

# CLASS BIRTH RATES IN ENGLAND AND WALES, 1921-1931

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WITH the publication of Part IIA of the Registrar-General's Decennial Supplement for 1931 it becomes possible to make a relatively up-to-date analysis of *trends* in class birth rates for all England. The complete recasting of the occupational census in 1921 precluded any comparison of birth-rate differentials in 1921 and 1911. It has meant that hitherto the demographer has had at his command direct data on English class fertility trends only for the early period covered by the famous 1911 Report on the Fertility of Marriage.<sup>2</sup> For the period since 1921, there have been various attempts to circumvent the lack of national data in England and elsewhere through official statistics and small sample studies of selected cities including London. The results of these inquiries have varied considerably with their locale but the variety of the answers has only added point to the perennial question raised by demographers for many years. Has there been any modification of the traditional strong association between higher status and lower fertility from class to class in modern communities? Has the association been weakened, destroyed, or even reversed? It is at last possible to bring direct, national data to bear on these problems for England during the period 1921 to 1931.

## 1921 AND 1931 CLASS BIRTH RATES UNADJUSTED FOR AGE DIFFERENCES

The same set of five class categories has been used in the social classification of births and married men under 55 in the 1921 and

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<sup>2</sup> This situation led the present writer to attempt an indirect approach to the problem by means of birth rates for metropolitan districts, 1909-1934, see Innes, J. W.: *CLASS FERTILITY TRENDS IN ENGLAND AND WALES 1876-1934*. Princeton, Princeton University Press, 1938, pp. 70-118. See also Glass, D. V.: Fertility and Economic Status in London. *Eugenics Review*, July, 1938, pp. 117-124.

1931 Decennial Supplements. Class I is composed almost entirely of the members of the leading professions and of managers, officials, and independents in certain finance and insurance occupations. Employers and managers in mining, industry, transport and communication, retail and wholesale trade are included in Class II which also takes in the second grade of professionals, chiefly employees, and commercial employees in a few occupations carrying a measure of independence. Classes III, IV, and V correspond to the familiar classification of manual workers as skilled, semi-skilled, and unskilled, respectively. But Class III also includes salesmen and shop assistants in wholesale and retail trade as well as the great majority of clerical employees. Rather than lose the large and relatively distinctive group of clerical workers in the extremely inclusive Class III, they have been put in a sub-class, IIIA.<sup>3</sup> In the tables which follow, IIIA has been included in a second set of six class categories after the results for the five official, social classes have been presented.

In 1931 many minor changes in the occupational and social classifications were introduced. So far as possible these changes have been eliminated in the present analysis<sup>4</sup> and it is believed that the remaining differences in classification do not materially affect the comparability of the 1921 and 1931 results.

According to section A of Table 1, there were several outstanding changes from 1921 to 1931 in class fertility differentials. Class I was replaced by II as the class of lowest fertility. The absolute and relative differences in fertility between Class I and all other classes decreased. Class IV reduced its fertility differential even with respect to the new, least fertile Class II. The excess in fertility of Classes III and V over the least fertile Class I in 1921 and II in 1931, remained stable relatively but diminished absolutely. The trends measured by the 1921-1931 percentage decrease in birth rates

<sup>3</sup> See Appendix B for exact composition of Class IIIA.

<sup>4</sup> See Appendix B for detailed description of revisions made in official 1921 and 1931 classifications.

SOCIAL CLASS	MARRIED MEN UNDER 55		BIRTHS PER 1,000 MARRIED MEN UNDER 55				Percentage Decrease 1921-1931
	1921	1931	1921		1931		
			Birth Rate	Ratio <sup>1</sup>	Birth Rate	Ratio <sup>1</sup>	
A. FIVE SOCIAL CLASSES							
I	128,379	145,244	98	70	76	78	22
II	819,597	892,173	100	71	67	69	33
III	2,923,097	3,173,459	138	98	96	99	30
IV	1,030,092	1,022,317	164	116	106	109	35
V	796,898	980,982	174	123	122	126	30
TOTAL	5,698,063	6,214,175	141	100	97	100	31
B. SIX SOCIAL CLASSES							
I	128,379	145,244	98	70	76	78	22
II	790,045	841,107	102	72	69	71	32
IIIA	308,506	353,977	111	79	70	72	37
III	2,644,143	2,870,548	140	99	98	101	30
IV	1,030,092	1,022,317	162	116	106	109	35
V	796,898	980,982	174	123	122	126	30
TOTAL	5,698,063	6,214,175	141	100	97	100	31

<sup>1</sup> Percentage of birth rate for total population.

Table 1. Unadjusted birth rates of (A) five social classes, 1921-1931 and (B) six social classes, 1921-1931, in England and Wales.

show that, as compared with the figures for the total population, the rate of decline was much smaller in Class I, considerably greater in Class IV, less in excess in Class II, and approximately the same in Classes III and V.

In the second section of Table 1, striking results for the "white-collar" class IIIA seem more than to justify its segregation from the classes among which it was distributed. Class III, from which most of the members of IIIA were drawn, was much more fertile than the new class in 1921, and still more in excess, in 1931, both absolutely and relatively. Moreover, the difference between the birth rates in 1921 of Classes IIIA and II had dwindled to insignificance in 1931, so that the two classes together comprise the sector of lowest fertility. Finally, in terms of rate of decline, Class

IIIA exceeds even Class IV, which showed the most rapid decrease of all five classes in the first part of the table.

ADJUSTED CLASS BIRTH RATES, 1921-1931

Comparisons between the class birth rates in Table 1 are rendered insecure to an unknown degree by the lack of any control over variations in ages of married women. In the absence of any class data on ages of wives, one is compelled to resort to average ages of husbands under 55 for an indirect index of variation in wives' ages which would affect class fertility differences. The use of this indirect approach is supported by the close association between husbands' and wives' ages but an element of uncertainty remains because there is apparently some variation in the relationship from class to class especially from I to II-V.<sup>5</sup>

The pattern of husbands' ages by social class in Table 2, with and without the separation of Class IIIA, is remarkably simple. In the first place, the proximity in age, on the one hand, of the first two classes, and on the other, of the remaining classes, is extremely

Table 2. Average ages of married men under 55, by social class in England and Wales, 1921-1931.<sup>1</sup>

FIVE CLASSES	AVERAGE AGE		SIX CLASSES	AVERAGE AGE	
	1921	1931		1921	1931
I	41.3	41.5	I	41.3	41.5
II	41.4	41.5	II	41.5	41.6
III	38.8	38.8	IIIA	38.6	39.0
IV	38.8	38.8	III	38.8	38.8
V	39.2	38.9	IV	38.8	38.8
			V	39.2	38.9
TOTAL	39.3	39.3	TOTAL	39.3	39.3

<sup>1</sup> In calculating weighted averages for 1931, age categories 25-29 and 30-34 have been combined to correspond with the single 1921 category, 25-34.

