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EDITORIAL

LPS is thirty years old!

In August 1967 the Cambridge Group for the History of Population and Social Structure, then just a youngster itself, organized a summer school, held at Madingley Hall, a short distance north of Cambridge. The aim of the meeting was simple: to bring together individuals and local groups who were engaged on parish register analysis and the study of populations in the past. It is from this meeting that the idea of publishing a magazine and newsletter (as LPS was originally titled) developed. To quote from the first issue of LPS, ‘In conversation it became plain that though many are well known to the members of the Cambridge Group and communicate freely with them, very few seem to be in touch with each other (as the week at Madingley proved) there is a desire to have some sort of contact which will enable common problems and new ideas to be discussed. This magazine and newsletter has been established to provide a link which will enable those working in their local communities to draw attention to their discoveries and difficulties, to keep them informed of other people’s work, and to provide a place where their enquires can be answered and where the techniques used in this field of research can be explained and examined’ (LPS, 1, p.3).

The first issue of the new magazine and newsletter was published a year after the Madingley meeting, in the autumn of 1968. Its editors were David Avery, Colin Barham, Christopher Charlton and Roger Schofield. To mark the foundation of LPS a garden party was held on 21 September in the Scholar’s Garden of Clare College, Cambridge. This event was appropriately hosted by Roger Schofield, who is the only one of the original “gang of four” to have served continuously on the editorial board to the present. Coincidentally, the Local Population Studies Society held its annual residential conference at Madingley Hall this summer (see News from LPSS, below) and all the conference delegates were invited to the party, together with all members of the LPS editorial board, past and present. It was a particular pleasure that Leslie Bradley was able to attend the party. Leslie has been a tremendous supporter of LPS even since its foundation. His invaluable Glossary for local population studies (1st ed., 1971) continues to sell well, and at age 95 he still serves as one of the journal’s proof-readers. The crowning moment of the occasion was when the three surviving members of the founding editorial board (sadly Colin Barham died a few years ago) cut a special 30th anniversary cake. This act was duly captured on camera and is reproduced below!

The party, however, was not without a moment of regret. The party’s host, Roger Schofield, took the occasion to announce his retirement from the editorial board. Roger has not only acted at Chairman for the past thirty years, but was instrumental in establishing the journal, being for many of the early years the sole Cambridge Group representative on the editorial board. His contribution to
LPS over the past thirty years has been immense - as editor, contributor, conference goer, Chairman, and host of numerous meetings. The journal and its readership owe him a huge "thank you" for everything that he has done. It is with great sadness that we report that this is the first ever issue of LPS that is published without Roger's name appearing on the list of editorial board members.

With Roger's departure, LPS would appear to be entering a new age. Certainly for the first time the journal's editorial board meetings will not benefit from the wisdom of one who was there right from the start. At present we are taking stock and beginning to think about the appropriate directions that the journal should take in the future. Currently we are exploring the relationships between the LPS and LPSS with the aim of bringing the two bodies closer together and forging greater integration between the journal and the LPSS Newsletter. Whatever the changes that lie ahead, one thing is clear: we most certainly would not wish to depart from the sentiments expressed in the first issue of LPS, 'Because we depend on a considerable extent on our readers to serve as our contributors we shall be extremely grateful for any research report, enquiry, problem, discovery or oddity (however small) that is sent to us' (p.4).

Cambridge Group aggregate analysis data

As announced in LPS 57 we have been intending to make the aggregative analysis data for the 404 parishes that informed Wrigley and Schofield's The population history of England, 1540-1871: a reconstruction available. The original announcement, made in LPS 34 was to publish this data in ten volumes of micrographically reproduced computer print-out. These were offered for sale (in 1984) for £19, but demand was too low at that time to allow for the publication of all ten volumes, from the resources available from a grant given by the Ernest Cook Trust for this purpose, so this project was abandoned. Seventeen years later
these data are again being offered to readers of LPS in a slightly different format. The aggregative parish register analysis data for all 404 parishes have been prepared in a machine-readable form for distribution on CD-ROM. Monthly aggregated totals of baptisms, marriages and deaths for each parish are formatted in both a fixed-column text format and within Microsoft Excel spreadsheet format. A further 404 text files contain 'parish characteristics'. Accompanying this single CD-ROM will be a users' guide to the data, prepared by Roger Schofield, which describes the data and suggests some of the ways in which they can be put to use by local historians. The CD and accompanying booklet will be available shortly. The booklet and accompanying disc will cost £6.50 including postage and packing. Orders can be placed now with the LPS General Office, Department of History, University of Essex, Colchester, CO4 3SQ.

**Historical migration patterns and processes**

The British Society for Population Studies is organizing a conference on historical migration patterns and processes. This one-day meeting will be held in the Senior Common Room at the Department of Geography, University of Liverpool, on Saturday 10 January 1998, starting at 9.15 am.

Speakers will include:

- John Herson  
  Liverpool John Moores University
- Mervyn Busteed  
  University of Manchester
- Colin Pooley  
  University of Lancaster
- Gerry Kearns  
  University of Cambridge
- Humphrey Southall  
  Queen Mary and Westfield College, London
- Mark Allen  
  University of Essex

The meeting will also include a discussion on the potential use of the 1881 Mormon Transcriptions and Indexes of the Census Enumerators' Books. In the near future, these will be available in CD-ROM format, and therefore it is timely to consider the kinds of analysis which can be done with them, and the questions which they might help to answer.

There is no registration fee, but those participating will be asked for a contribution of £5.00 towards tea/coffee in the morning, a buffet lunch, and tea and scones in the afternoon.

Further details of the programme may be obtained from:

Nicola Shelton, Department of Geography, University of Liverpool, PO Box 147, Liverpool. L69 3BX  
Fax: 0151 794 2866; e-mail njs@liverpool.ac.uk

or

Andrew Hinde, Department of Social Statistics, University of Southampton, Southampton, SO17 1BJ  
Fax: 01703 593846; e-mail prah@socsci.soton.ac.uk
It would be helpful if all those interested in attending would inform one of the above, as the number of participants is limited by the size of the venue.

Accommodation close to the venue for the nights of 9 and/or 10 January can be arranged at the following special rates:

- Single room £27, with shower £32, ensuite £37
- Double room £37, with shower £42, ensuite £42

All enquiries about accommodation should be directed to Nicola Shelton at the address above.

**The plague reconsidered**

*LPS* is reducing its remaining stock of one of its earliest supplements – *The plague reconsidered: a new look at its origins and effects in 16th and 17th Century England*. This volume, published in 1977 brings together eight articles on the plague for the non-specialist reader. Its contents are:

- Paul Slack
  - Introduction
- Leslie Bradley
  - Some medical aspects of the plague
- Jean-Noel Biraben
  - Current medical and epidemiological views on plague
- Christopher Morris
  - Plague in Britain
- Paul Slack
  - The local incidence of epidemic disease: the case of Bristol, 1540–1650
- Leslie Bradley
  - The most famous of all English plagues: a detailed analysis of the plague at Eyam, 1665–6
- Roger Schofield
  - An anatomy of an epidemic: Colyton, November 1645 to November 1646
- Leslie Bradley
  - The geographical spread of plague
- Derek Turner
  - Plague and the general reader: a review of non-specialist writing on the plague

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*The plague reconsidered* is available at the reduced price of £1.50 including postage and packing from the LPS General Office, Department of History, University of Essex, Colchester, CO4 3SQ.

