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EARLY VICTORIAN HOUSEHOLD STRUCTURE: A CASE STUDY OF NOTTINGHAMSHIRE

I

The need to study the historical roots of the household is gradually becoming accepted, although as yet methods of approach are still being developed and debated.[1] For the student of the mid-nineteenth century, the census enumerators' books provide basic data for such an enquiry. They give the occupation, marital status, age and birth place for every member of each household in all registration districts throughout the country. In order to exploit this information effectively, a sophisticated methodology is required. One has been suggested by Dr W. A. Armstrong. It involves selecting a sample of households from a district, and translating the information thus gained into numerical form, which can then be placed onto punched cards. By sorting them mechanically it becomes possible to make a whole series of quantitative statements about the households, such as their mean sizes, the numbers headed by widows, etc.[2] This method has attracted some support, but it has not been without its critics. Some have voiced general scepticism about "quantitative" history; others have questioned specific points.[3] In rejoinders Armstrong has backed up his arguments with illustrations from his researches into York as well as with some of my own Nottinghamshire results. However, these discussions have been conducted in something of a vacuum. This is an indication that there is now room

[1] See especially E. A. Wrigley (ed.), An Introduction to English Historical Demography (1966) (hereafter referred to as Introduction), and P. Laslett, The World We Have Lost (1965).

[2] This gives only a very broad outline of the method, for a more detailed description see W. A. Armstrong, "Social Structure from the Early Census Returns", in: Introduction; and "The Interpretation of the Census Enumerators' Books for Victorian Towns", in: The Study of Urban History, ed. H. J. Dyos (1968) (hereafter referred to as Interpretation).

[3] R. C. Floud and R. S. Schofield, "Social Structure from the Early Census Returns", in: Econ. Hist. Rev., XXI (1968), have argued that the sampling technique used by Armstrong is not random and so could be biased. Armstrong, in a rejoinder, maintains that whilst strictly speaking this criticism is justified, such a bias, in fact, is likely to be insignificant.

for the publication of actual community studies. The aim of this article is, therefore, to make a comparative study of households based on the 1851 census enumerators' books, for three socially and economically contrasting districts in Nottinghamshire.[1]

The largest of these districts was Nottingham which, by 1851, had a population of 58,000. Framework knitting and machine lace making were its staple industries, both of which employed numerous girls and women.[2] Consequently, the town had an unusually high proportion of females.[3] The freemen controlled about three-quarters of the land within the borough, most of which they refused to release for building. It was this policy which gave the town its infamous reputation for overcrowded working class dwellings. Most of them stood on non-porous rock or low lying land. In either case, good drainage was impossible and water supplies were frequently polluted. As a county town and former ducal seat, the town had a substantial upper class, but by residing in the more elevated parts they escaped much of its squalor.[4]

This, albeit artificial, land shortage encouraged many people from among the town's working classes to migrate to the second of our areas, the registration district of Radford. This became essentially a working class community with lace making and framework knitting constituting its staple industries, but with somewhat less opportunities for female labour than the town. Thus, Radford was an "overspill" area composed of three open parishes in which there were no hindrances to building.[5] As they adjoined the Nottingham boundaries, some of the houses erected in them actually formed suburbs of the town; other dwellings were built round the core of older settlements, forming a cluster of

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[1] Based on Chapters 6 and 7 of my Ph.D. thesis, Social Structure of Nottingham and Adjacent Districts in the Mid-Nineteenth Century: An Essay in Quantitative Social History (presented to Nottingham University 1968) (hereafter referred to as Thesis).

[2] J. D. Chambers, Modern Nottingham in the Making (1945); R. A. Church, Economic and Social Change in a Midland Town: Victorian Nottingham 1815-1900 (1966).

[3] Females per 1,000 males, 1851: Nottingham, 1,158; Radford, 1,111; Bingham, 995; Bradford, 1,042; Leeds, 1,069; Sheffield, 991; Leicester, 1,004; Derby, 1,103; Liverpool, 1,032; England and Wales, 1,042.

[4] See the evidence of Thomas Hawkesley, "Ev. to R. C. on State of Large Towns and Populous Districts, 2nd Report", in: Parl. Papers, XVIII, 1845; E. Season, "A Report on the Sanitary Condition of Nottingham", in: Nottingham Corporation Papers, 1873; W. Felkin, "Statistics of the Labouring Classes of Nottingham", in: Journal of the Statistical Society, Vol. II (1839).