<sup>5</sup> See Appendix A for a discussion of the problems raised by the use of age groups of husbands in birth rate analyses.

close. Secondly, all the class averages change either not at all or only insignificantly between 1921 and 1931 with the average for the whole population identical for the two years. As a consequence of these two facts, one may expect an adjustment for age differences to have more effect on the *levels* of fertility of the first two classes as compared with the other classes than on their respective fertility *trends*.

Direct standardization would be the most effective way to control these class differences in age but unfortunately the necessary age-specific birth rates are not obtainable. Partial correlation is a less precise but still defensible method for holding constant the influence of age on class birth rates.<sup>6</sup>

To carry out these correlations, series of birth rates, average ages of married men under 55, and class rankings have been constructed on the basis of fifty-six occupational categories, made comparable for 1921 and 1931.<sup>7</sup> These categories cover the entire population of gainfully occupied married men. In order to assign numerical values to the qualitative class categories the difference in status between adjacent classes has been taken as a unit of status. This means that the series of class ratings is rather crude and probably weakens the correlations in which status is a variable.

The detailed occupational birth rates in 1921 provide the basis for a 526-item<sup>8</sup> correlation analysis which can be used to check the results for the short series in 1921, and derivatively the results for the 1931 series.

The sharp reduction in the partial, linear correlation coefficient between birth rates and class ratings in the 1931 series as compared with either 1921 series is a first indication of a substantial weakening in the usual inverse relation between fertility and status. Be-

<sup>6</sup> Indirect standardization has been avoided here because of the intrinsic deficiencies of that method. See Yule, G. U.: On Some Points Relating to Vital Statistics. *Journal of the Royal Statistical Society*, 1934, xcvi, pp. 8-13; and Innes, J. W.: *op. cit.*, Appendix I, pp. 127-133.

<sup>7</sup> See Appendix C for construction of these series.

<sup>8</sup> See Appendix C.

cause of the crudeness of the status series, less significance inheres in the low *level* of the coefficients in both years than in their downward trend. Moreover the coefficient of zero in 1931 means only the

Table 3. Partial linear correlation and regression coefficients between birth rates, average ages of husbands under 55, and class status, in England and Wales, 1921 and 1931.

Coefficient	1921 526 Items	1921 56 Items	1931 56 Items
$r_{bs.a}$	-.30	-.31	+.002
$r_{ba.s}$	-.49	-.46	-.42
$r_{sa.b}$	+.16	+.31	+.58
$b_{ba.s}$	-11.44	-10.81	-8.50

b—births per 1,000 husbands under 55; a—average age of husbands under 55; s—class status.

absence of an overall linear relation, not necessarily the absence of any relation between class and fertility.

The second and third rows of coefficients reveal that variation in ages of married men has a definite, consistent association with variation in birth rates and an equally strong but more fluctuating relation to differences in status. These two relations make self-evident the importance of controlling age in birth rate comparisons between classes.

The partial regression coefficients in Table 3 measure the average reduction in each series of birth rates associated with a one year increase in age of married men under 55. Using the coefficients for the two 56-item series as "correction factors" in 1921 and 1931, the average ages for all classes have been equated to the average for the total population and their respective birth rates changed proportionately.

Two general effects on the class birth rates of these adjustments for age differences are immediately clear when Table 4A-4B and Figure 1A-1B are compared with Table 1A-1B. Class differences in fertility and the comparative *levels* of class fertility trends are greatly altered while the *directions* of the trends, the percentage decreases are only slightly changed.

In 1921, age adjustments have little effect on the small difference between Class I and II birth rates but greatly reduce the absolute

and relative spread in fertility between these classes and III, IV, and V. In 1931, this narrowing of the range in fertility between Classes I-II and III-V by controlling the age factor is carried still further. According to the age-corrected rates in contrast to the uncorrected rates, the ratio of decline of even Class II fertility is not greater but slightly less than the relative decreases in Classes III and V and lags much more behind Class IV's fertility decline. In the case of Class I, the rate of fertility decline is again very much slower than the rates for all other classes but now its trend line (Figure 2A) is crossed by Class III's in addition to Class II's. Thus the 1931 adjusted rates show not only that the displacement of I by II as the class of lowest fertility is not to be explained away by

Table 4. Adjusted<sup>1</sup> birth rates in (A) five social classes, 1921-1931 and (B) six social classes, 1921-1931 in England and Wales.

SOCIAL CLASS	• BIRTHS PER 1,000 MARRIED MEN UNDER 55				
	1921		1931		Percentage Decrease 1921-1931
	Birth Rate	Ratio <sup>2</sup>	Birth Rate	Ratio <sup>2</sup>	
A. FIVE SOCIAL CLASSES					
I	120	85	95	98	21
II	123	87	86	89	30
III	133	94	92	95	31
IV	159	113	102	105	36
V	173	123	119	123	31
TOTAL	141	100	97	100	31
B. SIX SOCIAL CLASSES					
I	120	85	95	98	21
II	126	89	89	92	29
IIIA	103	73	67	69	35
III	135	96	94	97	30
IV	159	113	102	105	36
V	173	123	119	123	31
TOTAL	141	100	97	100	31

<sup>1</sup> Adjusted to an average age of married men under 55 of 39.3, the actual average for total population in 1921 and 1931.

<sup>2</sup> Percentage of birth rate for total population.

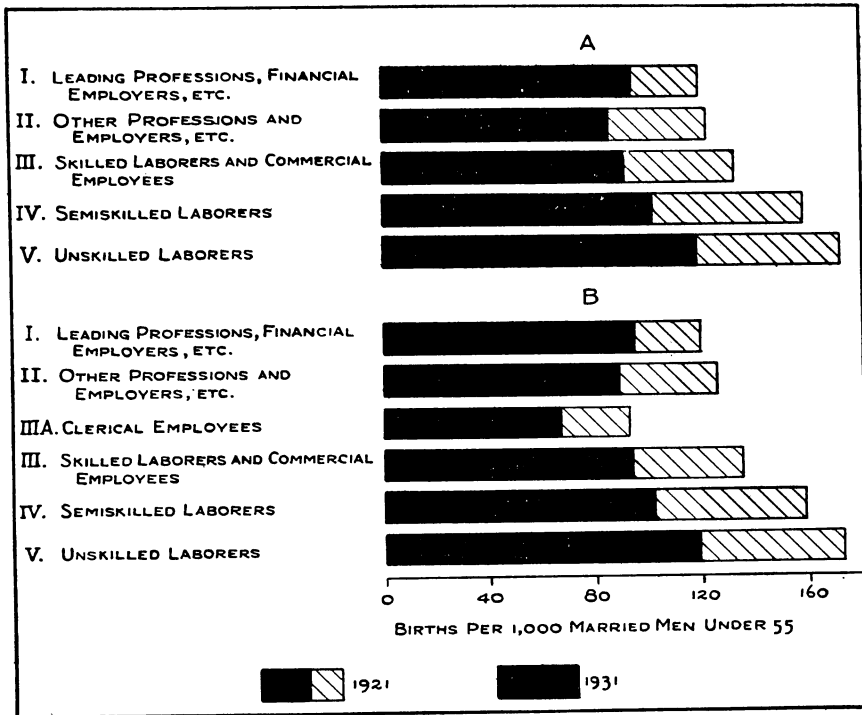


Fig. 1. Birth rates by social class, adjusted for age, in England and Wales, 1921-1931.