**Bibliography of work based on the census enumerators’ books**

Many readers of *LPS* will be familiar with the publication D. R. Mills and C. Pearce, *People and places in the Victorian census. A review and bibliography of publications based substantially in the manuscript census enumerators’ books, 1841–1911*, Institute of British Geographers, Historical Geography Research Series, No 23, (Cheltenham, 1989). Given the amount of work that has been published using the census enumerators’ books (CEBs) since the research for this volume was originally undertaken, *LPS* has decided to update this invaluable publication. It is intended to reproduce all of the information in the 1989 edition and to supplement this with details of publications not included in the volume.
In addition to extending the content of the volume, it is also our intention to publish the new edition in both conventional 'paper' format as well as electronically. Producing an electronic version of the bibliography will enable readers to conduct searches of the text not easily possible via normal indexes. For example, the 1989 edition is indexed by various geographical and subject categories, such as occupation, migration, family and household structure. The electronic version will allow the researcher to search across these categories as well as within them.

To help us to ensure that the new version of the bibliography is as complete as possible, we invite readers to send details of any publications based on the CEBs which were not included in the previous edition. If you do not have access to a copy of the previous version and are therefore unable to check if the publication has already been included in the bibliography, please send us details anyway. Ideally, you should send us a copy of the CEB-based publication in order that we can check the bibliographic details and categorise the contents of the piece accordingly. If you are unable to send us a copy, please ensure that you provide us with full bibliographic details. Further details of this project and any contributions should be sent to the LPS General Office, Department of History, University of Essex, Colchester, CO4 3SQ. It is our intention to publish the revised bibliography in late 1998 - so do not delay!

October, 1997

Tom Arkell
Martin Eccleston
Nigel Goose
Terry Gwynne
Andrew Hinde
Kevin Schürer
Geoffrey Stevenson
Matthew Woolland
NEWS FROM THE CAMBRIDGE GROUP FOR THE HISTORY OF POPULATION AND SOCIAL STRUCTURE

As predicted in the Spring issue of LPS the Cambridge Group’s new book, *English population history from family reconstitution 1580–1837* was published in June 1997 by Cambridge University Press at a price of £50 for 657 pages. It will be the focus of a critical review by a panel of historians and historical demographers in a specially convened session of the Social Science History Association in Washington DC in October 1997. At that same annual meeting Roger Schofield, one of the authors of the book, will assume the presidency of the Social Science History Association – a fitting tribute to his and the Cambridge Group’s work within the internationally expanding field of historical social science.

While the publication of the above work represents the end of another stage in the Cambridge Group’s research on the historical demography of England, it certainly does not mean the end of the ‘family reconstitution era’ in this country. So many important issues have emerged from the results of the book which will form a launching pad for important investigations using the results of nominative linkage in the future. Some of the implications of these new findings concerning the course of marital fertility and the incidence of still births in the eighteenth century were mentioned in this section of the previous issue of this journal.

The striking similarity between the mortality estimates derived from back projection and family reconstitution suggests a reasonably firm benchmark for early modern England. We intend to exploit this further through a number of contrasts with other data sets. For the medieval period we have samples collected by Professor Larry Poos from Inquisitiones Post Mortem between 1300 and 1400 which will allow us to estimate the life-expectancy of an elite group of adult males. Dr Tom Hollingsworth has allowed us to use the original material behind his classic peerage study so that we can examine the effect of wealth and social status on mortality. A mass biography of Scottish ministers is the source for research on another group of adult males in a different environment. In addition to direct measures of mortality, we are also examining women’s reproductive behaviour as an indicator of health. Initial results suggest that there is no adult survivorship advantage over the “Parish” population for élite-group women before 1800, and that there may be a disadvantage for élite men. After 1800 the adult élites forge ahead in their survivorship probabilities, but at no greater rate than the overall population resident within the ‘healthier districts’ of the country.

The existence of so many family reconstitutions in a machine-readable form means that we are in possession of a readily accessible data set that can be further enriched through linkage with other nominative sources. Further work
on certain of the reconstituted parishes now proceeds at the Cambridge group in connection with a recently initiated project concerned with the relationship between demographic patterns and welfare provision, giving due attention to both cause and effect in the relationship between the two phenomena. For the next two years Dr. Richard Adair, former graduate student of the Cambridge Group and author of the recently published, *Courtship, marriage and illegitimacy in early modern England* (Manchester, 1996) while holding a Leverhulme Trust Special Research Fellowship, will be working on certain of these materials with a view to identifying the familial and demographic attributes of poor relief recipients in five parishes that have been fully or partially reconstituted for the period c.1640 to 1834. This project engages in nominative linkage between poor law records and parish registers to identify the attributes of paupers with particular reference to their age, sex and marital status. Research on five different communities will make a substantial contribution to major areas of debate in English economic and demographic history, relating to the care of the elderly by kin and collectivity, the gender basis of poverty and the relative shares of rate-based welfare funding allocated to men, women and children during periods of rapidly growing poor relief expenditure between c.1560 and 1720 and 1790 and 1820. Similar work by Samantha Williams towards her Cambridge PhD. linking the poor law records of Campton and Shefford in Bedfordshire with the family reconstitution of these parishes was reported in an earlier issue of *LPS* and is now well advanced. Samantha Williams has to date attached over 50,000 items of poor law expenditure in the accounts to individuals who appear in the family reconstitution between 1700 and 1834 and important findings relating to the relative shares of pensions paid to males and females and the relationship between marriage age changes and child allowances have been forthcoming. A recent thesis completed by Susannah Ottaway using similar techniques with one Cambridge Group reconstitution for the renowned parish of Terling (Essex) and similar materials for Puddletown (Dorset) forms the basis of a highly innovative study that will prove of great interests to readers of this journal. Dr Ottaway’s thesis, much of the research for which was done in the Cambridge Group, was awarded at Brown University in the United States in 1997 and is entitled “‘The Decline of Life’: Aspects of Aging in Eighteenth-Century England’. This is the most detailed study so far completed of provision for the elderly in the old poor law era and represents a highly innovative study which we hope to see in print in the very near future.
NEWS FROM THE LOCAL POPULATION STUDIES SOCIETY

Annual General Meeting

This was held at Madingley Hall, on the outskirts of Cambridge, on Saturday 21st September 1997, as part of our Residential Conference. The state of the Society was healthy in terms of both membership and finances, but it was pointed out that we could not sit back and take things for granted. Both membership and finance were closely related to the success of the OU’s DA 301 course, and this would not run for ever!

Committee changes

While the committee already had one vacancy, following the resignation of Mary Hodges during the year, another one arose when Michael Drake, who had already said that he wished to stand down as Chairman, announced that he was resigning from the committee. He had been associated with the Society for many years and was, as we are all aware, the key figure in the success of D301 and its successor DA301. A well-earned vote of thanks was agreed unanimously.

David Hay, who had joined the committee during the year, was “persuaded” to take on the Chairman’s appointment. Roger Bellingham was confirmed in his appointment as Treasurer and all other committee appointments remain unchanged.

There are now two vacancies, no one having volunteered before the general meeting. The committee has the power to co-opt and will be looking round for suitable candidates, both from inside the Society and from outside. However, volunteers would still be very welcome.

Links with LPS

Michael Drake and David Cooke briefed members on the steps that were being taken toward closer co-operation between the Society and LPS itself. These were already eliminating overlaps and duplication of effort, and would produce longer-term economies.

Looking ahead, further measures were felt necessary if we were to be ready for the loss of the existing OU link (and the income that this generates). More discussions are being held and, if fruitful, the committee plans to put forward formal proposals for decisions to be taken at the 1998 general meeting. This decision will be taken by those “present and voting”. Views expressed by other members will be communicated to those at the meeting, but only those present will be able to vote.
Conferences

The spring day conference “Future generations: historical aspects of childhood”, which was held at Rewley House on 5th April, had been a joint venture between the Society and the University of Oxford Department of Continuing Education. It was over-subscribed, so that there was a full house and a waiting list.