[5] For a full analysis of the movement of population from Nottingham to Radford see Thesis, Chap. 3.

industrial villages.[1] The district grew rapidly and between 1801 and 1851 it expanded from 4,000 to 27,000 persons. Although the actual design and quality of the Radford working class houses differed little from many in Nottingham, and although complaints suggest that drains were equally inadequate,[2] the more favourable death rates amongst the whole community suggest that lower housing densities were beneficial to health.[3] We shall go on to show that Radford had a relatively larger working class composition than Nottingham (see Table 2). We cannot, therefore, argue that higher standards of living were responsible for lower death rates in the suburbs.

Our third area, the registration district of Bingham, was rural. It lay to the south-east of Nottinghamshire and contained mainly small arable farms. Some of the wealthier farmers lived in well constructed stone houses. In contrast, the poorest of the labourers had stud and mud cottages.[4] Sanitary provisions in all were perfunctory,[5] and yet death rates were low.[6] The population grew from 10,000 to 16,000 between 1801 and 1851, but because there were insufficient employment opportunities, much of its natural increase emigrated, presumably into nearby towns.[7]

II

The modern sociologist is able to define the term "household" with some precision. However, in 1851 the Registrar General was content to describe it simply as all those persons living within a separate building, and, broadly, this is the definition we must adopt. Accordingly, Table 1

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[1] "Children's Employment, Appendix of Ev.", in: Parl. Papers XIV, 1843, Ev. No 155; F. and J. White, History and Directory of Nottinghamshire (1853), p. 27; Lascells and Hegar, Commercial Directory of Nottingham (1848), pp. xxxvf.

[2] Nottingham Review, 4/2/1842; 11/9/1846; 8/9/1848.

[3] During the period 1849-'53 Nottingham had an average annual death rate of 29.0 per 1,000 population (standardised to the age structure of the population of England and Wales in 1851, thereby removing any age differential bias) compared with 24.5 for Radford. The statistics from which these figures were calculated came from the Annual Reports of Births, Marriages and Deaths, prepared by the Registrar General, together with the printed census volumes.

[4] F. and J. White, op. cit. (1844 ed.), p. 40; A. Cossons, "The Villagers Remember", in: Trans. of the Thoroton Soc., LXVI (1962), p. 79.

[5] W. Howitt, Rural Life in England, Vol. I (1838), p. 142; General Board of Health Correspondence, Bingham Union Files, Public Record Office, MH 13/217 1863.

[6] 1849-'53 death rates 17.2 per 1,000 standardised to the age structure of England and Wales 1851.

[7] Between 1841 and 1851 there was a net emigration from Bingham of about 2,000 persons, or some 13% of the total 1841 population.

shows the mean household sizes and compositions of our three districts.[1] Because the means are calculated from a sample, they are subject, in 95% of all cases, to calculable ranges of error;[2] these follow the means.

Table 1: *Household Composition, 1851*

	Nottingham	Radford	Bingham
Number of cases	1,246	1,089	837
Mean: Household heads	1.00	1.00	1.00
Mean: Wives per family	.72 ($\pm$ .02)	.78 ($\pm$ .02)	.71 ($\pm$ .03)
Mean: Children per family	1.82 ($\pm$ .10)	2.30 ($\pm$ .12)	2.01 ($\pm$ .14)
Mean: Family size	3.54 ($\pm$ .11)	4.08 ($\pm$ .14)	3.72 ($\pm$ .15)
Mean: Relatives	.26	.23	.38
Mean: Lodgers	.41	.25	.37
Mean: Domestics	.16	.11	.22
Mean: Visitors	.08	.08	.07
Mean: Household size	4.45 ($\pm$ .13)	4.75 ($\pm$ .14)	4.75 ($\pm$ .17)

A glance at the table shows a number of significant differences in the household compositions of the three districts. But such variations may simply reflect diverse social compositions. It is, therefore, desirable to analyse the households by social class. It has been suggested that each household can be given a classification based on the occupation of the household head.[3] A modified version of the 1950 Registrar General's status groups, which range from I to V, can be employed to do this.