changes in age composition but also that Class III's birth rate has dropped down to a level slightly below that of Class I. The fertility decline of Class IV continues to be decidedly the most rapid of all classes from 1921 to 1931.<sup>9</sup>

One might sum up the differential fertility situation in 1931, as compared with 1921, by saying that the usual decrease in relative fertility with rise in status, still true in 1921, has increased from Class V to IV, has been much reduced from Class IV up to Class II and replaced by an increase from Class II to Class I. These changes help to explain the 1921-1931 decrease in the partial correlation coefficient between fertility and status. Turning from the ratios of

<sup>9</sup> This is an interesting confirmation of a principal result of the writer's previous study which showed that London's Area-Class IV, a group of districts with a population most analogous to England's semi-skilled Class IV, had the most rapid birth-rate decline of all area-classes, from 1922-1924 to 1931-1933. *Op. cit.*, p. 117.



class birth rates to the total population's birth rate, to the actual birth rates in Table 4, diagrammed in Figure 1, then even the excess in fertility of Class V over the other classes is substantially less in 1931 than in 1921, except with respect to Class IV. The closer approximation of the fertility levels of Classes II-IV from 1921 to 1931 is, of course, even more marked in the actual rates than in the ratios while the reversal of the fertility order of I and II is equally prominent in both series.

These differential fertility and trend patterns for the five main social classes are little altered by the separation of Class IIIA from Classes II and III. The latter's birth rates and fertility ratios are slightly raised and the corresponding percentage decreases reduced by one point but these do not suffice to change the rank of these two classes in the fertility order of all five classes nor to alter significantly their place in the pattern of trends. The outstanding results in Table 4B and Figures 1B and 2B pertain to the fertility record of Class IIIA itself. In 1921 corrections for age change IIIA's position from third least fertile class to much the most infertile class of all.

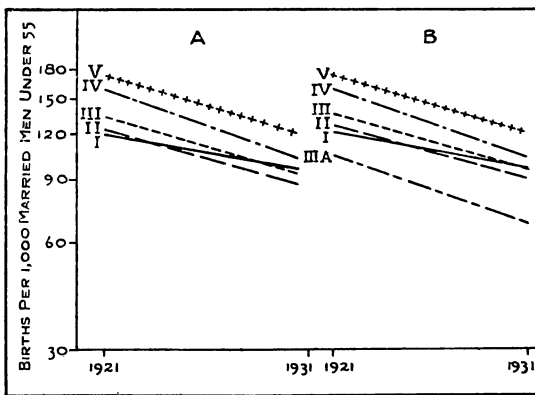


Fig. 2. Trends in adjusted birth rates by social class in England and Wales, 1921-1931.

lower 1921-1931 rates of fertility decline. Inferentially, this preponderantly white-collar class must be characterized by situations and attitudes exceptionally unfavorable to fertility.

This position is maintained in 1931 for the downward trend of IIIA's birth rate approximates that of IV, the class of most rapidly declining fertility. Class IIIA, therefore, does not conform to the tendency of the other infertile Classes II and especially I, to have the lower

BIRTH RATES AND FERTILITY TRENDS IN SELECTED  
SUB-CLASSES AND OCCUPATIONS

Both the very distinctive fertility behavior of Class IIIA in addition to the broad heterogeneous character of the five main classes, especially I-III, encourage the study of birth rates by component sub-classes and selected occupations. The birth rates of distinct groups within Classes I and II in Table 5 and Figure 3 constitute a valuable supplement to the general rates and trends of those two classes.

It is open to question whether the leading professions and certain groups of businessmen should be combined to form a single top class. Doubt may justifiably be raised as to whether any profession is at the top of the socio-economic scale and in any case, differences in mode of work, situation, tradition, etc., suggest that separate treatment is appropriate for each of these two groups in demographic or other analyses. This suggestion is borne out by

Table 5. Unadjusted birth rates, average ages of married men under 55, and adjusted<sup>1</sup> birth rates in sub-classes and occupations of social classes I and II in England and Wales, 1921-1931.

SUB-CLASS OR OCCUPATION	UNADJUSTED BIRTH RATE		AVERAGE AGE		ADJUSTED <sup>1</sup> BIRTH RATE		PER CENT DECREASE 1921-1931
	1921	1931	1921	1931	1921	1931	
Professions, I	110	86	41.0	41.2	128	102	20
Professions, II	87	66	40.4	40.8	99	79	20
Employers, etc., I	74	59	41.9	41.8	102	80	21
Employers, etc., II							
Mining	77	45	42.0	43.0	106	76	28
Manufacturing	98	68	41.8	42.5	125	95	24
Transport and Communication	92	66	42.5	43.5	127	102	20
Retail and Wholesale Trade	104	67	41.4	41.3	127	84	34
Agriculture	131	92	41.5	41.5	155	111	28
Other Business Occupations, II	84	57	41.7	41.7	110	77	30

<sup>1</sup> Adjusted to average age of married men under 55 in total population (39.3).

the results in Table 5 pertaining to Class I Professions<sup>10</sup> and Class I Employers, Managers, etc., chiefly in finance and insurance.<sup>11</sup> Although the fertility trends of these two sub-classes are almost identical,

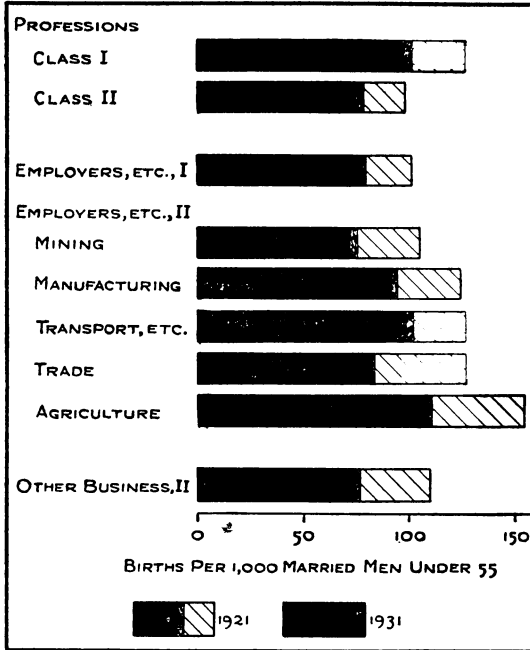


Fig. 3. Adjusted birth rates in sub-divisions of Classes I and II in England and Wales, 1921-1931.

considered to have higher status than the leading professions, then the results evidence a stabilized, *inverse* relation between fertility and status *within* Class I.