The London day school, held at the Institute of Historical Research on 26th April, was another joint venture, between the Society and the DA 301 course team. While not as well attended as the previous year, there were still 63 attending.

The Madingley residential conference was well attended, with 33 present. The theme was “From spinners to drapers – A study of textile workers and their communities”. There were excellent speakers, the food was good, the accommodation was outstanding, and the final “cream” was the invitation to the LPS Garden Party at Clare College on the Sunday afternoon!

Forthcoming conferences

A joint LPSS/Yorkshire Archaeological Society day conference is being held in Leeds on 15th November, with the theme “Yorkshire people on the move”. There are only 60 vacancies and numbers were already up to 50 by Madingley.

The 1998 London day conference will be held at the IHR on 25th April, while the annual residential conference is to be held at Staffordshire University, Stoke-on-Trent in July (probably 10th – 12th). Another day conference is planned for Essex University in September/October.
OUT-MIGRATION 1821-1851 FROM A WEALDEN PARISH: CHIDDINGLY

June A Sheppard

June Sheppard retired from the Department of Geography at Queen Mary and Westfield College in 1991. She is the author of two earlier articles on the East Sussex parish of Chiddingly in Agricultural History Review and Sussex Archeological Collections.

Recent years have seen significant advances in our knowledge and understanding of past migration patterns in Britain. The broad picture that has emerged is of continuous local ‘circular’ population movement for purposes of employment and marriage, within a radius of about 16 km. Longer-distance migration varied over time in both extent and character. Many people were on the move during the Tudor and Stuart period of rapid population growth, with the unemployed often tramping long distances to any places that offered opportunities, whether these were towns, areas of expanding industries or waste land that could be reclaimed. There then followed a century or so from c.1650 when the national population remained virtually static; there was less migration, the distances covered were shorter, and the former somewhat aimless wanderings of the poor gave way to a townward movement dominated by skilled craft workers. The late eighteenth-century resurgence in population growth saw a fresh impetus to migration, mainly to local towns and industrial districts, but in circumstances that were very different from those that prevailed in Tudor/Stuart times. By this period, the administration of the Poor Law ensured that the basic needs of the destitute were provided in their parishes of settlement, thereby reducing the need to migrate. In spite of this, a significant rural-urban migration had developed by the mid-nineteenth century.¹

Within this broad picture, much detail still remains unclear and many questions unanswered. Even where nineteenth-century census enumerators’ books have been used for detailed local studies, the emphasis (using birth-place data) has been on in- rather than out-migration.² As Pooley and Doherty explain in their study of Welsh migration to English urban areas, the collection and analysis of evidence needed to identify and follow out-migrants is an extremely complex and time-consuming exercise.³ For the years prior to the first census enumerators’ books (1841), there are still relatively few local studies of migration, and Pooley and D’Cruze have described the period between c.1750 and 1850 as the least well understood in terms of migration activity.⁴ Even more significant, we rarely have evidence concerning the processes and circumstances of migration; in other words, we do not know who moved, when and why, or how they selected their destinations. Diaries and family histories may sometimes provide insights, but the few persons for whom such evidence is available may not be representative of the larger movement.⁵

13
The parish study that follows aims to fill a few of the gaps. It is an exercise in nominal record linkage, using data for the period 1821–1851, and distinguishing between local ‘circulatory’ and distant migration. Because female migrants marry and require lengthy research in marriage registers to identify and locate, the emphasis here is on male migrants; and at this stage of the research, no attempt has been made to follow distant migrants to their assumed reception areas. In spite of these limitations, some interesting pointers to the scale and character of the migratory patterns of the period emerge.

Sources

The parish of Chiddingly lies in the Weald of East Sussex. The principal sources used were a detailed listing prepared in connection with the 1821 census, together with the 1841 and 1851 census enumerators’ books. Although the 1821 and 1841 listings are slightly less informative than that for 1851, there are few problems involved in linking the records of those individuals who remained in the parish throughout the 30-year period. Individuals living in Chiddingly in 1821 but not 1841, or there in 1841 but not in 1851 had either died or moved away. The parish burial register was used to identify those interred locally; the impression is that the vast majority of parish deaths are thus accounted for. The remainder, who must have moved away, can be classified as either local or distant migrants. Chiddingly is fairly centrally located in East Sussex (Figure 1), hence its local migration field was wholly contained within the county; distant migrants could have travelled either to the far eastern or far western parts of the county, or to places beyond the county boundary. The identification of Chiddingly-born persons living elsewhere in East Sussex in 1851 has been greatly aided by the publication over the past decade of a series of booklets containing computer-based tabulations of the census enumerators’ records, each booklet covering one, two or three Registration Districts. Chiddingly-born persons can be quickly identified in the lists, and since the names of persons are listed alphabetically in each booklet, even those Chiddingly residents of 1821 or 1841 born elsewhere who had moved to other parishes in the county can be located. Unfortunately no such booklets covering Brighton and its vicinity have yet appeared.

Since children often left home from the age of about fifteen (and in some poor families even earlier), it was necessary to supplement the census details by adding certain names from the parish baptismal register. This too appears to have been surprisingly comprehensive, as it included children born to known dissenter parents, apart from the dozen or so families who were adherents of Heathfield Independent Chapel, which had a preaching station in the north-eastern part of Chiddingly parish. The baptismal record made it possible to identify not only children who had died young, but also a number born in the 1820s who had left home before the 1841 census was taken.
Social and demographic context

Early nineteenth-century Chiddingly supported a predominantly agricultural community living in hamlets and scattered farms; apart from a few men engaged in brick-making in the south of the parish, those not employed on the land worked in service occupations. Farms were either medium-sized (40-120 ha. /100-299 acres) or small (8-39 ha. /20-99 acres), and there were numerous tiny part-time holdings. The medium-sized farms each employed several 'constant' men housed in tied cottages, and there were still some living-in farm servants, but much of the agricultural employment was temporary or seasonal. Fat cattle, dairy products, wheat, hops and poultry were marketed, but much produce was consumed locally. Agriculture had prospered during the early years of the nineteenth century, but the depression that followed the defeat of Napoleon was severe in the district, a result of unfavourable soils which limited the scope for agricultural improvements, at least until the 1840s. Traditional farming practices remained prevalent and farm incomes modest.\textsuperscript{12}

It is not surprising therefore to find that there were no wealthy families living in Chiddingly, though one or two of the larger farmers would have been comfortably off by local standards. Families with modest but adequate means
Table 1  Birthplaces of household heads and their wives, 1851

<table>
<thead>
<tr>
<th>Birthplace</th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n.</td>
<td>%</td>
<td>n.</td>
<td>%</td>
</tr>
<tr>
<td>Chiddingly</td>
<td>101</td>
<td>57</td>
<td>48</td>
<td>26</td>
</tr>
<tr>
<td>Within 8 km</td>
<td>55</td>
<td>31</td>
<td>101</td>
<td>54</td>
</tr>
<tr>
<td>Elsewhere in E. Sussex</td>
<td>17</td>
<td>10</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>Outside E. Sussex</td>
<td>5</td>
<td>3</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Totals</td>
<td>178</td>
<td>101</td>
<td>187</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: Females include a few women classed as housekeeper.

included those of most other farmers, together with traders and master craftsmen. Below them in the social pyramid came labourers with smallholdings who often had a range of skills that enabled them to earn an adequate supplementary income, together with the permanent farm employees living in tied cottages. Finally, there were the landless poor who either relied on casual work (mainly agricultural) or were elderly, infirm or widowed. The social pyramid was broad-based and shallow in height, typical of the ‘open’ communities of the Weald.13

The population of Chiddingly parish grew from 673 in 1801 to 1,085 in 1851, before falling during the second half of the nineteenth century to 824 in 1901. Growth resulted from a combination of large average family size with an infant mortality rate that was low by national standards.14 The 1851 birthplace details for household heads and their wives reveal the usual extensive population import from neighbouring parishes, but relatively few residents had been born more than 8km away (Table 1).