These groupings are based largely on incomes but they also take into account general standing within the community. It may be objected that one should not use a mid-twentieth century classification on mid-nineteenth century occupations. The answer to this justifiable criticism is that circumstances force it upon us. There is no other simple scale

[1] The enumerator' books are to be found at Public Record Office, HO 107 1851. This research was undertaken before Floud and Schofield, art. cit., wrote their criticism of the sampling technique. In the case of Nottingham the enumerators' books were worked through and every tenth household was selected; in the case of Radford, every fifth; in Bingham, every fourth. Chi-squared tests showed the samples to be good. See Thesis, Appendix E, Section 2. The raw tables from which Table 1 and subsequent tables have been calculated are in ibid., Appendix D.

[2] $\bar{x} \pm 1.96 \dfrac{\sigma}{\sqrt{n}}$, where σ is the standard deviation of the sample mean, n the number of cases and $\bar{x}$ the sample mean.

[3] For a more detailed explanation see Armstrong, Introduction, pp. 223 and 272f., and his Interpretation, pp. 78f.

which we can use. For this article we shall use two broad social categories, namely the upper classes (I-II) and the working classes (III-V). It is true that such a scheme does present problems. Are we justified, for example, in amalgamating the skilled and unskilled workers? Our plea is that the narrower divisions, especially if we take into account their wider ranges of error, become much more complex to handle and interpret. We are much safer with our broad classifications and can place much more confidence in our results. Remembering these qualifications we can, therefore, boldly continue.

The upper classes include professional persons, entrepreneurs, managers, farmers, and those living on annuities and other investments. The working classes contained skilled, semi- and unskilled labour, agricultural labourers, shopkeepers, servants, etc. By this classification 20.5 ($\pm$ 2.7)% of Binghams' households were upper class; 14.5 ($\pm$ 2.0)% of Nottingham's and 6.9 ($\pm$ 1.5)% of Radford's.[1] Table 2 gives the household structures of the three districts according to the two social categories. The household structures of the Bingham farmers (included amongst the upper classes) have also been provided as they will form an important component in some of the subsequent analyses.

Table 2: *Household Composition by Social Classification, 1851*

	Upper classes	Working classes
(a) *Nottingham*		
Number of cases	181	1,042
Mean: Household heads	1.00	1.00
Mean: Wives per family	.72 ($\pm$ .06)	.73 ($\pm$ .03)
Mean: Children per family	1.69 ($\pm$ .28)	1.84 ($\pm$ .12)
Mean: Family size	3.41 ($\pm$ .32)	3.57 ($\pm$ .12)
Mean: Relatives	.24	.26
Mean: Lodgers	.52	.40
Mean: Domestics	.72	.07
Mean: Visitors	.23	.06
Mean: Household size	5.12 ($\pm$ .40)	4.36 ($\pm$ .13)
(b) *Radford*		
Number of cases	75	975
Mean: Household heads	1.00	1.00
Mean: Wives per family	.68 ($\pm$ .06)	.81 ($\pm$ .02)
Mean: Children per family	1.96 ($\pm$ .46)	2.34 ($\pm$ .13)
Mean: Family size	3.64 ($\pm$ .57)	4.15 ($\pm$ .14)

[1] The ranges of error of a proportion are obtained from the formula: $p \pm 1.96 \sqrt{\dfrac{p(1-p)}{n}}$, where p is the sample proportion and n the number of cases.

	Upper classes	Working classes	Farmers
Mean: Relatives	.47	.21	
Mean: Lodgers	.32	.25	
Mean: Domestics	.71	.06	
Mean: Visitors	.03	.08	
Mean: Household size	5.17 ($\pm$ .60)	4.76 ($\pm$ .14)	
(c) *Bingham*			
Number of cases	172	755	99
Mean: Household heads	1.00	1.00	1.00
Mean: Wives per family	.58 ($\pm$ .07)	.77 ($\pm$ .03)	.56 ($\pm$ .09)
Mean: Children per family	1.69 ($\pm$ .31)	2.13 ($\pm$ .15)	1.82 ($\pm$ .43)
Mean: Family size	3.27 ($\pm$ .35)	3.90 ($\pm$ .16)	3.38 ($\pm$ .49)
Mean: Relatives	.50	.35	.68
Mean: Lodgers	1.08	.18	1.46
Mean: Domestics	.97	.02	1.02
Mean: Visitors	.16	.05	.12
Mean: Household size	5.98 ($\pm$ .23)	4.51 ($\pm$ .14)	6.66 ($\pm$ .72)

Note: Unclassifiable households have been omitted.