Quite a different picture of status-fertility relations is presented when one shifts to the professional sub-class of Class II<sup>12</sup> for comparison with Class I Professionals. Again the 1921-1931 trends are the same, but in this case, there is stabilization of a *direct* association

<sup>10</sup> Occupations 690-1, 810, 812, 814, 820, 826, 830-1, 840-1, 860-5, 868-70 in 1921; 760, 762, 764, 770, 772, 780-1, 790-1, 810-5, 818-20 in 1931.

<sup>11</sup> Occupations 710, 730, 739, 790-3, 796, 829, 882, 930 in 1921; 610, 630, 640, 730-4, 736, 832, 880 in 1931.

<sup>12</sup> Occupations 827, 842, 849-51, 866, 871-5, 879 in 1921; 773, 792, 799, 800-1, 816, 821-5, 829 in 1931.

the financial group's slow rate of decline, relatively to other classes' rates, took place at a much lower level than the same rate for the professional group. Since the fertility of this financial sub-class is still lower than Class II's in 1931, the responsibility for the reversal of the usual Class I-II order of increasing fertility is, in a sense, confined to Class I's professional constituent. If the financial group may be considered to have higher status than the leading professions, then the results evidence a stabilized, *inverse* relation between fertility and status *within* Class I.

between class-status and fertility within comparable occupational fields. This is possibly one of the earliest reversals of the usual inverse status-fertility relationship if one may judge by the roughly analogous data from the 1911 Census Report on the Fertility of Marriage<sup>13</sup> which show no diminution of the inverse relation up to the end of the nineteenth century. On the other hand, for the present period, 1921-1931, the relatively slow decline in this group of Class II Professionals only worked against the general trend of its class in the direction of a lower birth rate than Class I.

The great majority of the persons in Class II is comprised not of the second grade of professions, but of various groups of employers, managers, officials, etc. It is among these that one must look for a more specific characterization of the sub-class or sub-classes primarily responsible for a Class II birth rate lower than Class I's. Moreover, they supply interesting comparisons with the group of employers, etc., who were ranked as Class I.

The Class II groups may perhaps be approximately arranged in order of status and their fertility differences judged in the light of this arrangement. In view of the presence of a large percentage of owners, in a semi-rentier position, the employers, managers, etc., in mining<sup>14</sup> have probably the highest economic position. Of the other four groups, it seems fairly safe to consider employers, etc., in manufacturing<sup>15</sup> and in transportation and communication<sup>16</sup> as groups with higher status than those in retail and wholesale trade,<sup>17</sup> residual business occupations<sup>18</sup> (chiefly agents, buyers, commercial

<sup>13</sup> Writer's previous study, *op. cit.*, pp. 55-64.

<sup>14</sup> Occupations 040, 050, 070, 077 in 1921; 040, 050, 060 in 1931.

<sup>15</sup> Occupations 080, 090, 100, 120, 140, 150, 160, 280, 300, 320, 330, 340, 350, 400, 430, 450, 460, 470, 500, 510, 520, 550, 560, 590, 600, 610, 630, 640, 650, 660, 680, 960 in 1921; 070, 080, 090, 100, 110, 120, 130, 240, 250, 270, 280, 290, 300, 340, 370, 380, 390, 410, 460, 480, 500, 520, 530, 540, 550, 560, 570, 580, 910 in 1931.

<sup>16</sup> Occupations 700, 731-3, 750 in 1921; 590, 611, 631-3, 650 in 1931.

<sup>17</sup> Occupations 711-2, 770 in 1921; 612, 670-85, 686, 689 in 1931.

<sup>18</sup> Occupations 010, 014, 562, 752, 771-3, 779, 797, 799, 880-1, 884, 912-4 in 1921; 010, 014, 482, 652, 690-2, 723, 737, 739, 830-1, 834, 862-4 in 1931.

travelers, innkeepers, publicans), and farming.<sup>19</sup> Certainly the last three contain a much larger proportion of "small businessmen" than the other two.

If this informal ordering by status is followed, there was in 1921 a considerable correspondence between high status and low fertility among businessmen not only for Class I compared with Class II sub-classes but also among the latter groups, with those labeled "Residual Business Occupations" as the only substantial exception. It suggests that this exception contained a large representation of occupations analogous to the outstandingly infertile white-collar Class IIIA. By 1931, several changes in the 1921 inverse status-fertility relationship came into view. With the exception of the small group of owners, managers, etc., in mining, it is the lower status groups of business employers, etc., whose birth rates declined most from 1921 to 1931. Retailers and wholesalers, followed by those in "Residual Business Occupations" and farmers, in that order, had relative fertility decreases which considerably exceeded those in the manufacturing, transport and communication groups in Class II and the finance and insurance sector of Class I. Indeed, the decline of the retailers and wholesalers' birth rate was so sharp as to come within one point of the percentage decrease in Class IIIA's fertility. The net outcome in terms of 1931 differentials is an approximation to the very low fertility level of Class I employers, etc., on the part of retailers and wholesalers and an even lower fertility in the case of "Residual Business Occupations." Both these lower status groups are markedly less fertile than the higher status manufacturing, transport and communication sub-classes in 1931. Only farmers remain more fertile than the latter sub-classes but they have appreciably narrowed the differential. Of all the sub-classes of employers, the high status group, mine owners, etc., have become the least fertile and this is possibly due to the rentier situation of many of its members, a situation well-known to be unfavorable to

<sup>19</sup> Occupations 011-2 in 1921; 011-2 in 1931.

fertility. Yet the predominant feature of the changes in fertility differentials for the various groups of business employers, managers, etc., for the period 1921-1931 is the transition from an association of higher status to one of lower status with infertility.