A turnpike road dating from 1766 crossed the southern part of the parish, linking Hailsham (6 km south-east of Chiddingly, 1851 population 1,825) with the county town of Lewes (13 km to the west, 1851 population 9,097); a branch went to Uckfield and thence to London. These were the main routeways that linked Chiddingly to the outside world during the period under consideration.15 Access to the turnpike from the north of the parish was by a series of lanes which no doubt were almost impassable during wet weather.16 The poorer members of the community, who made most of their journeys on foot, probably rarely travelled more than a few miles from home, except perhaps when seeking temporary employment.17 Farmers, traders and craftsmen who owned horses and horse-drawn vehicles were more mobile and no doubt visited Lewes regularly. This town was the focus for the trade of a large part of mid-Sussex, and those who visited it regularly were brought into contact with others from throughout this area.18 Through such contacts they would have acquired a good knowledge of conditions elsewhere that could guide decisions about migration.

A comparison of 1821 and 1851 census details shows that during the interval there had been an increase of 35 households in Chiddingly and in 31 of these the head was a labourer (Table 2). A possible explanation for this growth that needs
Table 2 Numbers of male heads of household by occupation

<table>
<thead>
<tr>
<th></th>
<th>Farmer</th>
<th>Labourer</th>
<th>Craft / trade</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1821</td>
<td>27</td>
<td>65</td>
<td>44</td>
<td>4</td>
<td>140</td>
</tr>
<tr>
<td>1851</td>
<td>27</td>
<td>96</td>
<td>45</td>
<td>7</td>
<td>175</td>
</tr>
<tr>
<td>Change</td>
<td>-</td>
<td>+31</td>
<td>+1</td>
<td>+3</td>
<td>+35</td>
</tr>
</tbody>
</table>

Table 3 Numbers of employees in agriculture in 1821 and 1851

<table>
<thead>
<tr>
<th></th>
<th>Heads</th>
<th>Sons at home</th>
<th>Lodgers</th>
<th>Farm servants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1821</td>
<td>65</td>
<td>22</td>
<td>19</td>
<td>32</td>
<td>138</td>
</tr>
<tr>
<td>1851</td>
<td>96</td>
<td>33</td>
<td>19</td>
<td>25</td>
<td>174</td>
</tr>
<tr>
<td>Change</td>
<td>+31</td>
<td>+11</td>
<td>-</td>
<td>-7</td>
<td>+36</td>
</tr>
</tbody>
</table>

Note: Figures for 1821 are approximate, as no occupations were indicated for most sons and lodgers; all sons of labourers and all lodgers were therefore assumed to work in agriculture unless otherwise stated.

Initial consideration is that there had been a substitution in the agricultural labour force of married men for living-in farm servants. However, Table 3 shows that this was not the case, since the decline in number of farm servants had been more than matched by an increase in the number of unmarried sons living with their parents or in lodgings and working in agriculture. Instead it is evident that there had been a real increase in married labourers seeking work, in line with the known problems of surplus population revealed by several studies of the contemporary poor-law administration. At least some of Chiddingly’s labourer heads of household were forced to rely on whatever casual work they could obtain, probably on local farms at harvest and other busy times, in local brickworks or nearby woodlands at certain times of the year, and by travelling to districts like the South Downs when there were seasonal demands for labour that did not coincide with those in the Weald. Winter unemployment and reliance on poor-law assistance nevertheless remained common.

Whilst the number of labourer heads of household increased between 1821 and 1851, the number of farmer and tradesmen/craftsmen heads remained stable (Table 2). A general increase during the first half of the nineteenth century in employment in traditional trades and handicrafts took place in the larger settlements like Uckfield and Hailsham rather than in more rural parishes like Chiddingly. The stable numbers of farmer and craftsmen heads suggest that at least some of their children must have moved away, while unemployment or underemployment among labourers must surely have made local prospects appear few and unattractive to their children. ‘Push’ factors were thus undoubtedly present, and the following sections will examine the out-migrational response.
Table 4  Chiddingly-born persons aged 15 and over living elsewhere in East Sussex, 1851

<table>
<thead>
<tr>
<th></th>
<th>Farmers</th>
<th>Male servants</th>
<th>Labourers</th>
<th>Craftsmen &amp; traders</th>
<th>Female servants</th>
<th>Total n.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Within 8km</td>
<td>33.3</td>
<td>50</td>
<td>51.9</td>
<td>31.2</td>
<td>31.3</td>
<td>171</td>
</tr>
<tr>
<td>8-16km</td>
<td>60.4</td>
<td>50</td>
<td>36.8</td>
<td>47.2</td>
<td>52.1</td>
<td>186</td>
</tr>
<tr>
<td>Over 16km</td>
<td>6.3</td>
<td>0</td>
<td>11.4</td>
<td>21.6</td>
<td>16.7</td>
<td>59</td>
</tr>
</tbody>
</table>

Chiddingly-born living elsewhere in East Sussex

The published tabulations of the 1851 census enumerators’ books have been used to locate Chiddingly-born persons who were at that date living elsewhere in East Sussex (apart from those in the Brighton area). All individuals aged 15 and over (plus a few who were younger but with a listed occupation) were included, giving a total of 416 persons. Their distribution provides some indication of out-migrational movement to places within the county. Analysis was by occupational groups, with dependants with no listed occupation included with the head of household. To classify migrational distances, three zones were distinguished (Figure 1): (A) parishes wholly or largely within 8 km of the boundaries of Chiddingly parish; (B) parishes wholly or largely between 8 and 16 km distant; and (C) parishes more than 16 km distant. The results are summarized in Table 4.

Of the total migrants included in the analysis, nearly 45 per cent were labourers and 30 per cent craftsmen or traders. Comparison with the proportions these formed of the household heads in Chiddingly itself in 1851 (55 per cent labourers and 26 per cent craftsmen or traders) confirms the greater propensity of the latter group to leave their home parish. Distances migrated are analysed by the percentages of each occupational group found in each of the three distance zones, bearing in mind that the two outer zones cover a larger area than the inner zone. More than half the labourer migrants were living in zone A and only 11.4 per cent in zone C, confirming their tendency to move only short distances. Farmers and male (mainly agricultural) servants were distributed more evenly through zones A and B but had rarely moved into zone C; closer study shows that few went to parishes on the South Downs, suggesting that farming migrants were seeking a familiar Wealden environment. Craftsmen and tradesmen were more evenly spread over the three zones, the high percentage in zone B reflecting the attraction of the county town of Lewes, where over 20 per cent of this occupational group’s migrants were to be found. Female servants were also concentrated in Lewes (29 per cent), but otherwise they were widely distributed. These patterns serve to confirm existing views about the varying migratory patterns of different occupational groups.23

Such an analysis leaves many questions unanswered. In most instances we do not know when and why these migrants left Chiddingly; only in the case of the young and unmarried can we assume that it was during the 1840s, to find
employment. We also do not know what proportion the East Sussex residents formed of all Chiddingly migrants; in the light of the evident attraction of Lewes, a larger scale movement to Brighton and Hove (where there was a 10-fold increase in population between 1801 and 1851) is likely, while others no doubt moved further west along the coast or to London. Until the 1851 birthplace data are fully computerised, the task of tracing such migrants remains impossibly tedious. An alternative method of approaching these questions is therefore explored in the next section.

Family context

Out-migration may occur either as family groups or as individuals, in the latter case usually in the form of young unmarried persons moving away from their family of upbringing.