Having thus set out these figures, we can now progress in the next section to an examination of the family unit.

III

For our purposes, the family unit may be defined simply as the household head and, if applicable, his wife, children and step children, provided that they were in residence with him on the night of the census. At its smallest, the family need only consist of a single person. Tables 1 and 2 show that the mean family sizes differed both between districts and classes. These differences were principally governed by variations in the sizes of sibling groups (i.e. the number of children living at home), and it is this part of the family that we shall study first.

Tables 1 and 2 can be usefully supplemented with Table 3 which shows the percentage of families, by district and class, with one or more, and four or more, children.

Three major points emerge from these tables:
i.   Radford had the largest sibling groups and Nottingham the smallest.
ii. The upper classes tended to have smaller sibling groups than the working classes.

Table 3: *Distribution of Children, 1851*

	Whole District	Upper Classes	Working Classes
(a) *Nottingham*			
% households with one or more children	67.6 ($\pm$ 2.6)	61.3 ($\pm$ 7.1)	68.5 ($\pm$ 2.8)
% households with four or more children	18.4 ($\pm$ 2.1)	17.1 ($\pm$ 5.5)	18.4 ($\pm$ 2.3)
(b) *Radford*			
% households with one or more children	75.8 ($\pm$ 2.5)	69.3 ($\pm$ 10.4)	76.3 ($\pm$ 2.7)
% households with four or more children	26.0 ($\pm$ 2.6)	18.7 ($\pm$ 8.9)	26.8 ($\pm$ 2.8)
(c) *Bingham*			
% households with one or more children	68.6 ($\pm$ 3.1)	60.5 ($\pm$ 7.3)	71.8 ($\pm$ 3.5)
% households with four or more children	24.5 ($\pm$ 2.9)	18.0 ($\pm$ 3.4)	26.8 ($\pm$ 3.4)

iii. Amongst the working classes, Radford had the largest sibling groups and Nottingham the smallest.[1]

In explaining these differences, we shall have to examine differing marital patterns, child mortality rates, fertility rates and migratory habits of the three districts.

1. *Differing marital patterns.* According to Table 1, Radford had the highest ratio of married heads. This was because the district was an overspill area attracting mainly working class married persons who were unable, because of the shortage of houses in Nottingham, to rent accommodation there. Thus, the working classes in Radford had a higher ratio of married heads than its upper classes because factors existed to accentuate the ratio of married working class heads. In contrast, the working classes of Bingham had a higher

[1] These three general findings are based upon a more detailed analysis of Tables 1, 2 and 3, i.e.:

i. Nottingham had a smaller mean sized sibling group than Radford; Radford had a larger group than Bingham (see Table 1); Bingham had a larger proportion of families with four or more children than Nottingham (see Table 3).

ii. Differences in the mean size of sibling groups of the two classes in each district are apparent only (see Table 2), i.e. their ranges of error overlap. However, the upper classes of Bingham had a lower proportion of their families with one or more children than the families of the working classes there (Table 3 (c)).

iii. Working classes of Nottingham had a smaller mean sized sibling group than the working classes of Radford; Bingham's working classes had a smaller mean sized sibling group than the working classes of Nottingham (Table 2); differences between the working classes of Bingham and Radford are apparent only.

ratio of married working class heads than its upper classes because factors existed to depress the upper class ratio. Many of the farmers (who accounted for some 57.6% of upper class household heads) chose to remain bachelors.[1] Why this was so is, as yet, unknown.[2] It did, however, give the Bingham upper classes a lower ratio of married heads than those of a similar social standing in the other two districts. In Nottingham the ratio of married heads was similar amongst both social categories, as was the ratio of widows. It is possible that the working classes of Nottingham had a higher proportion of widows as household heads than the working classes of the other two districts.[3] If this were so, two reasons can be advanced in explanation. Firstly, the relatively high wages paid to women workers in the town meant that widows could afford to be householders even after the deaths of their husbands.[4] Secondly, the large proportion of unmarried women in the town meant that a large proportion of the widows were unable to remarry.