Besides the sub-classes of Classes I and II, there are several groups of occupations in the same fields of work which have in the past revealed fertility patterns sufficiently distinctive to merit separate analysis. Retail and wholesale trade constitutes a numerically important sector of the gainfully occupied and its managerial, employer, and independent component has been found to be a striking instance of a low birth rate associated with relatively low status in comparison to other groups of employers. But when their birth rates and trends are compared with those of their own employees, primarily salesmen and shop assistants,<sup>20</sup> a very different situation is found. In 1921, the birth rate of shop assistants was appreciably lower than that of the employers and independents in "trade," and indeed not much greater than the birth rate of the clerical sub-class, IIIA. However, the 1921-1931 birth rate trends of salesmen, etc., and retail and wholesale employers, etc., follow the long familiar pattern of higher status and sharper fertility decline so that by 1931 there is practically no difference between these two groups' birth rates and the difference in fertility between shop assistants and Class IIIA has been much increased. It is quite possible that the social and economic circumstances of shopkeepers and wholesalers were peculiarly inhibitive of fertility during this period. However, it may also be that a heavy recruitment of their salesmen from children of manual workers' families is responsible for the disappearance of the direct relation between status and fertility in this line of business from 1921 to 1931. Certainly the limited evidence available indicates that commercial employees of working-class origins are more fertile than those who come from other urban classes<sup>21</sup> and

<sup>20</sup> Occupations 775 in 1921; 700-17, 719 in 1931.

<sup>21</sup> See Gewerkschaftsbund der Angestellten: *The Salaried Employee in his Economic*  
(Continued on page 86)

retail trade is a channel of less difficult transition from manual to white-collar work.

One class of workers, agricultural laborers,<sup>22</sup> considered sufficiently distinctive as to their fertility to be separately analyzed in the 1911 Census Report by the late T. H. C. Stevenson offers an interesting and relevant birth rate comparison with another low status Class II component, farmers. A close similarity here appears to the differential fertility position of retailers, wholesalers, etc., and salesmen and shop assistants. Agricultural laborers had approximately the same fertility as farmers in 1921. They resemble salesmen and shop assistants in that their 1921-1931 birth rate decline was less than that of the employer group in the same industry. Consequently, by 1931, agricultural laborers are again distinctly more fertile than farmers. But it is hard to conceive of any selective factor which may have affected the birth rate of agricultural laborers in the same way that the probable movement of manual workers' descendants tended to influence the fertility of retail sales clerks, etc. Thus we are compelled to regard the decade 1921-1931 as peculiarly unfavorable to the fertility of the small independents who predominate in agriculture. During that period, the two subclasses of farmers and agricultural laborers again showed the same association of greater decline in birth rate with higher status that they had exhibited in the data of the 1911 Census Report but which had apparently been eliminated by 1921.

The other two industries which supplied special classes for the fertility analyses in the 1911 Report on the Fertility of Marriage were textiles and mining. In both cases, the data in Table 6 and Figure 4 provide a basis for determining whether their earlier fertility trends have continued to set them apart from their corresponding general social classes. In the 1911 Report, textile operatives were

and Social Development, pp. 26-27. (Translation by A. Lissance, published in 1938 under the auspices of the Works Progress Administration with the cooperation of the Department of Social Science, Columbia University.)

<sup>22</sup> Occupations 020, 022-4 in 1921; 020-3 in 1931.

much the least fertile of the six working class categories for which completed fertility rates were calculated. The 1921 birth rates of both the Class III<sup>23</sup> and Class IV<sup>24</sup> groups of textile workers also show them to be considerably less fertile than their corresponding general classes. This comparative infertility is only accentuated in 1931 for the birth rates of both classes of textile workers declined more sharply than either the Class III or the Class IV birth rates and also more rapidly than the birth rate of their own employers, managers, etc. By 1931, they supply a conspicuous illustration of *direct* association of infertility with low status for they have birth rates not

Table 6. Unadjusted birth rates, average ages of married men under 55, and adjusted<sup>1</sup> birth rates for selected industrial groups by social classes in England and Wales, 1921-1931.

INDUSTRIAL GROUP	UNADJUSTED BIRTH RATE		AVERAGE AGE		ADJUSTED <sup>1</sup> BIRTH RATE		PER CENT DECREASE 1921-1931
	1921	1931	1921	1931	1921	1931	
Retail and Wholesale Trade							
Employers, etc., II	104	67	41.4	41.3	127	84	34
Salesmen and Shop Assistants, III	129	104	37.5	36.8	110	83	25
Agriculture							
Farmers, etc., II	131	92	41.5	41.5	155	111	28
Agricultural Laborers, etc., IV	154	127	39.6	38.9	157	124	21
Textiles							
Class II	67	54	42.2	42.6	98	82	16
Class III	102	66	39.5	39.1	104	64	38
Class IV	138	85	39.0	38.4	135	77	43
Classes III, IV	112	72	39.4	38.9	113	69	39
Mining							
Class II	77	45	42.0	43.0	106	76	28
Class III	193	134	37.5	38.4	174	126	28
Class IV	214	107	38.0	38.6	200	101	50
Class V	161	90	38.8	38.2	156	81	48
Classes III, IV, V	199	124	37.7	38.5	182	117	36

<sup>1</sup> Adjusted to average age of married men in total population (39.3).

<sup>23</sup> Occupations 351-61, 365, 367-71, 374-9, 382-3, 385, 396-8 in 1921; 301-11, 315, 317-20, 322-6, 330-1, 337-8 in 1931.

<sup>24</sup> Occupations 362-4, 366, 372-3, 380-1, 384 in 1921; 312-4, 316, 321, 327-9, 332 in 1931.



only lower than that of their own employers, etc.,<sup>25</sup> but also lower than those of the general Classes I and II. Indeed, the skilled group's rate is less than even the birth rate of the outstandingly infertile

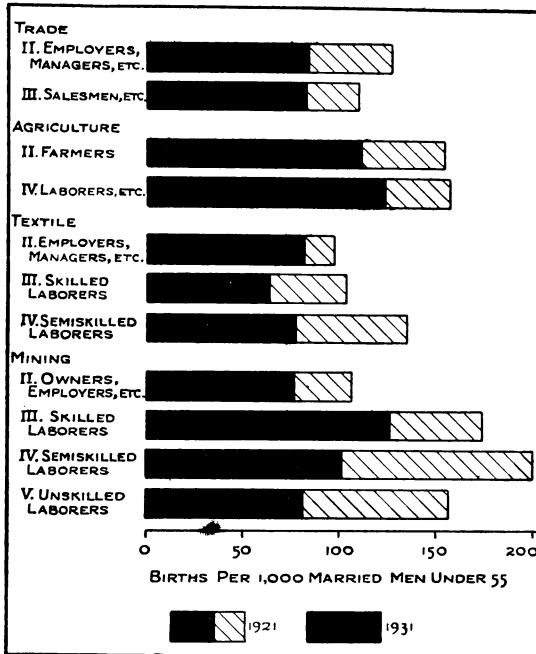


Fig. 4. Adjusted birth rates in selected industrial groups in England and Wales, 1921-1931.

white-collar class IIIA while the semi-skilled's birth rate is only ten points higher. Semi-skilled textile operatives follow the general pattern of Class IV's fertility decline in that they too reduced the relative fertility differential between them and the skilled sector. At the opposite extreme from textile workers, the 1911 Report showed miners to have the highest and most slowly declining fertility of all the special and general classes. This statement holds partially true for the birth rate of the skilled group of miners,<sup>26</sup> since it was higher in 1921 and 1931 than any general class birth rate and than either textile workers' or agricultural workers' birth rates, yet its 1921-1931 decrease was very little different from Class III's and distinctly greater than the relative decline in agricultural laborers' fertility. On the other hand, the relative decreases in the birth rates of the semi-skilled<sup>27</sup> and unskilled<sup>28</sup> in mining far exceed the declines, respectively, in Class IV and Class V birth rates. In

<sup>25</sup> Occupation 350 in 1921; 300 in 1931.

