriculture, and among the native families the smallest ones were those most characteristic of the early life of the area, the two thousand wives native to Madison County. Clearly, the birth rate of this segment of the population was never very high, or the decline began very early. Compare, for example, the 1865 completed family (4.3 to 4.7 children) of the women native to Madison County with that for native white women in

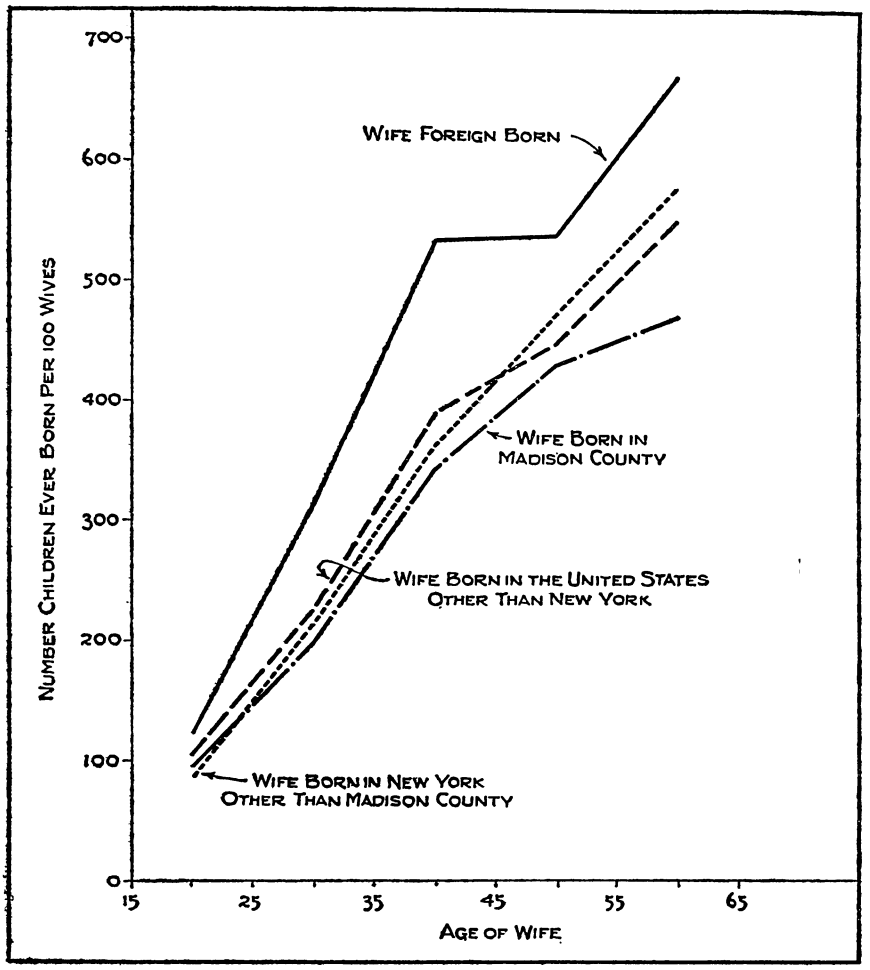

Fig. 1. Cumulative birth rates of married women by wife's nativity and by age.

the Northeastern Region in 1910 when the average woman of completed fertility had four children.[11]

One may assume that New York State birth rates were somewhat depressed by the Civil War as they were in New England.[12] The nature of the data presented in this study demon-

[11] U. S. Bureau of the Census: DIFFERENTIAL FERTILITY, 1940 AND 1910, WOMEN BY NUMBER OF CHILDREN EVER BORN. Washington, Government Printing Office, 1945, Table 81.

[12] Spengler, J. J.: The Fecundity of Native and Foreign-born Women in New England. Brookings Institution, Pamphlet Series, Vol. II, No. 1, 1930.

Occupation of the Husband	Wife Native White	Wife Foreign-Born White
Total	4,524	779
Per Cent	100.0	100.0
White Collar	10.8	2.5
Skilled and Semiskilled	19.5	15.2
Unskilled	8.2	35.6
Farm Owner	41.0	26.3
Farm Tenant and Laborer	15.9	15.8
None	1.1	0.5
Unknown	3.5	4.1

Table 4. Percentage distribution of native and foreign-born white wives, by occupation of husband.

strates, however, that this can have had no pronounced effect.

The early decline in the birth rate in this area is also inferred from the fact that the birth rates of women over age 45 continue to increase with each age group. Beginning with those aged 45–49 and increasing in age by five-year groups to 75 and over, the cumulative birth rates are as follows for all native white women: 429, 480, 523, 561, 613, 653, and 659. Of course, the ages given are for women at the time of the census in 1865, and these rates are for different cohorts of women. Thus, one hundred women aged 65–69 in 1865 had had 613 children at the time they completed their families in 1845 as compared to 100 women aged 45–49 in 1865 who had had 429 children.

Some fraction of these differentials according to age groups may well be attributed to a relationship between high birth rates and longevity. Dorn and McDowell found in the Australian statistics that the difference between the birth rates of women who died at advanced age and those who died in middle age could often amount to as much as twenty per cent.[13] If the birth rate of native women aged 45–49 in 1865 is 100, then the rates of the older age groups in Madison County is as follows: 112, 122, 131, 143, 152, 154.

The birth rates of Dorn and McDowell are computed for

[13] Dorn, Harold F. and McDowell, Arthur J.: The Relationship of Fertility and Longevity. *American Sociological Review*, 4: 234–246, April, 1939.