The relationship between marital status and the size of sibling groups can be assessed from the figures in Table 4 which show the mean number of children of married heads only. Radford and especially its working classes, even with these modifications, still had larger sibling groups than Nottingham and its working classes. On the other hand, differences between Bingham and Radford (as shown in Tables 1 and 2) all but disappear. Thus, although many differences in the sizes of sibling groups were simply a reflection of differences in marital structure, this was not so in every case.

Table 4: *Mean Number of Children of Married Heads, 1851*

	Whole district	Upper classes	Working classes
Nottingham	2.02 ($\pm$ .14)	1.90 ($\pm$ .35)	2.05 ($\pm$ .14)
Radford	2.46 ($\pm$ .10)	2.41 ($\pm$ .62)	2.47 ($\pm$ .15)
Bingham	2.29 ($\pm$ .11)	2.22 ($\pm$ .43)	2.31 ($\pm$ .17)

[1] 21.2 ($\pm$ 8.0)% of farmer heads were bachelors compared with 15.1 ($\pm$ 5.3)% of the upper classes of Bingham as a whole.

[2] In Ireland in the nineteenth century it has been shown that on the whole a farmer would marry upon inheriting his farm (K. H. Connell, "Peasant Marriage in Ireland: Its Structure and Development Since the Famine", in: Econ. Hist. Rev., XIV (1962)). This clearly did not happen in Nottinghamshire.

[3] % Widows who were Household Heads:

	Nottingham	Radford	Bingham
Upper classes	11.0	8.0	7.0
Working classes	11.7	7.5	5.7

[4] In times of prosperity a woman could earn 9/-d and more per week in the lace industry; rents for a small house could be as low as a shilling a week.

2. *Differences in child death rates.* Table 5 measures the differences in the child and infant mortality rates of the three districts between 1849 and 1853. Nottingham, because of its appalling sanitary conditions and overcrowded housing, had the highest mortality rates amongst these age groups, whilst Bingham, with its more favourable environment, had the lowest rates. In Nottingham those wards which had the highest proportion of working class inhabitants also had the highest death rates.[1] This indicates that the upper class children were not subject to the same risk of mortality as the children of the working classes. This was also undoubtedly true in the other two districts although no supporting local evidence exists for them.

Table 5: *Mortality, 1849-'53*

	Ave. annual deaths below one year per 1,000 births	Ave. annual deaths below five years per 1,000 children under five
Nottingham	228.6	108.4
Radford	202.5	86.6
Bingham	148.4	51.0
England and Wales	155.4	67.9

3. *Differences in fertility.* With the data available we can only estimate the actual fertility of women of child bearing age in two ways. One is to express the number of legitimate children per 1,000 married women aged under 45 (line A, Table 6).[2] The other is to calculate (per 1,000) the number of children aged under five living in families in which the mother was aged under 45 (line B, Table 6). The weakness of the latter method is that it takes no account of infant and child

[1] Infant Death Rates, 1839-'43 (excluding those in Workhouse and Hospital):

	St Mary	St Ann	Byron	Sherwood
% upper class heads.	6.0	7.3	9.0	20.1
Infant deaths per 1,000 births	213	239	244	193
	Exchange	Castle	Park	
% upper class heads.	18.3	23.6	31.9	
Infant deaths per 1,000 births	134	193	175	

[2] The ages of wives are not given for registration districts in the printed volumes of the 1851 census. However, the samples from the enumerators' books enable the percentage of wives under 45 in the sample to be calculated. This percentage applied to the known number of all married women in each community enables the number of wives aged under 45 to be estimated.

mortality rates.[1] Even so, both sets of figures indicate that Nottingham women were less fertile than those of the other two districts.

Table 6: *Fertility, 1849-'53*

	Nottingham	Radford	Bingham
A. Legitimate births per 1,000 wives aged under 45, 1849-'53*	264.3	291.8	307.0
B. Children under five per 1,000 wives aged under 45, 1851.	751 ($\pm$ 78)	989 ($\pm$ 75)	1,026 ($\pm$ 94)

* N.B. with ranges of error:
Nottingham from 252.4 to 277.4;
Radford from 278.1 to 306.9;
Bingham from 287.8 to 329.0.