<sup>26</sup> Occupations 041-2, 051, 054, 071, 078 in 1921; 041-2, 051, 054, 061 in 1931.

<sup>27</sup> Occupations 043-4, 047, 049, 056, 072-3, 076, 079 in 1921; 043-4, 047, 049, 056, 062-3, 069 in 1931.

<sup>28</sup> Occupation 074 in 1921; 064 in 1931.

1921 the unskilled workers in mining were appreciably less fertile than Class V and by 1931 this differential was much increased. Semi-skilled mine workers had still a much higher birth rate than Class IV but in 1931 this large difference had been wiped out. Comparing the three classes of mine workers, the status-fertility association was inconsistent in 1921 in that it was inverse for Classes III and IV but direct when these two groups are compared with Class V. In 1931, mine workers constituted a very thorough embodiment of a direct relation of fertility to social status *within the working class*. Although the birth rate of skilled miners decreased no more rapidly than that of their employers, managers, etc., for 1921-1931, so much greater were the decreases for the semi-skilled and unskilled that the differential between the employers' and workers' birth rates was decidedly reduced.

#### SUMMARY

1. Class birth rates, unadjusted for age variation, show that in 1921 the usual inverse relation between status and marital fertility still held but Class II was only slightly more fertile than Class I. On the other hand, by 1931 the birth rates in Class II and in IIIA, a special white-collar class, were definitely lower than that of Class I. Also analogously to fertility trends in London area-classes, the birth rate declined in Class IV more rapidly than in any other general class.

2. Substantial and stable differences in average ages of married men under 55 between Classes I-II and III-V impair the value of unadjusted birth rates as indices of class differentials in 1921 and 1931.

3. According to birth rates "adjusted" to eliminate the effects of age differences, the reversal in 1931 of the 1921 inverse status-fertility association for Classes I and II is not eliminated by age adjustment. On the other hand, the adjusted birth rates for IIIA place it as the least fertile class even in 1921 and by reason of its

sharp 1921-1931 decline, it is even more conspicuously the class of relatively lowest fertility in 1931. Again, Class IV is the class of most rapid decrease in fertility from 1921 to 1931.

4. Cross-classification of fertility and occupational data by class and general type of work or industry brought out a variety of status-fertility relations and changes therein for 1921-1931. (a) Class I and II professionals showed a stable *direct* relation between fertility rates and status for the period. (b) Class I employers, managers, etc. (chiefly finance and insurance) had birth rates for the entire period much lower than those for Class I professionals, but these declined less rapidly than the birth rates of the lower status groups—retailers and wholesalers, miscellaneous Class II business occupations, and farmers for 1921-1931. Of these last three groups, all but farmers had become less fertile by 1931, in contrast to 1921, than the presumably “bigger business” group in manufacturing, transportation and communication. Hence, an inverse relation between class status birth rates was in good part replaced by a direct relation within Class II. (c) Proprietors, managers, etc., in retail and wholesale trade had a greater birth rate decline than salesmen and shop assistants so that the 1921 direct association of status with fertility in this socio-economic sector was no longer present in 1931. (d) An inverse fertility differential between farmers and agricultural laborers, absent in 1921, was re-introduced in 1931. (e) Textile workers, both skilled and semi-skilled, outstanding with respect to the low level and the sharp decline of their birth rates, became less fertile than their own employers in 1931 and joined Class IIIA as the least fertile groups investigated. (f) Only skilled miners remained more fertile than their general class in 1931 while the birth rate of unskilled mine workers was already less fertile than Class V in 1921. Both semi-skilled and unskilled mine workers’ birth rates had exceptionally drastic decreases, *circa* 50 per cent, from 1921 to 1931.

APPENDIX

A. BIRTH RATES FOR MARRIED MEN AND AGE ADJUSTMENTS

The 1931 as well as the 1921 occupational fertility tables are weakened by making 1,000 husbands, not wives, the base in the calculation of birth rates. The fragmentary evidence available<sup>1</sup> indicates that the average excess in ages of husbands over ages of wives is not approximately the same for all classes. Although it is not clear that this age gap varies appreciably for Classes II to V (1911 Classification), it does appear to be true that in the highest class, husbands are older than wives by two or three years more than they are in the other four classes. This situation raises the difficulty that any process of adjustment of husbands' ages to a common norm, by standardization or correlation, is likely to mean over-compensation in the case of Class I. In effect, the ages of wives in this class are probably made lower than the norm for the population.

Unless the atypically large excess of Class I husbands' over wives' ages fluctuates appreciably within a decade, it should not be so damaging to a study of 1921-1931 birth rate trends as to an analysis of cross-section differences in either year taken alone. If this factor operates as a constant bias, it can affect changes in the birth rates only if there are markedly different rates of fertility decline in populations differing by only two or three years in average age of mothers. The trend picture would still not be as distorted by a constant as by a changing bias. There is lacking any evidence to determine the stability of the large age discrepancy between husbands and wives in Class I for 1921-1931 or even 1911-1921. It is possible that this discrepancy was less serious in 1921 and 1931 than in 1911. Moreover, it has already been noted that the limited 1911 data indicate no comparable distortion of birth rate differences between Classes II, III, IV, and V.

B. OFFICIAL OCCUPATION AND CLASS DISTRIBUTIONS, 1921-1931

The classificatory changes which were introduced in 1931 are comprised of (1) alterations in the 1921 denotation and classification of occupations effected in the 1931 Census and (2) shifts from 1921 to 1931 in the class status attributed to certain occupations in the Registrar-General's Decennial Supplements. Obviously the latter have an immediate bearing on class fertility trends. It might seem that the former have significance only where a transfer

<sup>1</sup> See *Fertility of Marriage. Census of England and Wales, 1911*, xiii, pp. xiv-xix, xxvii-xxviii; also *The Registrar-General's Decennial Supplement for England and Wales, 1921*, pp. xcvi-xcviii.

from one social class to another is made. This is quite true in so far as one is interested only in the fertility trends of broad social classes. Yet it is valuable to group occupations into sub-classes or restricted occupational categories for the further analysis of birth-rate changes. Then it is necessary to cope with as many specific occupational changes as possible whether or not they are tied up with transfers between social classes. To delimit and arrange specific occupations and fix their class status comparably for 1921 and 1931, the 1931 official treatment has been used as the standard wherever feasible.