Some Chiddingly families disappeared as entities during the second quarter of the nineteenth century, though individual members can often be traced. In most instances the disappearance was a feature of the normal life-cycle, when one or both parents died after all or most of the children had left home. Of greater interest for the current study were families with younger parents that had disappeared from Chiddingly by 1851; 68 were identified, of which 44 (65 per cent) were found to be resident elsewhere in East Sussex, mainly in zone A, and 16 (24 per cent) are known to have disintegrated as a result of the death or transportation of a parent. This leaves only six instances for which distant migration is a known or likely explanation; in three of these, families received financial assistance in the 1830s or 1840s to emigrate to North America or Australia. For the most part, therefore, family migration was a local affair, part of the regular pattern of population exchange among neighbouring parishes.

The out-migration of young people was examined by means of identifying the children born to certain couples living in Chiddingly during the second quarter of the nineteenth century. This was feasible only for long-staying couples, and even in the case of some of these there are doubts about the completeness of the list of offspring, for example when there is a wider than usual age gap between siblings. However, the details are believed to be reliably complete for 65 families, and at least largely complete for another 47. The children of these families who had died young were identified from the burial register and eliminated from further consideration. Some of the survivors aged 15 and over were living in Chiddingly in 1851, and others were living elsewhere in the county. Among these two groups, the sons and unmarried daughters can be located easily, but correct identification of all married daughters would require lengthy consultation of numerous marriage registers; as a result the migration of daughters will receive only limited attention here. Sons aged 15 and over not found either in Chiddingly or elsewhere in the county are assumed to have migrated to more distant places.

A study based on such sources and assumptions has significant limitations. First, the families studied form a self-selected group, restricted to the less migratory couples, since any couple that spent only a few years in Chiddingly
automatically excluded itself from consideration. It seems reasonable to assume
that migratory parents would have had children who were more prone to leave
the county than the children in the group studied here. In other words, we are
not dealing with a true sample, but rather with a group representative of the less
migratory elements of Chiddingly’s population. Secondly, the gender bias in
the sample is unfortunate, as it is generally believed that young females were
more migratory than young males. Thirdly, errors in the sources used, such as
the possible occasional omission of births and deaths from the registers, may
invalidate individual assumptions of distance migration. In spite of these
limitations, the paucity of alternative methods of measuring out-migration at this
period provides a justification for the exercise, provided that the results are
treated as approximate only.

Little can be said about the migration of daughters, on account of limitations to
the study already mentioned. Among daughters aged between five and nine in
1841, 64 per cent of those with farmer or craftsman fathers and 48 per cent of
those with labourer fathers were still found to be living in Chiddingly under
their maiden names in 1851, though not necessarily in the parental home
(comparable figures for sons in the same age group were 56 per cent and 65 per
cent). Those unmarried migrant daughters who were traced had all become
servants, mainly in households in zone A. It is possible in a few instances to gain
a glimpse of the personal links that must often have influenced the locational
decision; for example, two sisters and two daughters of John Guy (brickmaker
and farmer of 50 acres) were servants in Lewes in 1851, while two girls were
servants in the Hamsey household of a farmer who had previously lived in
Chiddingly. Virtually all of the handful of married daughters traced had a
husband whose occupation was similar to that of their father.

Turning now to the sons, it is useful to start with a consideration of their
occupations, with particular interest in a comparison of the occupations of
fathers and sons. This is only possible for those 224 sons aged 15 and over who
were living in East Sussex in 1851 (in some cases their fathers had moved to
other East Sussex parishes by 1851). Table 5 shows the occupations of the sons of
farmers, craftsmen etc., and labourers (mostly agricultural labourers). Roughly
one quarter of farmers’ sons were themselves farmers, and many of the younger
ones described as ‘at home’ were almost certainly working on the father’s farm
prior to launching out on their own. Nearly one third had become craftsmen or
more frequently traders, such as butchers, millers, corn dealers and shopkeepers. However, about one quarter were labourers, suggesting that there
had been some downward social migration, affecting especially the sons of small
farmers. Among the sons of craftsmen etc. nearly 62 per cent had followed in
their fathers’ footsteps, often in exactly the same craft, no doubt because they had
received their initial training at home. Only one had become a farmer, but 31 per
cent were labourers, once again pointing to downward social migration. Among
the larger group of labourers’ sons, if we combine the figures for labourers with
those who were living-in servants in 1851 but likely to become labourers on
marriage, we find over 90 per cent remaining in the same occupational group as
their fathers. One son had managed to acquire a tiny (presumably part-time)
farm, and six others had become petty craftsmen, mainly shoemakers. This
Table 5  Occupations of sons aged 15 and over living in East Sussex, 1851

<table>
<thead>
<tr>
<th>Father’s occupation</th>
<th>Not employed†</th>
<th>Farmer</th>
<th>Craftsman or trader‡</th>
<th>Labourer</th>
<th>Servant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Farmer</td>
<td>18.9</td>
<td>24.5</td>
<td>32.0</td>
<td>24.5</td>
<td>0.0</td>
<td>53</td>
</tr>
<tr>
<td>Craftsman</td>
<td>4.8</td>
<td>2.4</td>
<td>61.9</td>
<td>31.0</td>
<td>0.0</td>
<td>42</td>
</tr>
<tr>
<td>Labourer</td>
<td>3.9</td>
<td>0.8</td>
<td>4.7</td>
<td>78.3</td>
<td>12.4</td>
<td>129</td>
</tr>
</tbody>
</table>

Notes:  
† = includes some families that had moved to other parishes in East Sussex;  
‡ = includes those described as ‘at home’, in the Hellingly workhouse and in Lewes prison;  
* = includes schoolteachers and a dissenting minister.

Table 6  Places of residence of sons aged 15 and over, 1851

<table>
<thead>
<tr>
<th>Father’s occupation</th>
<th>Locally</th>
<th>Zones b &amp; c</th>
<th>Distant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>n.</td>
</tr>
<tr>
<td>Farmer</td>
<td>80.0</td>
<td>5.5</td>
<td>14.5</td>
<td>55</td>
</tr>
<tr>
<td>Craftsman</td>
<td>47.0</td>
<td>12.1</td>
<td>40.9</td>
<td>66</td>
</tr>
<tr>
<td>Labourer</td>
<td>70.9</td>
<td>6.0</td>
<td>23.1</td>
<td>134</td>
</tr>
<tr>
<td>All</td>
<td>66.7</td>
<td>7.5</td>
<td>25.9</td>
<td>255</td>
</tr>
</tbody>
</table>

Note:  
Includes only sons of fathers who remained in Chiddingly, apart from three farmers who had moved just across the parish boundary.

confirms the view that there was little scope for upward social mobility for those sons of labourers who remained in the rural parts of the county.30

The same occupational groups for fathers have been used (though in this case excluding parents who had moved to other East Sussex parishes) for an analysis of the location of sons. Three distance zones were recognised: parishes in zone A combined with Chiddingly itself formed a local zone, where any sons located in 1851 can be classed as ‘stayers’; zones B and C combined represent medium-distance migration, while sons not found in East Sussex are classed as distant migrants. Table 6 reveals that the sons of craftsmen and traders were most likely to become distant migrants (41 per cent), while less than half remained in the locality. Seventy one per cent of labourers’ sons were ‘stayers’ and 23 per cent were distant migrants, while farmers’ sons were the least migratory, with 80 per cent ‘stayers’ and under 15 per cent distant migrants.31 It is worth noting however, that although labourers’ sons were less likely to become distant migrants than craftsmen’s sons, in numerical terms the contributions of the two groups were similar.
Table 7  Distant migrants by birth-order (percentage of living sons aged 15 and over in each birth-order group for each occupation)