By breaking down line B of the table into social categories (as in Table 7), it is apparent that amongst both the upper and working classes of each district, Nottingham had the lowest fertility. It is also more than possible that the upper classes in the town had a lower fertility than the working classes.[2]

Table 7: *Fertility by Social Category, 1851*

	Number of children aged under five per 1,000 wives aged under 45.	
	Upper classes	Working classes
Nottingham	645 ($\pm$ 196)	765 ($\pm$ 69)
Radford	*	981 ($\pm$ 62)
Bingham	1,085 ($\pm$ 170)	1,023 ($\pm$ 67)

* Sample too small to be meaningful.

Although we have no local literary evidence, there are indications that during this period the urban bourgeoisie generally, as opposed to their rural counterparts, were limiting the size of their families.[3] But so too were the working classes of Nottingham. Abortionists were practising in the town and other methods of working class birth

[1] i.e. a high death rate amongst the under five year olds in a community or class would tend to lower estimates of fertility based on this method, and vice versa.
[2] By taking into account inter class and district child mortality (see Table 5), these views would be strengthened.
[3] See D. E. C. Eversley, Social Theories of Fertility and the Malthusian Debate (1959), p. 43.

control were coyly hinted at.[1] There is no suggestion of this amongst the rural, or indeed the Radford, working classes. There are also indications that working class women of Nottingham had a lower fecundity than their rural sisters. Part of this may have been due to their delayed and irregular menstrual cycles caused by long hours spent, especially in childhood, crouched in the seaming workshops.[2] Even so, the figures in Table 7 would indicate that upper class wives bore less children than those of the working classes.

4. *Differing migratory patterns*. By examining the age structure of those children remaining at home, it is possible to gauge the ages at which other children left. Thus, one can infer from Table 8 that because Bingham had a lower proportion of children aged 13 and over living at home than Nottingham or Radford, Bingham's children left at an earlier age. An analysis by social category would indicate that it was only the working class children of the rural district who left home at an early age. In other classes and districts most of the children probably lived with their parents until marriage. Literary evidence indicates that the children of the rural working classes tended, from the age of 13 onwards, either to go and live in the farming households as farm servants or become domestic servants in the houses of the local gentry;[3] others moved into nearby towns as domestic servants or took up industrial work.

Table 8: *Age Structures of Sibling Groups, 1851*

% children aged 13 and over living at home

	Nm.	Rad.	Bing.
Whole district	42.0 (± 2.0)	40.3 (± 2.5)	30.3 (± 2.5)
Upper classes	40.8 (± 5.5)	49.9 (± 8.1)	40.2 (± 5.6)
Working classes	41.8 (± 2.2)	38.6 (± 1.9)	27.4 (± 2.4)

We have amassed a body of information on factors likely to have a bearing on the mean numbers of children per family. How far is it now possible to explain the reasons behind variations in the mean family sizes noted at the beginning of this section, and how far is it possible to relate these differences to variations in the economic and social structures of the three districts?

[1] Evidence of the Nottingham Coroner in "Ev. to R. C. Children's Employment, 2nd Report", in: Parl. Papers, LXXX, 1864, p. 242. The Nottingham Coroner believed that women did not want children because this interfered with their earning capacity. This attitude may have reflected their poverty.

[2] "Child. Emp.", 1843, Ev. No 175. The working conditions of women in the town are described in I. Pinchbeck, Women Workers and the Industrial Revolution, 1750-1850 (1930), p. 236.

[3] Howitt, op. cit., pp. 156f.

It is clear that Radford had the largest family size because of the large sibling groups of its working classes. This, in turn, was related to the large proportion of married working class couples. This was a direct result of the "overspill" nature of the community. Even so, the lower infant mortality (caused by the relatively low density of its housing) and its higher fertility were also responsible for differences in family size between Nottingham and Radford. By allowing for differences in the proportion of married heads, sizes of the working class sibling groups of Radford and Bingham were similar. But these findings disguise some fundamental points. Because Bingham was an agricultural district, it was healthier than Radford and consequently infant mortality rates were lower. On this basis one would have expected Bingham families to have had the largest number of children. This was not so because of the younger age at which the rural working class children left home.