The changes in the classification of occupations introduced in 1931 are listed in detail in the 1931 Census volume OCCUPATION TABLES.<sup>2</sup> They can be divided into three groups—(a) separations in 1931 of occupations which were combined in 1921, (b) combinations in 1931 of occupations which were separately tabulated in 1921, (c) shifts of sub-occupations from one occupation in 1921 to another in 1931. For the most part it is impossible to calculate birth rates for 1931 occupations recombined for comparability with 1921 rates because there is no tabulation of births by specific occupations in Part IIA of the 1931 Registrar-General's Decennial Supplement. At any rate, of the additional categories introduced by changes of type (a) there are very few of quantitative importance which have status ratings different from those of 1921.

In some cases it is possible to solve by means of estimates the problem presented by the changes of type (a). Table I in the 1931 Decennial Supplement supplies, with a great many omissions, statistics classified by father's occupation on deaths under one year for legitimate children born 1930-1932 and on annual infant mortality per 1,000 legitimate live births in 1931.<sup>3</sup> Where such data are given, total births can be estimated and corresponding occupational birth rates calculated. This procedure has been followed in the case of locomotive engine firemen and cleaners who were combined with other Class III occupations in 1921 but separately tabulated and rated IV in 1931.

The second type of changes, from separate categories in 1921 to combined categories in 1931 are much more readily handled according to the plan to use the 1931 classification as standard. By means of the occupational statistics in the 1921 Decennial Supplement,<sup>4</sup> the 1931 combinations of specific occupations can be duplicated for 1921. Usually the various 1921 occupations combined in 1931 fall within single Occupation Orders but where they do not,

<sup>2</sup> *Op. cit.*, pp. 673-680.

<sup>3</sup> *Op. cit.*, pp. 191-210.

<sup>4</sup> *Op. cit.*, pp. ciii-civ.

the Order to which they have been allocated in 1931 has been followed.<sup>5</sup> In addition, single occupations have been transferred from one 1921 Occupation Order to another in line with changes made in the 1931 classification.<sup>6</sup>

In the case of the third type of occupational rearrangement where sub-occupations have been placed in different occupations in 1921 and 1931, it is impossible to reconstruct the occupations on the same basis for both years since there are no sub-occupational data. One might resort to the makeshift of combining the occupations between which sub-occupational transfers have been made. This makeshift is ordinarily to be avoided because it over-rides occupational and sometimes class differences between large groups of individuals. However, despite its objectionable character, it has been necessary to follow this procedure in the case of one highly important sub-occupational category, viz., Civil Service and Local Authority Clerks.<sup>7</sup>

When all feasible adjustments<sup>8</sup> of the differences between the 1921 and 1931 specific occupational classifications have been made, there remains the less difficult problem presented by the 1931 official revisions in the social classification of occupations. To meet this problem, the 1921 official statistics for births and married men under 55 by social class have been recalculated as far as possible on the basis of the 1931 social classification of occupations. Thus fifty-three occupations were transferred from one social class to another in the 1921 tabulations.<sup>9</sup> On the other hand, four 1931 occupations which had been

<sup>5</sup> Where occupations are drawn from different Orders, the Order to which they have been assigned is indicated in brackets after the 1921 Code Number of the last constituent occupations. The combinations made are 016, 027; 017, 021; 018, 026, 039; 070, 077; 071, 078; 076, 079; 088, 693 (IV); 089, 099, 119, 139, 149, 159, 279, 299, 319, 329, 339, 349, 399, 429, 449, 459, 469, 499, 509, 519, 549, 559, 599, 609, 619, 639, 649, 659, 669, 689, 699, (XXXI); 109, 110; 126, 127, 138; 170, 171, 173; 240, 251; 261, 267, 278; 305, 306, 307, 310, 311; 324, 325, 328; 366, 372; 367, 371; 377, 398; 396, 558 (XVIC); 436, 448; 454, 458; 475, 476; 504, 508; 532, 534; 535, 536; 537, 538; 563, 571, 588; 572, 574, 575; 578, 581, 589; 592, 593, 598; 613, 618, 682, 683; 692, 961 (XXXI); 698, 965, 966, 989 (XXXI); 714, 716; 715, 725; 717, 729; 742, 749; 789, 889 (XXVI); 794, 795; 829, 930 (XXVIII).

<sup>6</sup> The following transfers of occupations by Code Number have been made: 107, 108 from V to XVIII; 259 from VII to XXXI; 382, 383 from XII to XVII; 478 from XV to XVIII.

<sup>7</sup> See *infra*, pp. 20-21.

<sup>8</sup> In addition to the changes already described, two occupations (Nos. 821 and 987) had to be omitted from the 1921 tabulations. Moreover, births for five managerial occupations (Nos. 410, 430, 440, 450, 460) were not included in Table 14A of the 1931 Decennial Supplement. Estimated births of 724 and 424 were added for occupations 410 and 460, but since not even estimates could be made for 430, 440, and 450, they had to be dropped from the 1931 tabulations of husbands under 55.

<sup>9</sup> By class and code number, these transfers were: from I to II, 752; II to I, 691, 882; II to III, 017, 563, 713, 714, 734, 789, 828, 911, 939; III to II, 849; III to IV, 018, 076, 118,

sub-occupations with a different social status in 1921, were reallocated back to the social classes which had included them in the earlier year,<sup>10</sup> for it was possible to estimate the number of births which were involved.

#### GOVERNMENT CLERKS AND CLASS IIIA

Combination of Civil Service and Local Authority Clerks with their respective groups of officials in 1921 and with "Other Clerks" in 1931 presents a serious problem further complicated by the gaps in the 1931 data from which estimates of births can be made. Broadly, *two* semi-solutions of this problem have been used in this analysis.

The first way to meet the difficulty in part is to preserve the five-fold social classification even at the cost of giving to certain occupations class *loci* different from their official rankings in 1921 and 1931. When Civil Service and Local Authority Clerks were transferred in 1931 from Public Administration to Clerks and Draughtsmen they were placed in Class III instead of Class II. Class III is therefore the only available category to which one can assign the occupations with which they were combined in 1921 and from which they were separated in 1931. In addition to these occupations, Police Chief Constables, Inspectors and Superintendents had also to be placed in Class III instead of II in both years because of deficiencies in the 1931 birth data. Revision in status from II to III affected three government occupations in 1921 and four in 1931.<sup>11</sup>

The second solution avoids the inclusion in Class III of a sizeable Class II group (27,980 husbands under 55 in 1931) by means of the predominantly clerical sub-class, IIIA.<sup>12</sup> In creating Class IIIA, it is possible to combine with the Class III and Class II constituents of Clerks and Draughtsmen, the government occupations transferred to Class III by the first method. Thus these occupations are included in a relatively homogeneous "white-collar" class, not in the already heterogeneous Class III.