Occupational Class of Husband and Nativity of the Husband and Wife	Age of Wife		
	25–34	35–44	45–54
	Children ever born per 100 wives		
Skilled and Semiskilled			
Native	216	349	
Foreign Born	324	550	
Unskilled			
Native	231	462	541
Foreign Born	342	553	560
Farm Owner			
Native	203	348	449
Foreign Born	367	537	561
Farm Tenant and Farm Laborer			
Native	190	403	
Foreign Born	327	511	
	Ratios of rates of foreign born to those of native whites		
Skilled and Semiskilled	150	158	
Unskilled	148	120	104
Farm Owner	181	154	125
Farm Tenant and Farm Laborer	172	127	

Table 5. Cumulative birth rates of native[1] and foreign-born white[2] couples of specified occupational class of the husband.

[1] Both husband and wife native white.
[2] Both husband and wife foreign-born white.

women dying in a five-year period, while these data are for women still living by five-year age groups. Also date of marriage and age of marriage are not available for Madison County women. Thus, the two series can not be compared directly. Nevertheless, the conclusion seems warranted that the age differentials reflect much more than a factor of longevity.

The birth rate in Madison County in 1865 was not far above that for Cattaraugus County a generation or two later. The standardized birth rate for all native families of 315 may be compared with Sydenstricker's rate of 285 for Cattaraugus County in 1900.[14] In the latter county the rate was 269 in 1910 and 298 in 1929. The unstandardized rates for these two coun-

[14] Sydenstricker, Edgar: *op cit.*

Table 6. Percentage age distribution of wives by occupational class of the husband.

Occupational Class of the Husband	Number	Per Cent	Age of Wife						Median Age	Median Value Dwelling
			15–24	25–34	35–44	45–54	55–64	65+		
Professional	148	100.0	14.8	27.7	27.0	16.3	10.1	4.1	36.9	$1,282
Proprietor	243	99.8	13.1	31.7	30.0	16.8	7.4	0.8	36.2	Over 1,500
Clerical	77	100.1	20.8	39.0	20.8	10.4	6.5	2.6	31.6	1,346
Skilled	581	100.1	11.0	30.3	24.6	19.2	11.4	3.6	37.5	645
Semiskilled	245	99.9	15.5	35.1	21.6	15.5	6.5	5.7	34.3	614
Unskilled	328	100.0	26.8	29.6	16.8	14.0	8.0	4.8	31.9	316
Farm Owner	1,803	100.0	7.3	23.4	25.6	22.7	15.2	5.8	42.0	616
Farm Tenant	645	100.1	25.1	35.7	18.7	10.6	5.9	4.1	30.5	352
Farm Laborer	45	99.9	31.1	31.1	20.0	13.3	2.2	2.2	28.9	275
None	51	99.9	9.8	15.7	11.8	15.7	15.7	31.3	49.1	1,437
Unknown	149	99.9	24.1	26.8	16.8	14.8	10.0	7.4	33.9	545

Both husband and wife native white, husband present.

ties in 1865 were 391 and 333 for native wives. Thus, the birth rate for Madison County was probably below its more western, southern tier neighbor in 1865.

The higher birth rate of the foreign-born women is in part a product of their husbands' occupation and income. The foreign born performed a great many menial tasks, over a third of them being unskilled laborers as against one-twelfth of the native group. (*See* Table 4.)

The number of foreign born is too small to provide many meaningful comparisons, but Table 5 gives the data for those occupational and age classes with at least 20 wives. Foreign-born wives generally had a birth rate fifty per cent higher than native wives whose husbands were in similar occupational categories. There may also be a tendency for these differentials to decrease with advancing age.

Occupation

The predominant impression from the study of occupation in relation to fertility in 1865 is that economic factors were of great importance. (*See* Table 7.) White collar groups had the lowest birth rate, especially over the age of 45, and unskilled workers had the highest birth rate at all ages. Second highest were the farm tenants and farm laborers with two classes, the skilled and semiskilled and the farm owners, coming third with almost identical rates. The median value of the dwelling for these groups, reading from high birth rates to low birth rates, was $316, $344, $637, $616, and $1,445.

For this study occupations were coded generally according to the 1940 Index of Occupations and Industries of the Bureau of the Census with some few modifications for differing circumstances and functions. Since the area involved in the study was so strongly agrarian, some problems of classification of occupations did not emerge as they might in an urban setting. The final grouping of occupations into five categories was partly the product of necessity in obtaining numbers for analysis and partly the combining of apparently related classes. White collar is composed of professional, proprietor, and clerical occupations

(respectively V, 1, and 2 as the first digit of the occupation code). These compose a rather homogeneous group economically, though the wives of clerical workers were substantially younger. (*See* Table 6.) The skilled and semiskilled group (coded 3, 4, or 7) were similarly differentiated slightly in the median value of the dwellings and in the age of the wives, but their combination seemed reasonable. Unskilled workers were much younger and lived in cheaper houses. As far as they could be derived, the birth rates of skilled and semiskilled workers seemed to be similar, as against those of the unskilled.

Some skepticism is appropriate about the denotation of farmer and laborer in this census, and some reasons must be advanced for the classifications used. It may be that farmer, laborer, and farm laborer were used indiscriminately by some enumerators, with only one little mark in the proper column (owner of land) separating farm owners and farm renters. Farm laborer was used for only 64 husbands in the sample, 45 of them native, and only five out of twenty-four enumeration districts listed anyone as a farm laborer. Certainly some of the farm tenants are younger sons who will some day own the land, and some may be fathers who have already passed title to their sons. Confirming the family pattern, perhaps, is the fact that wives of farm tenants averaged twelve years younger than farm owners' wives.