We also suggested, admittedly tentatively, that the upper class families had smaller sibling groups than those of the working classes. If this were so, in the cases of Bingham and Radford it was due to the lower proportion of married upper class household heads. Thus, in Bingham, the sizes of sibling groups of the married heads of both social categories were similar (see Table 4). This is surprising when we remember the earlier age at which the working class children left home, and we confess ourselves unable to explain it, except in terms of upper class sons going to universities or as apprentices to other businessmen. On the evidence that we have used there is no suggestion (see Table 7) that the upper classes in Bingham had a lower fertility and it is most improbable that they had higher infant mortality rates. We do not come across such difficulties when examining the sizes of sibling groups on an inter-class basis in Nottingham. It is more than probable that the suspected lower fertility of the upper classes in the town checked the numbers of their children even more effectively than the high infant mortality rates restricted the size of the sibling groups of the working classes. To this extent we have explained why the upper classes of the town may well have had less children living with them than the working classes.

IV

This section will deal with those members of the household who were not included in the immediate family. The first are those persons related to the household head either by blood or marriage, but who were neither wife, child or step-child. Table 9 shows the percentage of households which had these relatives living with them. We can see that of the three districts, the Bingham households had the highest pro-

portion with at least one such person. On analysis, it transpires that this was because the farming households were more likely to have relatives living with them than were the households of other social classes there, or, for that matter, any of the classes of either Radford or Nottingham. Perhaps the economic basis of the the farm favoured the extended family. It is indeed curious that farmers should distain marriage and yet be prepared to support relatives. Possibly a single causal relationship explains both these phenomena, but what this might have been, we can at the present only guess. Perhaps many of the farmers, if they were to retain their social standing, could not afford to marry, especially if they were obliged to support their kinsfolk.

Table 9: *Percentage of Households with at least One Relative, 1851*

	Nottm.	Rad.	Bing.
All households	17.3 ($\pm$ 2.1)	15.1 ($\pm$ 2.1)	23.1 ($\pm$ 2.8)
Upper classes	17.1 ($\pm$ 5.5)	26.6 ($\pm$ 9.8)	32.0 ($\pm$ 7.0)
Working classes	17.2 ($\pm$ 2.3)	13.9 ($\pm$ 2.2)	20.7 ($\pm$ 3.0)
Farmers	—	—	41.4 ($\pm$ 9.7)

The lodgers were another important component of the household structure, although for this study the term 'lodger' has been defined generously to include not only persons simply paying for accommodation, but also apprentices and journeymen living with their masters. On this basis, according to Table 10, Nottingham probably had the largest proportion of households with at least one lodger and Radford the smallest. Of the upper class households, Bingham had the highest proportion with at least one lodger. This was because most of the farmers had labourers living in with them, who, as we have suggested, were the children of local farm labourers. This practise of farmers bringing their labourers into the household was one that was dying out in the south of England by the mid nineteenth century[1] but the Bingham findings would indicate that it was still prevalent in the east midlands. Howarth, writing of the midland farmer of the period saw the labourers as being fully assimilated into the farmer's family which formed a complete economic and social unit.[2] The lodgers of the farmers tended to be young and male. As the working classes in Bingham rarely took in lodgers, the farming lodger therefore became typical.[3]

[1] J. D. Chambers and G. Mingay, The Agricultural Revolution, 1750-1880 (1966), pp. 192f.
[2] Op. cit., p. 155.
[3] In Bingham 69.8 ($\pm$ 5.9) % were aged under 25 and 83.4 ($\pm$ 4.2)% were male.

Table 10: *Percentage of Households with at least One Lodger, 1851*

	Nottm.	Rad.	Bing.
All households	21.8 ($\pm$ 2.0)	13.7 ($\pm$ 2.1)	17.4 ($\pm$ 2.5)
Upper classes	28.7 ($\pm$ 6.6)	16.0 ($\pm$ 8.2)	48.8 ($\pm$ 8.6)
Working classes	20.8 ($\pm$ 2.5)	13.5 ($\pm$ 3.1)	9.2 ($\pm$ 2.2)
Farmers	—	—	62.6 ($\pm$ 9.5)
Farm labourers	—	—	7.1 ($\pm$ 2.7)

Unlike Bingham, a large proportion of working class households in Nottingham took in lodgers. Many of these were spinsters drawn into the town because of the employment opportunities in the lace industry. This resulted in nearly two-thirds of the Nottingham lodgers being female.[1] They also tended to be older than their Bingham counterparts. Even so, 15% of the lodgers in Nottingham were either apprentices or journeymen living with their upper class masters. This must have been the remnant of an older economic tradition harking back to the time when Nottingham was principally a county town.