<table>
<thead>
<tr>
<th>Father's occupation</th>
<th>sons 1 &amp; 2</th>
<th></th>
<th>sons 3 &amp; 4</th>
<th></th>
<th>sons 5–10</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n.</td>
<td>%</td>
<td>n.</td>
<td>%</td>
<td>n.</td>
<td>%</td>
</tr>
<tr>
<td>Farmer</td>
<td>4</td>
<td>11.1</td>
<td>3</td>
<td>23.1</td>
<td>1</td>
<td>9.1</td>
</tr>
<tr>
<td>Craftsman</td>
<td>17</td>
<td>40.5</td>
<td>9</td>
<td>52.9</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>Labourer</td>
<td>13</td>
<td>17.8</td>
<td>12</td>
<td>30.8</td>
<td>6</td>
<td>27.3</td>
</tr>
<tr>
<td><strong>Total distant migrants</strong></td>
<td><strong>34</strong></td>
<td></td>
<td><strong>24</strong></td>
<td></td>
<td><strong>8</strong></td>
<td></td>
</tr>
</tbody>
</table>

Explanations can be linked with employment prospects in the locality. The many sons of craftsmen who were trained in their fathers’ workshops would have found only a few local openings for their skills, so they were forced to move away to gain further experience as journeymen, and perhaps eventually to establish their own business. This was a long-established tradition. Labourers’ sons faced the choice of remaining in the locality as labourers, with the associated disadvantages of underemployment and low pay, or moving to an expanding urban centre where casual work was more readily available and an enterprising man had some prospects of betterment. Most clearly preferred the former course, perhaps trapped by their limited horizons and the strong community ties that enveloped them. Farmers’ sons had a similar attachment to the locality, and those who did not become farmers themselves often remained in the area by becoming traders or by downward social mobility into the ranks of labourers. Little is known about where any of the distant migrants went or what occupations they followed, except to note that two or three were transported to Australia, and three sons of one labourer became soldiers.

The family data were used to consider one further question: did birth order influence the likelihood of distant migration? Only families where there were no doubts about the completeness of the record were used for this exercise, except in the case of farmers where so few families passed this test that it was decided to use all farmer families, while treating the results with extra caution. Table 7 shows that in all three occupational groups, it was the middle-order sons who were most likely to become distant migrants. In the case of craftsmen and traders, the elder sons were also likely to move away (to make room in the father’s workshop for younger brothers?), whilst among labourers it was the younger sons who were nearly as migratory as their middle-order brothers. The numbers are too small for much weight to be placed on the figures, but the results could point in the right direction. No doubt decisions about the initial placement of any son were taken by the parents, who would naturally be inclined to exploit their local knowledge and contacts first. When it came to the turn of sons three and four, perhaps local opportunities had been exhausted and the parents turned to more distant contacts? Autobiographies reveal that some young men moved on from local placements, making their own decisions in their late teens or early twenties to try their luck in more distant places, but it
seems unlikely that middle-ranking sons would be more prone to make such a decision than their elder brothers. At the other end of the age range, younger sons may have been more likely to remain in the parental home until marriage, either because it was now less crowded, or because they were needed to help or support ageing parents. This is an aspect of migration that needs more detailed consideration using a larger data set than is available here.

To summarize, the sons and daughters of the sample families did leave Chiddingly in considerable numbers during the second quarter of the nineteenth century. The sons most likely to move away were the children of craftsmen and traders, especially those who were following in their fathers’ footsteps, but they were joined by nearly one third of the middle-ranking and younger sons of labourers. The tradition of moving away from the home area was already well established for craftsmen, but for labourers it was still in process of evolving, hence the number of relatives and friends living in the reception areas and providing scope for chain migration was steadily increasing.

Conclusion

Two types of migration affected the parish of Chiddingly between 1821 and 1851. First, a long-standing interchange of population with nearby parishes continued, involving both family groups and young people moving independently; since local in- and out-migrants were by this date similar in number, this type of movement had little impact on total population change. Secondly, a sizeable proportion of young people, mostly aged between 15 and 25, moved to distant places where employment prospects were better; there was little compensatory long distance in-migration, so this movement did influence population numbers by reducing the rate of increase. Among young men, it was the sons of craftsmen, traders and professional men who were most likely to join this distant migration stream, a reflection of the wider geographical network of contacts that usually existed among persons in these occupational groups, combined with a long-standing tradition of travelling to find work. In contrast, the sons of farmers only rarely left the Wealden district, chiefly because farming skills acquired there did not easily transfer to different environments. The sons of labourers occupied an intermediate position, being more migratory than the sons of farmers but less migratory than the sons of craftsmen and traders.

It is the labourer group that is the most interesting, because attitudes to out-migration among their sons appear to have been in process of change. It seems likely that relatively few such sons (less than one in ten?) became distant migrants during the early eighteenth century, whereas by the late nineteenth century the proportion had reached well over half. Clearly the century between 1750 and 1850 was a time of transition, with the period covered by this article representing the later phase. If the assumption that many of Chiddingly’s out-migrants ended up in Brighton is correct, then it seems likely that the attraction to this resort began when it started to grow in the late eighteenth century (1760 population about 2,000; 1821 – 24,429), a vigorous demand for servants, grooms, building workers and general labourers only 27 km away could hardly have failed to attract Chiddingly’s young labourers at a time when their numbers
were increasing and local employment becoming more difficult to find. More details of the scale and timing of this migration may be available in the records of Brighton itself.

NOTES


2. D. Mills and C. Pearce, *People and places in the Victorian census*, Historical Geography Research Series **23** (1989); this lists many publications dealing with migration that have used the census enumerators' books.


6. East Sussex Record Office, Lewes (henceforth ESRO) PAR 292/37/1; 1841: Public Record Office (henceforth PRO) HO107/1118; 1851: PRO HO107/1638. The 1821 listing names houses and where there was multiple occupation notes '2 dwellings' or 'two families'; the names and ages of most individuals are given, together with their relationship to the head; occupations are listed for most male heads but not for lodgers or adult children; later annotations in some cases give details of year of death, movement out of the parish ('gone to Falmer'), and occasionally other details ('killed on railway').


14. R. I. Woods, 'The structure of mortality in mid-nineteenth century England and Wales', *Journal of Historical Geography*, **8** (1982), 373–94, especially Figure 5; R. I. Woods, 'Approaches to the fertility transition in Victorian England', *Population Studies*, **41** (1987), 286; J. P. Huzel, 'The demographic impact of the Old Poor Law: more reflections on Malthus', *Economic History Review*, 2nd ser. **33** (1980), 372–3. Huzel's tables, showing demographic indices calculated for various parishes in the 1820s, include Hellingly, an immediately neighbour of Chiddingly, where the infant mortality rate he calculated (55–60 per 1,000 births) was among the lowest. This figure is almost certainly too low, but the relative advantage of the area may be correctly identified.

15. The influence of the railway can be ignored for the period under consideration; the nearest station on the line from Lewes to Hastings, opened in 1846, was about 4 km beyond the southern boundary of
the parish.


17. ‘Sussex men in general, and Sussex peasants in particular, were no great travellers. People coming from a distance of twenty miles were looked upon as “furriners”...’, M. A. Lower, ‘Old speech and old manners in Sussex’, Sussex Archaeological Collections, 13 (1861), 218 (Lower was born and brought up in Chiddingly); Short argues the case for considerable mobility for employment and marriage, B. M. Short, ‘The geography of local migration and marriage 1500–1900’, University of Sussex Research Papers in Geography, 15 (1981).


20. Brandon and Short, The South East, 321; Brent, Georgian Lewes, 9.

21. Chiddingly vestry minutes, ESRO PAR 292/12/1.

22. While the population of Chiddingly increased by about 25 per cent between 1821 and 1851, the small towns of Hailsham and Uckfield both gained over 40 per cent.