Farm tenants and farm laborers are grouped together, however, because they seemed to be more closely related to each other than to any other groups. They are comparable in age and value of dwelling and significantly different from farm owners. (*See* Table 6.)

Laborer is largely a town occupation as these men are found in large numbers in a few enumeration districts which are primarily non-agricultural.

In most of the recent studies of differential fertility the people in rural occupations have birth rates higher than those in the urban occupations. In the 1865 Madison County sample, however, the skilled and semiskilled workers in the towns and vil-

lages had almost exactly the same birth rate as the farm owners, and the unskilled laborer group was above the farm tenant-farm laborer group. (*See* Table 7 and Figure 2.) Within the town and rural categories, the occupations followed an inverse relationship with skill and economic condition. One also notes that regardless of residence the occupations are located rather precisely in an apparent economic hierarchy.

There is some possibility that the higher rate of unskilled workers is also related to nativity; these may be (at least in significant proportion) the native children of foreign parents, since there were 656,000 foreign born in a population of slightly over 3,000,000 in New York State in 1850. Yet, in spite of this large number of foreign born in the State as early as 1850, it is

Table 7. Cumulative birth rates of native white families by occupational class of husband and age of wife.

	White Collar	Occupational Class of Husband			
		Skilled and Semi-skilled	Unskilled	Farm Owner	Farm Tenant and Farm Laborer
Number of Wives					
Total Under 65	458	790	312	1,691	662
Under 25	70	102	88	132	175
25–34	148	262	97	419	244
35–44	129	196	55	459	130
45–54	73	148	46	407	74
55–64	38	82	26	274	39
Children per 100 Wives					
Total Under 65 (Not Standardized)	242	311	325	348	258
Under 25	86	99	116	92	70
25–34	180	216	231	203	190
35–44	288	349	462	348	403
45–54	364	443	541	449	504
55–64	382	548	708	544	580
Standardized Rate	247	306	375	301	321
Median Age of Wife	35.4	36.1	31.5	40.9	30.9
Per Cent Childless 45–54	10	9	4	9	8
Median Value of Dwelling	$1,445	$637	$316	$616	$344

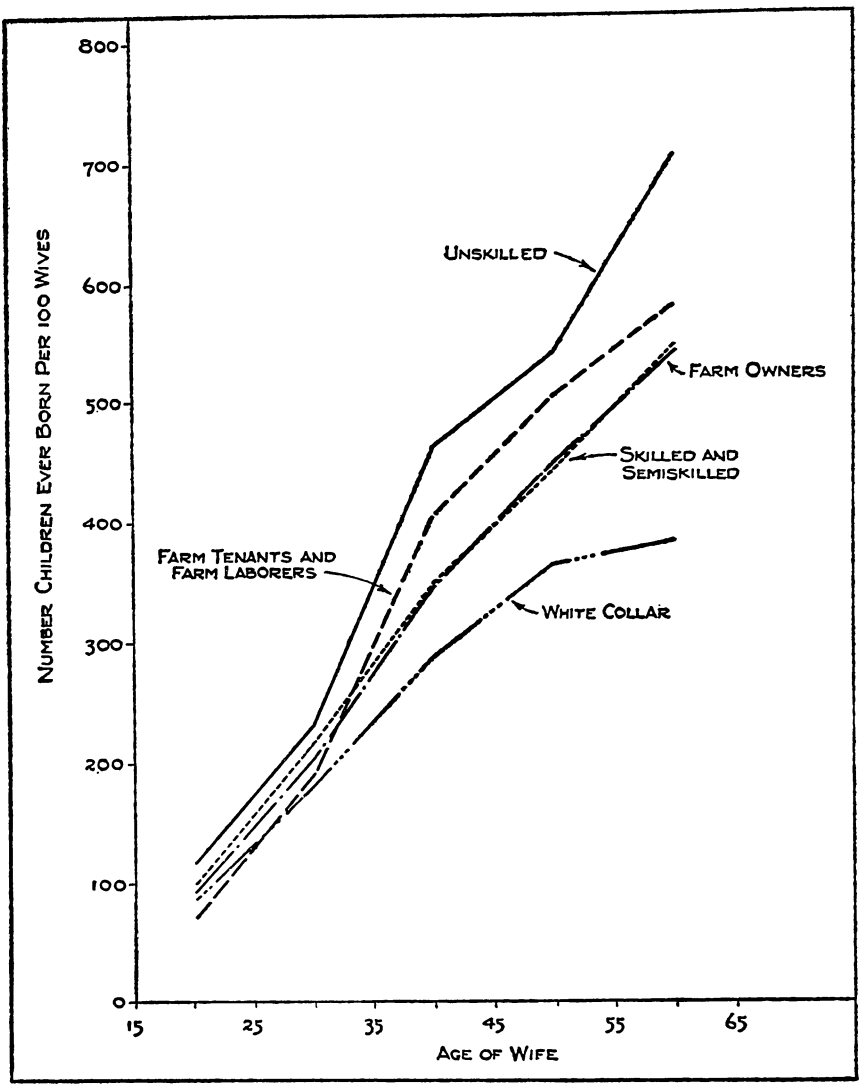

Fig. 2. Cumulative birth rate of married women by husband's occupation and age of wife (both native white).

doubtful if there were very many native women of foreign parentage in the child-bearing ages in 1865. The national record shows, during the decade preceding 1850, 1,415,000 immigrants, but only 409,000 of these came in the first five years; and there were just over 500,000 in the decade of the '30's.[15] Thus the

[15] Thompson, Warren S. and Whelpton, P. K.: POPULATION TRENDS IN THE UNITED STATES. New York, McGraw-Hill, 1933, p. 294.

annual rate of immigration was fairly low before 1845, and only from this group could one expect native women of foreign parentage in the child-bearing ages in 1865.