Of the three districts, Bingham households had the largest mean number of resident domestic servants. As they were predominantly employed in upper class households we can restrict our enquiry to them. Table 11 shows that the upper classes of all three districts had a similar proportion of households with at least one servant. However, the Bingham households had a higher proportion with two or more servants[2] than did those of Nottingham and probably Radford.[2] This can mainly be related to the servant shortage in the town and surrounding districts. The alternative employment offered by the lace and hosiery industries gave young girls both higher wages and greater freedom than could be obtained in domestic service.[3] We should also remember, however, that a clear distinction cannot be made in a rural area (despite the attempts of the enumerators) between a domestic servant and a farm servant. The larger farmers might have employed a girl to do domestic chores, *and* milk the cows, whilst still calling her a domestic servant.

Table 11: *Percentage of Upper Class Households with Domestic Servants, 1851*

	Nottm.	Rad.	Bing.
One or more	46.4 ($\pm$ 7.3)	37.3 ($\pm$ 10.9)	49.4 ($\pm$ 7.5)
Two or more	14.8 ($\pm$ 5.3)	14.6 ($\pm$ 8.0)	26.4 ($\pm$ 6.5)

[1] In Nottingham 56.4 ($\pm$ 5.8)% of the lodgers were aged over 24 and 57.4 ($\pm$ 4.2)% were female.

[2] Because the ranges of error overlap, to demonstrate a significant difference in this respect between Nottingham and Bingham, pooled tests are required, (for a description of these see R. G. D. Allen, Statistics for Economists (1949), pp. 172ff.)

[3] Nottingham Review, 3/10/1851.

The enumerators employed the classification "visitor", although the exact meaning of this term remains vague. It may have embraced those members of the household who could not be accommodated into the other categories. All three districts, in fact, had similar proportions of households with at least one visitor (see Table 12) although in Bingham and Nottingham the upper classes had proportionately more such households than the working classes. This may indicate that a visitor was simply a genteel lodger.

Table 12: *Percentage of Households with at least One Visitor, 1851*

	Nottm.	Rad.	Bing.
All households	6.0 ($\pm$ 1.3)	6.1 ($\pm$ 1.5)	5.6 ($\pm$ 1.5)
Upper classes	14.9 ($\pm$ 5.1)	1.3 ($\pm$ 7.1)	10.4 ($\pm$ 5.9)
Working classes	4.7 ($\pm$ 1.4)	6.2 ($\pm$ 1.7)	4.5 ($\pm$ 1.5)

By combining the various components of the households together (see Table 2), it is clear that in Nottingham, Bingham and probably Radford the upper classes had larger mean household sizes than the working classes. The smaller family size of the upper classes was more than compensated for by their more numerous servants, visitors, relatives and lodgers. On the other hand, a comparison of the three districts shows that Bingham had the largest mean household size mainly because its upper classes had more servants, lodgers and relatives than the upper classes in the other two districts. Amongst the working classes, Nottingham had the smallest household size. Its larger proportion of lodgers did not compensate for its smaller families.

V

The household is the basic social unit in western society, and if social and economic change is more than superficial it will have repercussions on the household. In this study we have been concerned with the quantitative effects of differences in social and economic environments on household structures. We have seen that an urban economy, such as Nottingham, needing female labour, gave working class women an incentive to limit their family sizes; deprived the upper classes of domestic servants; encouraged working class households to take in female lodgers; and enabled working class widows to support a home. An agricultural community like Bingham also gave its households a distinctive structure. The women were very fertile and infant mortality was low, but working class family sizes were kept in check because of the early age at which children left home either to live in farming

households, become resident domestic servants, or to seek industrial employment in nearby towns.

It is hoped that this study has shown some of the significance of examining household structure and that it has indicated the need for other similar comparative studies based on the census enumerators' books. Yet it is also important that this work should be linked with the study of pre-industrial censuses as well as contemporary studies of the household. Only then will it be possible to gauge the effect of industrialisation on the family and household.