384, 434, 705, 715, 774; IV to III, 021, 027, 236, 580, 588, 889, 954; IV to V, 229, 319, 329, 339, 349, 399, 429, 449, 459, 469, 549, 559, 578, 589, 609, 619, 639, 649, 689, 706, 922, 942; V to IV, 079, 965, 966. This list includes all changes in social status which were involved in the combinations of separate occupations described in footnote 5.

<sup>10</sup> From II to III, 015; IV to III, 593, 594; IV to V, 355.

<sup>11</sup> By code number these occupations are 800, 805, 808 in 1921 and 740, 742, 743, 750 in 1931. One new 1931 category "Other Civil Service," was already transferred to Class III in the official classification.

<sup>12</sup> Class IIIA combines occupations numbered 800, 805, 808, 931-3, 939 in 1921; 740-3, 750, 881-4, 889 in 1931.

## C. CONSTRUCTION OF CORRELATION SERIES IN 1921 AND 1931

The chief reason why only 56-item series can be utilized in the 1931 correlations is the absence of a tabulation of births by specific occupation of father in that year. By means of the material in the Decennial Supplement's Table 14 on births a series of birth rates can be calculated for occupations grouped by occupation order and social class. As published this would yield a series of eighty-five items by combining Table 14 with the totals of married men under 55 in the Occupations Census. But it is first necessary to effect the additions, subtractions, and transfers already employed in the calculation of unadjusted class birth rates. Furthermore, it is highly advisable to combine small categories with extraordinarily high or low birth rates with larger categories in Table 14 in order to avoid the distortion of coefficients by a few extreme variants of little quantitative consequence in the total population. In making such combinations, cognate occupations have been chosen so far as it has been feasible. Moreover, the number of items for each social class has been kept very roughly in line with its quantitative importance in the population, with the unavoidable exception of Class I occupations. In none of these combinations has any category been transferred from one class to another. The net result of these rearrangements is to replace the original 85-item series with a more defensible 56-item series,<sup>13</sup> still large enough to sustain a three-variable correlation analysis.

Whatever biases may have been introduced in the compilation of the 1931 series should, at least, be made constant by a maximal duplication of the 1931 grouping in drawing up the 1921 classification. For the most part, by incorporating the changes described in connection with the computation of

<sup>13</sup> Both in the following list for 1931, as well as in the corresponding 1921 grouping under each social class, from I to V, any occupational category used is designated by the official occupation order, from I to XXXI, and, where necessary, by the occupation sub-order, from A to D, if the category includes all the specific occupations of a given class in the occupation order or sub-order. Where an occupational category covers only a selection of occupations among any of its constituent orders or sub-orders, or where an occupation has been transferred from another order, these occupations are listed by code number. Class I—XXII and XXIII; XXIVB and XXXI; XXV (770-2); XXV (780-1, 810-5, 818-20); XXV (790-1); XXVI and XXVIII; Class II—II; III-VII; VIII-XII, XX, XXI, and XXXI; XIII; XIVA, C, D; XIVB, XVA, and XVII; XVIII and XIX; XXII, XXIII, and XXVI; XXV (773, 792, 799, 816, 821-5, 829); XXV (800-1); XXVII; XXVIII; Class III—II; III; IV-VII; VIII-X; XI, XX, and XXI; XII; XIII; XIV; XV and XVI; XVII; XVIII and XIX; XXIIA; XXII B, C, D; XVIII and XXIVB; XXIVA; XXV and XXVI; XXVII; XXVIII; XXIX; XXX; XXXI; Class IV—I and II; III; IV, V, VII, and IX; XII and XIII; XIV-XVII; XVIII and XIX; XXIIA and XXIII; XXII B, C, D and XXIV; XXVII; XXIX; XXX; XXXI; Class V—II, III, XXVII, XXIX and XXXI (913, 918, 950); VII, XIII, and XXXI (920, 930, 940); XVII; XXII; XXIII.



general class birth rates, it has been possible to achieve this comparability of 1921's 56-item<sup>14</sup> series with the 1931 series.

The 526-item series which served to check the 56-item correlations for 1921, were drawn from the 602 specific occupations for which births and birth rates were tabulated in the 1921 Decennial Supplement. The excluded entries<sup>15</sup> were comprised with few exceptions of occupations with birth rates so improbable that it seemed very likely that many married men under 55 who had been entered in those occupations at the Census, had been excluded from them at the time of birth registrations. The remaining omissions were due to advisable combinations.<sup>16</sup>

<sup>14</sup> Class I—XXI (690-1) and XXV (830-1, 860-5, 868-70); XXII and XXIII; XXIVB and XXXI; XXV (820, 826); XXV (829), XXVI and XXVIII; XXV (840-1); Class II—II (010-2, 014); III-VII; VIII-XII, XIX, XX, and XXXI; XIII; XIV A, C; XIV B, XV, and XVI; XVII, XVIII; XXII, XXIII, and XXVI; XXV (827, 842, 849, 866, 871-5, 879); XXV (850-1); XXVII; XXVIII; Class III—II (013, 015-7, 021, 027); III; IV-VII (excl. 107-8); V (107-8), XV (478), XVII and XVIII; VIII-X; XI, XIX, and XX; XII (excl. 382-3, 396); XII (382-3) and XVII B; XII (396), XV (excl. 478) and XVI A, C; XIII; XIV; XXI (692) and XXXI; XXII A; XXII B, C, D; XXIII, XXIV B, and XXVI (889); XXIV A; XXV and XXVI (excl. 889); XXVII; XXVIII; XXIX; XXX; Class IV—I and II; III; IV, V, VII (excl. 241, 259) and XXI (693); VII (241) and XVII; VII (259), XXI (698) and XXXI (excl. 987); XII and XIII; XIV-XVI; XXII A and XXIII; XXII B, C, D and XXIV; XXV; XXIX; XXX; Class V—II, III, XXVII, XXIX, and XXXI (963-4, 979); IV-XVI, XVIII-XXI and XXXI (970-1); XVII; XXII; XXIII.

<sup>15</sup> Excluded occupations by code number—000, 038, 077-9, 101, 110, 121, 141, 151, 164-6, 169, 281, 301, 321, 331, 341, 351-6, 359, 401, 431, 451, 461, 471, 501, 511, 521, 551, 561, 591, 601, 611, 631, 641, 650-1, 661, 681, 710, 715-6, 734, 751, 790, 795, 810-5, 821, 830, 840, 843, 861-2, 865, 912, 930, 961, 979, 987-8.

<sup>16</sup> 011 and 012 were combined; also 562, 931-3, and 939.