Although the difference between the standardized rates of the unskilled laborers (375) at one extreme and of the white collar group (247) at the other is substantial, it is not unduly large. For example, Sydenstricker and Notestein found cumulative birth rates in 1910 ranging from 129 for professional wives under 45 to 299 for farm laborers' wives.[16] Relatively and absolutely these 1910 differentials are greater than those for 1865.

One other comparison with the 1910 data is fruitful. Wives of "urban" occupational groups in 1865 have rather substantially higher cumulative birth rates at nearly every age up to 45 than comparable occupational groups in 1910, but farmers' wives in the two censuses were very nearly alike, with any possible difference being in the direction of a higher rate for 1910. (*See* Table 8.) Since the urban data in the study by Sydenstricker and Notestein came from cities of over 100,000 the

Table 8. Comparison of cumulative birth rates in 1865 and 1910 by age of wife and occupational class.

Occupational Class	Age of the Wife at Census of 1910 or 1865					
	15–19	20–24	25–29	30–34	35–39	40–44
White Collar	*	89	148	209	231	345
Professional[1]	35	59	89	133	177	211
Business[1]	37	66	104	147	184	224
Skilled and Semiskilled	*	113	183	251	332	371
Skilled Workers[1]	45	93	137	185	235	277
Unskilled	56	140	172	315	448	479
Unskilled Laborers[1]	59	113	175	229	296	334
Farm Owner	*	98	157	244	328	369
Farm Owners[1]	50	122	188	265	325	376
Farm Tenant & Laborer	29	80	154	251	376	452
Farm Renters[1]	52	113	195	284	367	467
Farm Laborers[1]	59	126	221	320	405	471

* Less than 20 wives.

[1] From Sydenstricker, Edgar and Notestein, Frank W., Differential Fertility According to Social Class. *Journal of the American Statistical Association*, xxv, (N. S. No. 169), p 25.

[16] *Op cit.*, p. 25.

comparison is more interesting than enlightening. If it has any meaning, the comparison demonstrates again that the decline in the birth rate in this part of New York State began very early, and that the farm population did not necessarily lag in this movement.

This discussion of occupational differentials has emphasized most strongly the broad pattern, because safety seemed to lie in numbers. The standardized birth rates show a fairly clear ranking, rather consistently related to assumed economic position as measured by the value of the dwelling. And farmers' birth rates, rather than being higher than those of town residents, are often lower; unskilled laborers' rates are higher than those of farm laborers and farm tenants, and farm owners' rates are very nearly the same as the rates for the skilled and semiskilled group. The relatively low birth rates of the farm tenant and farm laborer class in the younger ages is worthy of note, however; in the standardized rate they rank second, but they rank fifth and fourth in the two younger age groups where two-thirds of these wives are found.

The numbers of foreign born are so small in this sample that little has been done with them in connection with occupational analysis. Nonetheless, the data in Table 5 are of interest, since they reveal almost no significant occupational differentials.

Table 9. Ratios of birth rates of other occupational classes to unskilled laborers by age of the wife and nativity.

Nativity of Couple and Occupational Class of the Husband	Age of Wife		
	25–34	35–44	45–54
Both Husband and Wife Native White			
Skilled and Semiskilled	94	76	82
Unskilled	100	100	100
Farm Owner	88	75	83
Farm Tenant and Farm Laborer	82	87	93
Both Husband and Wife Foreign-Born White			
Skilled and Semiskilled	95	99	
Unskilled	100	100	100
Farm Owner	107	97	100
Farm Tenant and Farm Laborer	96	92	

Table 9 provides a comparison of the birth rates for several occupations and age groups by nativity, using data from Table 5 and Table 7. Note that if the birth rate of the unskilled group is 100, then the birth rate of farm owners is 107 at ages 25–34, and 97 and 100 in the next higher age groups. Among native families these ratios are 88, 75, and 83, respectively. Similarly, the differentials for other occupational groups among the foreign born are essentially flat.

Value of the Dwelling

Evaluations placed by the census enumerators on the dwellings were assumed to be one index of an economic character which could be independent of other measures of social position. Because of its subjective character, this index was used with some diffidence; but experience with it indicates that the interviewers must have used a fair discrimination. Individual homes were valued from $50 for some log houses to over $15,000, and the average value of dwellings has been noted as being significantly related to occupation.

In 3,049 households there was only one marital couple per household; an additional 1,045 families were doubled up, 419 of them being considered as the principal family (being listed first in the household) and 626 as secondary families. The difference between the last two categories is due to the fact that occasionally there were two or more secondary families in a household. Then, too, many principal families were not qualified for inclusion in the study due to plural marriages on the part of one spouse, or due to widowhood. Normally widowed parents were not listed first in the household; but when they were they were counted as the principal family.

Crowding was closely related to the size of the family except at the oldest ages. Secondary families were smallest at all ages, and families living alone tended to be slightly larger than either of the "doubled up" types except over the age of 45, where they were slightly smaller than "principal families." (*See* Table 10.) No economic differential is evident here, except what one would

expect, in that the median value of "only one couple" dwellings is $586 and of dwellings with two or more families $785. There is a substantial difference in the ages represented; "principal families" average 44 years for the wife and "secondary families" have a median of 27 years. "Only one couple" families fall in between with a median age of 38 years for the wife.