25. According to notes added in a later hand to the 1821 census listing, Thomas Funnel (cooper) and family emigrated to America in 1832 and Thomas Roberts (labourer) and family departed for Australia in the same year, ESRO 292/37/1; Trayton Townshend's move to Australia was noted in November 1848 as financed by Chiddingly vestry, ESRO PAR 292/12/1.


31. cf. K. Schürer, ‘The role of the family in the process of migration’ in Pooley and Whyte, Migration, 106–42.


33. The baptismal register entry for Sophia Jenner, 19 July 1824, records that her father William was transported for sheep stealing, ESRO PAR 292/1/2/1; notes on the 1821 listing indicate that Stephen Richardson was twice transported, ESRO PAR 292/37/1; three sons of Richard Robards (household no. 80) are described on the 1821 listing as having subsequently become soldiers, ESRO PAR 292/37/1.


PROFITABLE PURSUITS? RURAL INDUSTRY AND MORTALITY IN THE PROTO-INDUSTRIAL WEST RIDING 1650-1830

Steve King

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Since The Population History of England, the demographic variables of nuptiality and fertility have been firmly installed as the engine of eighteenth and nineteenth-century population revolution.1 While there has been an explosion of work on nineteenth-century mortality regimes to complement this picture, the role and character of eighteenth-century mortality trends has been substantially under-researched.2 Pre-1800 perspectives on mortality have tended to concentrate on burial crises or on the nature and role of urban mortality, with limited attempts at detailed contextualisation of mortality figures.3 Peter Razzell’s claim that there is a strong case for re-emphasising the role of mortality decline in the English population revolution, stands as a continuing rallying call for more studies of local mortality regimes and the context in which life and death events were played out.4

Nowhere is this rallying call more necessary than in the demographic study of English rural industrial areas, where there has been a dearth of literature after the initial reconstitution work of Levine in the 1970s.5 European scholars have a long tradition of research on the connections between rural industrialisation, health and mortality but this has yet to be duplicated in England. A very brief review of some of the European findings may help to highlight key issues. On the negative side, Braun, Lehning and others associate proto-industrialisation with overcrowding, community disruption, deteriorating diet, child neglect, high rates of maternal mortality and substantial risks of occupational illness and deformity among industrial workers.6 On the positive side, European rural industrial areas appear to have had more dense kinship networks than either rural or urban areas, and this may have been the basis for better childcare or enhanced economic security. Transport, credit, and retail systems also appear to have been relatively highly developed in rural industrial areas, ensuring consistent food supplies from an early date.7

The observations of eighteenth and nineteenth-century local historians and other contemporary commentators in English proto-industrial districts suggest that we could undertake a similar balancing of positive and negative influences on health and mortality. For the West Riding, Joseph Lawson, taking a retrospective look back from the 1880’s characterised rural industrial areas as places with streets
full of filth, poor quality and interrupted water supply, houses badly lit and undrained, a diet overwhelmingly dependent upon oat cakes, brown bread, porridge, milk, potatoes and home brew, and endemic chest diseases associated with the need to dry woollen cloth in the house during damp spells. In 1822 Parsons observed that more children were born in the West Riding than in either the North or East Ridings but that fewer survived to the age group 45–50, drawing a clear association between industrial work and health. Loss of common and waste land, and technological redundancy in many traditional female tasks in woollen cloth production, must have exacerbated these negative factors.

On the other hand, and in line with European experience, English rural industrial areas appear to have generated dense kinship networks, sophisticated credit networks for food and to have witnessed co-operation between families on a scale not apparent elsewhere. Lawson, talking of the West Riding proto-industrial township of Pudsey, for instance, noted that: 'It is pleasing in these rude times to see the mutual good will and friendship there is, notwithstanding the occasional back biting, tittle tattle and ill-will. They watch and nurse each others families when sick and borrow and lend almost anything in the house, though I am not aware that they equal the folk in a neighbouring village where it is said that they borrow basins of broth and pots and plates of porridge.' Such communality even extended to mutual self-help in the building of mills.

Clearly, the experience of public health, illness and death in English rural industrial areas is likely to be a complex topic, and one which deserves more attention than it has thus far received. The rest of this article will present some of the initial mortality figures from a large scale reconstruction study of textile villages in the West Riding between 1650 and 1830. Centring on individual and family histories carved out of parish registers using family reconstitution, the aim of the study is to provide an aggregate picture of demographic conditions in rural industrial areas, and then to stray below the level of aggregate figures to provide individual and familial context. In particular the analysis will focus on the parish of Calverley (Figure 1), whose 14,000 inhabitants in 1821 were largely concentrated into four township groupings (Calverley-cum-Farsley, Pudsey/Stanningley, Idle and Bolton). The township of Calverley-cum-Farsley (1821 population 2,600) was the location of the parish church and has been subject to intensive community reconstruction, with the linking of tax, landholding, apprenticeship, poor law and a variety of other data to 1,600 family, and 5,000 individual, demographic life-cycles. Multiple source record linkage of this sort allows the detailed determination of social status, and all families in the township were consigned to one of five social groups on the basis of the balance of indicators over the life-cycle as a whole. These ranged from lifetime proletarians (category one) to substantial landholding groups from all trades (category five), and it is information like this which will be used to highlight the context of aggregate mortality figures.

During the eighteenth century the increasing dominance of the West Riding in national broad cloth output was reflected in the prosperity of the Leeds area, with Calverley participating in substantial output growth. The independent
landholding clothier, rather than the wage dependent putting-out worker familiar in the production of worsted cloth around Halifax, dominated the male occupational structure of the parish throughout the eighteenth and early nineteenth centuries. Between 60 and 80 per cent of all occupational ascriptions in the parish registers for this period were 'clothiers', with textile trades in general dominating the occupational profile of the parish. The relationship
between landholding and rural industry throughout the eighteenth century is exemplified by the experience of Calverley-cum-Farsley. Here, between 45 and 70 per cent of landholders at any point in time were aged 50 plus, with land gradually released to younger generations as parents and relatives effectively retired. Landed independence for the cloth producing artisan was thus something to be attained well over thirty, preceded by an extensive period of working land controlled by the older generation.

By the early nineteenth century wage dependency had increased in all townships. Pudsey and Stanningley became centres of proletarian production in workshops, while worsted, cotton and shoddy work were present in both Idle and Pudsey by 1800. This was part of a flowering of the range of trades in the parish from the 1770s onwards. Nonetheless, the production of woollen cloth by small independent clothiers remained the mainstay of the parish and social climbing was still very much a reality in 1806, when the enquiry into the state of the woollen industry dealt with few witnesses who were not smaller clothiers producing textiles using family labour. By 1822, the parish had a third more men engaged directly in the production of woollen cloth than the neighbouring and bigger parish of Birstall.

Table 1 reproduces infant and childhood mortality figures for the parish as a whole. There appears to have been a significant upward movement in all mortality categories and for all of the townships during the eighteenth and early nineteenth centuries. This contrasts with the 'national' picture from 26 family reconstitutions, where infant and childhood mortality peaked between 1700-49 and then fell. In part, what we might see here is the inevitable consequence of population growth. However, since Calverley shared the characteristic of rising mortality levels with all other proto-industrial areas which have so far been subject to family reconstitution, there is a case for linking deteriorating public health and mortality and rural industry more widely. Moreover, as Table 2 shows, there were important differences in mortality levels between Calverley and other proto-industrial areas, and between Calverley townships and national
aggregates.20 With the exception of Pudsey, infant mortality rates were below the national average during the eighteenth century, notwithstanding the trend differences between the two samples. However, where we confine the analysis just to proto-industrial areas, Calverley townships seem to be on the high side of infant and childhood mortality, at least until the opening decades of the nineteenth century and more generally, it is clear that childhood mortality at all ages was substantially worse than the national average.