Cumulative birth rates per hundred mothers are also given in Table 10 because secondary families include a substantial number of childless marriages. Differentials for mothers are reduced somewhat, but they are by no means eliminated.

Analysis of families living alone indicates a weak relationship

Table 10. Cumulative birth rates per 100 wives and per 100 mothers by housing status and by age of wife or mother.

Age	Only One Couple	More Than One Couple	
		Principal Family	Secondary Family
Number of Wives	3,049	419	626
	CHILDREN EVER BORN PER 100 WIVES		
Total Under 65	331	381	143
15–24	102	100	65
25–34	219	211	134
35–44	364	332	205
45–54	451	458	335
55–64	533	599	460
Median Age	38.2	44.3	27.4
Median Value Dwelling	$586	$785	
Per Cent Childless 45–54	9	5	19
Number of Mothers	2,681	383	391
	CHILDREN EVER BORN PER 100 MOTHERS		
Total Under 65	377	416	228
15–24	161	156	136
25–34	251	229	203
35–44	385	365	413
45–54	494	484	413
55–64	586	605	493

between the birth rate and the value of the dwelling. (*See* Table 11 and Figure 3.) When standardized by age the cumulative birth rates range from lowest value of dwelling to highest as follows: 370, 322, 284, 282, and 282; but only at ages 55–64 is the relationship inverse. At other ages there are variations in the rank order of the categories. Especially is there variation in the three categories above $600, and almost half of the number of families with known valuations fall into these three. The very slight difference in standardized rates for these three categories and the apparently random variations in specific age groups suggests that no significant differentiation can be made here. Value of the dwelling *per se* has slight relation to the birth rate except in so far as only the extremes are considered, and even then the magnitude of the differentials is not great.

Table 11. Differentials in cumulative birth rates by value of dwelling and age of wife.

	Value of Dwelling					
	Under $300	$300–599	$600–999	$1,000–1,499	$1,500 & Over	Unknown
Wives						
Total Under 65	668	778	578	399	401	213
Under 25	117	91	60	18	22	22
25–34	222	225	167	111	98	56
35–44	168	228	145	120	113	70
45–54	95	154	126	95	117	40
55–64	66	80	80	55	51	25
Children per 100 Wives						
Total Under 65 (Not Standardized)	354	338	308	327	322	345
Under 25	110	101	93	*	118	96
25–34	254	223	205	198	204	184
35–44	442	385	334	313	325	331
45–54	566	454	383	444	406	578
55–64	588	573	519	495	439	588
Standardized Rate	370	322	284	282	282	318
Median Age of Wife	34.3	37.7	38.8	40.4	41.6	38.6
Per Cent Childless 45–54	5	12	11	11	5	5

* Under 20 wives.

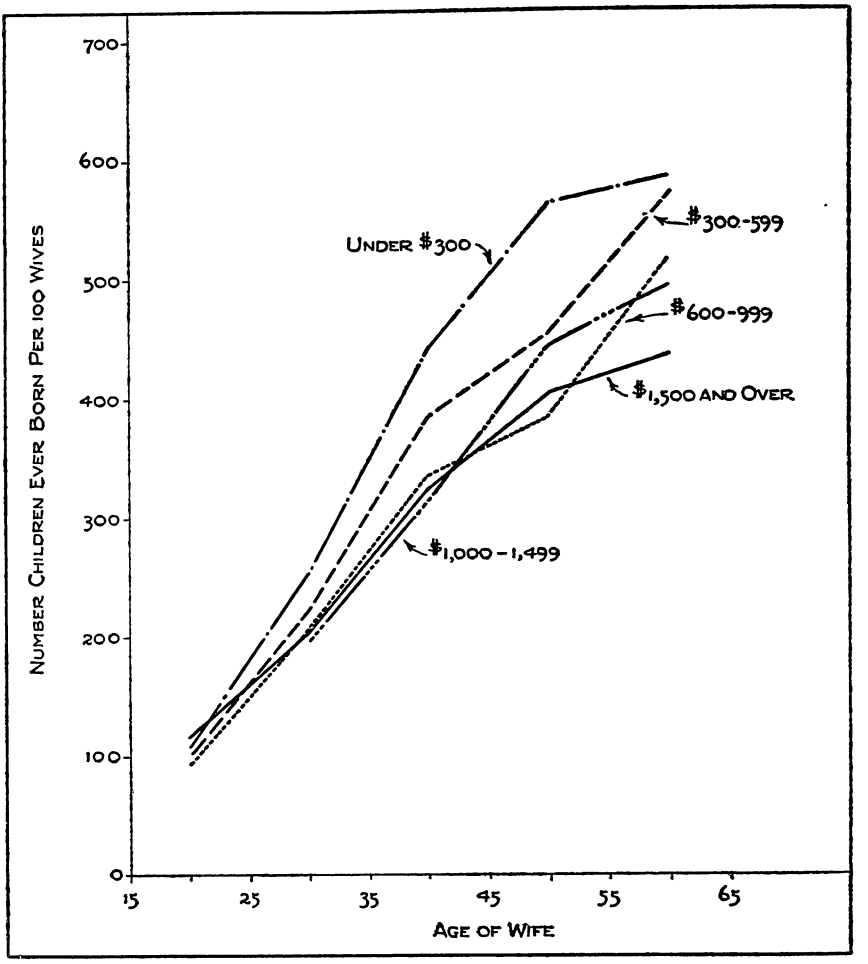

Fig. 3. Cumulative birth rate of married women by value of dwelling and age of wife (both native white, only one married couple in the household).

Slight as the differences are between these economic levels, some of them are related to childlessness, since the proportion of married women who were childless increased on the higher economic levels. An exception to this appeared among those in the $1,500 and over bracket where the proportion childless was low.

Cash Value of the Farm

The fact that broad occupational categories often conceal within averages some very substantial internal differences has

often been noted, and an economic analysis within an occupational group sometimes demonstrates a relationship with fertility that is different from the one that is otherwise discernible. For these reasons the farm owners were given particular attention, since the agricultural section of the census provided additional information about each farm. In the coding process the name of each farmer was recorded in order to find his listing in the other section for the cash value of the farm and the value of tools and machinery. Other farm variables were as easily obtained, but these two were selected, the first to obtain an overall indication of general worth, and the second as a presumed index of "modernization." Cash value of the farm ranged from less than $500 to over $15,000, and value of tools and machinery from less than $10 to over $500. Among 1,797 wives of

Table 12. Cumulative birth rates of farm owners wives by cash value of the farm and age of the wife.

	Cash Value of the Farm				
	Under $3,000	$3,000–4,999	$5,000–6,999	$7,000 and Over	Unknown
Wives					
Total Under 65	477	411	263	321	219
Under 25	39	34	25	10	24
25–34	115	115	61	62	66
35–44	153	97	67	86	56
45–54	98	100	74	100	35
55–64	72	65	36	63	38
Children per 100 Wives					
Total Under 65 (Not Standardized)	369	297	330	417	321
Under 25	100	88	92	*	96
25–34	220	176	192	232	206
35–44	372	308	313	393	327
45–54	536	387	427	467	383
55–64	521	466	561	608	600
Standardized Rate	328	263	286	328	
Median Age of Wife	40.0	40.3	41.3	44.8	38.0
Per Cent Childless 45–54	7	14	7	7	6

* Under 20 wives.

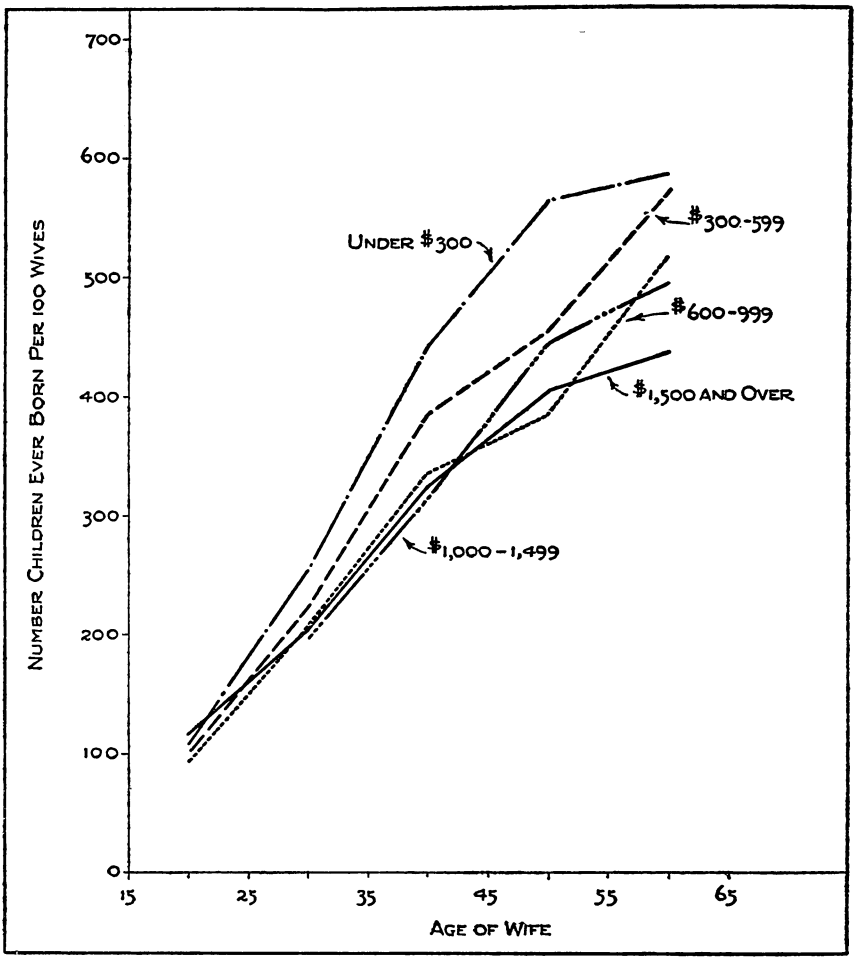

Fig. 3. Cumulative birth rate of married women by value of dwelling and age of wife (both native white, only one married couple in the household).

Slight as the differences are between these economic levels, some of them are related to childlessness, since the proportion of married women who were childless increased on the higher economic levels. An exception to this appeared among those in the $1,500 and over bracket where the proportion childless was low.

Cash Value of the Farm

The fact that broad occupational categories often conceal within averages some very substantial internal differences has

often been noted, and an economic analysis within an occupational group sometimes demonstrates a relationship with fertility that is different from the one that is otherwise discernible. For these reasons the farm owners were given particular attention, since the agricultural section of the census provided additional information about each farm. In the coding process the name of each farmer was recorded in order to find his listing in the other section for the cash value of the farm and the value of tools and machinery. Other farm variables were as easily obtained, but these two were selected, the first to obtain an overall indication of general worth, and the second as a presumed index of "modernization." Cash value of the farm ranged from less than $500 to over $15,000, and value of tools and machinery from less than $10 to over $500. Among 1,797 wives of

Table 12. Cumulative birth rates of farm owners wives by cash value of the farm and age of the wife.

	Cash Value of the Farm				
	Under $3,000	$3,000–4,999	$5,000–6,999	$7,000 and Over	Unknown
Wives					
Total Under 65	477	411	263	321	219
Under 25	39	34	25	10	24
25–34	115	115	61	62	66
35–44	153	97	67	86	56
45–54	98	100	74	100	35
55–64	72	65	36	63	38
Children per 100 Wives					
Total Under 65 (Not Standardized)	369	297	330	417	321
Under 25	100	88	92	*	96
25–34	220	176	192	232	206
35–44	372	308	313	393	327
45–54	536	387	427	467	383
55–64	521	466	561	608	600
Standardized Rate	328	263	286	328	
Median Age of Wife	40.0	40.3	41.3	44.8	38.0
Per Cent Childless 45–54	7	14	7	7	6

* Under 20 wives.

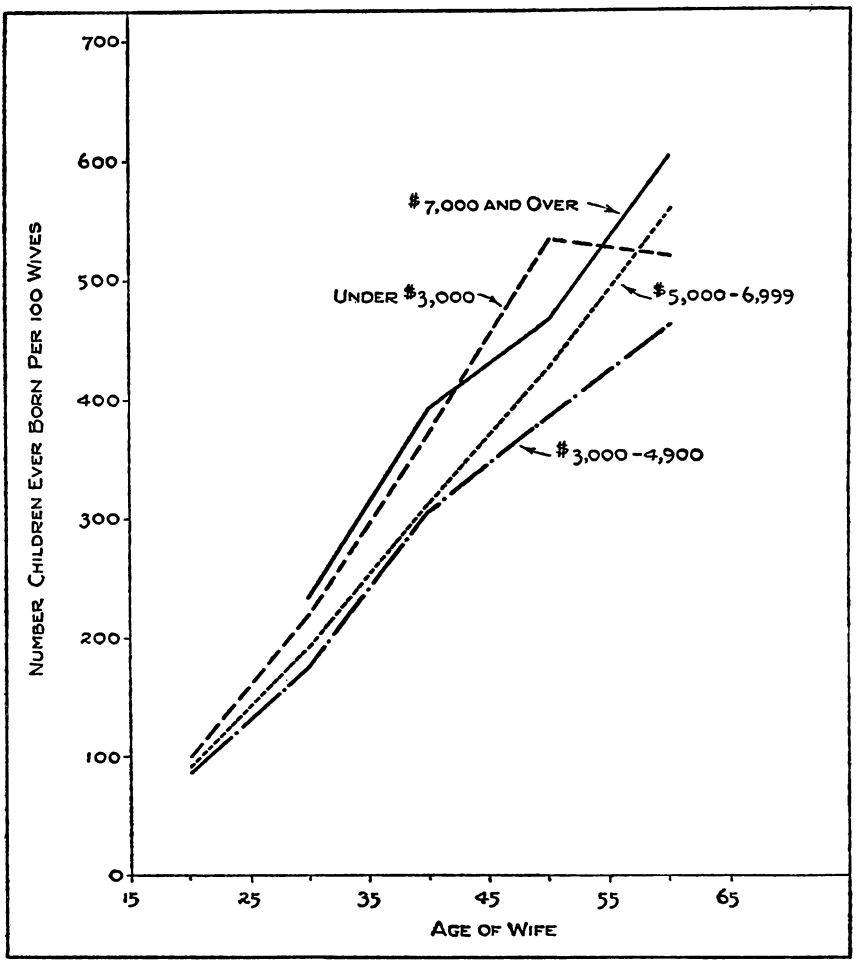

Fig. 4. Cumulative birth rates of farm owners' wives by cash value of farm and age of wife (both native).

farm owners there were 219 for whom data were not obtainable on the value of the farm and 307 on the value of tools and machinery. The remainder were divided into four categories of approximately equal sizes.

These two economic variables were related significantly. Though the mathematical value of the relationship was not calculated, inspection of a scattergram for a substantial proportion of the farm owners showed a positive correlation but with considerable spread.

The cumulative birth rates for wives of farm owners on four different levels of farm value lead to two propositions: (1) differentials between economic levels are quite moderate, and (2) the birth rate is positively related to farm worth except for the poorest group. (*See* Table 12 and Figure 4.)

At all ages the cumulative birth rates of the three upper economic groups are ranked in positive order, the highest birth rates being found among the most prosperous farmers. The birth rates of the poorest farmers are very similar to the ones for the top group. Standardized birth rates for these groups, reading from the poorest to the prosperous are 328, 263, 286, and 328.

Some progression upward in an economic hierarchy with advancing age was noted in connection with the data on value of the dwelling. This re-appears here with the wives of the most prosperous farmers being about four years older than the others.

Table 13. Cumulative birth rates of farm owners wives by value of tools and machinery and age of wife.

	Value of Tools and Machinery				
	Under $100	$100–199	$200–299	$300 and Over	Unknown
Wives					
Total Under 65	375	464	293	252	307
Under 25	37	36	12	13	34
25–34	93	119	59	56	92
35–44	93	126	89	67	84
45–54	89	115	80	75	48
55–64	63	68	53	41	49
Children per 100 Wives					
Total Under 65	332	331	383	396	322
Under 25	103	69	*	*	94
25–34	215	194	190	211	208
35–44	354	326	336	382	362
45–54	434	437	476	495	394
55–64	465	543	604	576	557
Median Age of Wife	40.7	40.6	43.0	43.0	37.8
Per Cent Childless 45–54	17	9	5	4	6

* Under 20 wives.

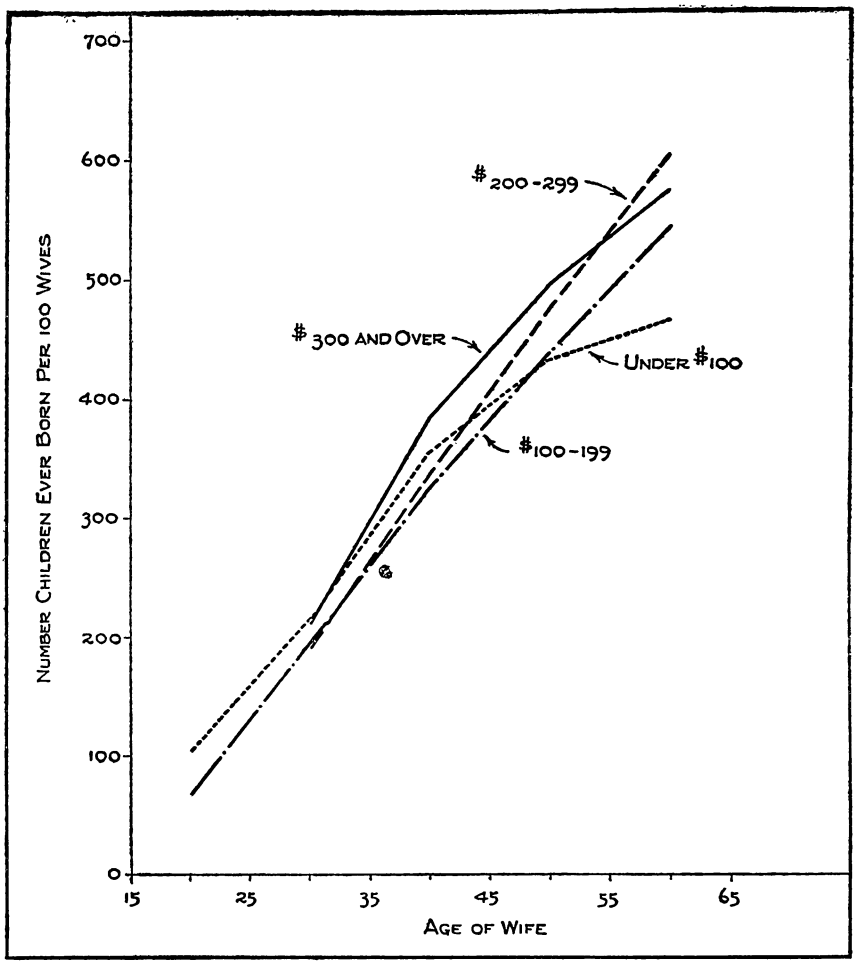

Fig. 5. Cumulative birth rates of farm owners' wives by value of tools and machinery and age of wife (both native white).

Value of Tools and Machinery

Differentials in birth rates according to the value of tools and machinery are less pronounced than according to the cash value of the farm. (*See* Table 13 and Figure 5.) Except at age 55–64 one is likely to conclude that most of the differences observed can be attributed to chance factors—that there are no significant differentials present. It is true that the rank order of the groups is similar with the most prosperous group tending

to have the highest birth rates, but the poorest group here comes out with a middling or low birth rate rather than a high one. And here one particularly interesting fact comes out, namely, that childlessness for those women over the age of 45 tends to decrease in the higher economic positions. Some 17 per cent of the wives over 45 in the poorest economic group had had no children as against 9 per cent, 5 per cent, and 4 per cent for the other groups on a rising scale.

In this section of the study one is reminded of the stereotype of the old fashioned American farm family in which fertility was supposed to be directly related to success; the more sons a family had the better it could live and prosper.

Conclusions

This study of some four thousand native-white families and an additional thousand foreign-white families in New York State in 1865 can hardly be used to support the "J" hypothesis except insofar as one confines himself to the economic differentials within the farm group. There the top and the bottom groups had higher birth rates than those in between. When one examines nativity, occupation, and value of the dwelling, he finds that the differentials tend to go in the "expected modern" direction, *i. e.,* they are inversely related to economic position.

Relatively, the differences between classes were not large. Possibly this may be due to the fact that the birth rate was already quite low. The standardized birth rate for all native-white couples was 315, which may be compared with a standardized birth rate of 285 in 1900 in Cattaraugus County, and 269 in 1910 and 298 in 1929. The birth rate was also low in some unexpected segments of the County's population. Birth rates were higher for some "town" occupations than for some "rural" occupations. Since Madison County belongs to a group of rural counties which fall in the lowest quartile of the State's counties in 1865 in the birth rate of native-white women, one wonders whether this same phenomenon would be found in a comparable county in the top quartile.

Increasingly higher birth rates for women over forty-five, low birth rates for women native to Madison County, higher birth rates for some town occupations—all these tend to reinforce the conclusion that the decline in the birth rate in Madison County began very early. And it may have begun among farm families as early as among town families.

If these data do not clearly support a "J" hypothesis for Madison County for 1865, neither do they clearly support the earlier analysis of the diffusion of the small family type. Although for the State as a whole there is a negative relationship between urbanization and industrialization and the birth rate, nevertheless, Madison County fails to fit the pattern. This is true in terms of the County's position as a unit, and it is true when one examines the differences within the County in more detail. If the diffusion of the small family pattern began in the cities in some areas of the country, then it may have come very early in the farming areas in Madison County.