Detailed reconstruction of the context to these mortality patterns for the township of Calverley-cum-Farsley can reveal much. Using the social status categorisation of families outlined above, Figure 2 shows that lifetime proletarians and those struggling on the margins between wage dependency and independent production experienced the highest rates of infant and childhood mortality.21 This is perhaps little more than one would expect, but it is clear from Figure 3 that enhanced mortality among these social groups was not a simple reflection of health conditions in cloth producing households. The families of weavers, combers and others in the waged-textile sphere experienced higher infant and child mortality than the families of clothiers in the aggregate, but it was families engaged in service and craft occupations (masons, publicans, blacksmiths and grocers) who had the worst experience.

What even this sort of disaggregation masks however is a significant and marked familial concentration of childhood mortality in particular.22 Some 320 Calverley-cum-Farsley families experienced 614 child deaths (1.6 per family). Within this however, 117 families experienced multiple child deaths, recording 355 (2.6 per family) and 31 of these families recorded at least two child deaths and at least two infant deaths. Even where we control for the depletion of families by previous infant mortality, there was a distinct tendency for certain families to have an extremely poor child mortality experience.23 John Wood (married in 1704) lost two children under one, one child at age two and another at age nine. William Walker (married in 1713) lost three children as infants, and children aged two, three and eight. James Wade (married in 1780) lost four children as
Figure 2  Social status distribution of infant and childhood mortality in Calverley-cum-Farsley, 1650–1800

Source: Family reconstitution.
Notes: Social status 0 – families where there were not at least three social status indicators, excluding poor relief receipt.
Social status 1 – families dependent on wages and consistently delineated as low social status through sources like housings surveys.
Social status 2 – families which experienced marked variation of occupation over the life cycle and who could be traced to the lowest level of quantitative indicators, such as paying on one hearth in the hearth tax or paying poor rates intermittently. Mainly marginal clothiers, moving backwards and forwards between landed independence.
Social status 3 – families who had a consistent experience of small landholding, who paid tax of between one and two hearths or who consistently paid local taxes at low levels. These people never appear in sources which would confirm middling to high social status, such as newspapers or lists of people from whom Sir Walter Calverley borrows money.
Social status 4 – families which held between 15–30 acres, who paid tax on 2+ hearths or who paid more than £1 and less than £3 toward poor relief in any year. These families might appear in qualitative indicators of high social status, such as newspapers or lists of members of the Court Baron. In occupational terms, these were mainly husbandmen, yeomen, the service and craft trades and middling clothiers.
Social status 5 – families which held 30+ acres of land, who paid tax on more than 2 hearths and who contributed more than £3 to poor rates. Such families and their individual members consistently appear in sources which provide a qualitative confirmation of high status, such as people invited to dine with Walter Calverley before local elections.
Figure 3  The occupational distribution of infant and childhood mortality in Calverley-cum-Farsley, 1650–1800

Source:  Family reconstitution.
Notes:  See Figure 2.

Figure 4  The seasonality of infant and childhood mortality in Calverley-cum-Farsley, 1650–1799

Source:  Family reconstitution.
infants, two children aged one, a child aged three, a child aged nine and a child aged fourteen. All of the townships shared this experience of concentrated mortality. In Pudsey for instance, 58 per cent of childhood mortality was concentrated in just 18 per cent of families.24

Clearly there is much here to explain: rising infant and childhood mortality at the same time as national indicators were falling, intensive familial and social status concentration of mortality and levels of childhood mortality in particular which were well above the national average. It will always be impossible to talk with full confidence, but a number of potential influences are discernible. First, plotting the seasonality of mortality in Figure 4 highlights the fact that for most of the period considered here, the township shared the winter peak in mortality apparent in many other local studies.25 Such seasonal concentration might suggest that chest diseases and diseases of association such as typhus were the main drivers of mortality.26 Certainly the influence of town based diseases was limited. Creighton traces the eighteenth-century emergence of two childhood diseases – measles and scarlatina – in the Leeds area, but peaks in infant and child mortality at parish level could not be associated in any simple way with the occurrence of urban disease. Child burials rose in 1727 and 1729 at the same time as Creighton was identifying relapsing fever rife in West Yorkshire. Burials also rose with the advent of an intense typhus epidemic in Leeds in 1779, and with smallpox outbreaks in Leeds and Bradford in 1721. However, smallpox outbreaks in Leeds in 1773 and 1781 were accompanied by a lull in child death, as was a widespread measles epidemic in 1726.27 Rather, Calverley parish shared much in terms of mortality characteristics with the local cloth producing country, and it is here that we should look for the operation of an interwoven demographic system.

Second, there may be some relationship between the changing residential patterns of children and their susceptibility to disease. Thus, apprenticeship as a means of controlling long term poverty was more common after 1750. The clear rise in mortality between the ages of 10 and 14 in all townships might thus reflect the fact that the tendency for apprenticeship to take particularly poorer children out of their own families and deposit them in new production and care units increased the risks of accident, neglect, overcrowding and poor sleeping and working conditions in the reception household for children in this age group.28 Could the mortality rise in the other age groups be explained in a similar way? Orphaned children were more common after 1750 than before, and while in some cases the parish went to considerable lengths to ensure that such children were cared for in the houses of people who were at least of a comparable social status, many others found themselves boarded out with people who were themselves either pauperised or ill. Potentially this had plenty of negative implications for childcare and dietary standards.

Thirdly, much of the rise in infant and early childhood mortality during the course of the eighteenth century seems to have been generated by higher mortality among children aged between 10 and 18 months. This may have reflected two key changes in female demography. On the one hand, the experience of maternal mortality appears to have had an effect on the life
chances of infants and young children. Maternal deaths in Calverley parish were running at a higher level after 1740, demonstrating a marked contrast in trend and level with wider national figures. Deaths of this sort not only put a new-born infant at grave risk, but in creating disruption to family income and childcare routines also endangered young children. On the other hand, there is some evidence that a trend towards earlier weaning developed over the course of the eighteenth century. Thus, the average female life-cycle in the later eighteenth century contained more very short intervals than it had done before and the non-susceptible period for the Calverley-cum-Farsley sample as a whole fell by almost 45 per cent over the course of the eighteenth-century. Using the methods deployed by Wilson, this suggests that there was a fall in the mean age at weaning from 12–14 months to perhaps 9–11 months. Some confirmation of this influence comes in the form of the seasonality of infant and child death. As Figure 4 shows, during the course of the eighteenth century the winter peak/summer trough pattern was supplemented with a secondary early summer/late summer peak reflecting mainly the experience of very young children who were perhaps subjected to the rigours of gastric diseases by the practice of early weaning.

Can we link this experience to the changing economic position of the household? Tentative evidence suggests the validity of this approach. Thus, those potentially most susceptible to crises in the family economy, for instance those on the margins between landed production and proletarianisation, had the worst experiences of infant and childhood mortality. Moreover, diary evidence, poor law data and advertisements in Leeds newspapers suggest that progressive technological redundancy from 1750, allied with greater susceptibility to trade fluctuations in the later eighteenth century, obliged some women to engage more frequently and intensively in income generation after 1750 than before.

We could of course also review a whole range of other potential influences on the infant and child mortality picture. Foremost among them might be the experience of poor health of parents and the resulting deterioration of childcare. Or we might draw some association between migratory status, access to credit networks for food, and health and mortality conditions. The full explanatory framework for infant and child mortality conditions in the parish must still remain unclear. Yet, the observation that Calverley looked ‘different’ from the national picture and that there were fundamental familial and social status concentrations in mortality experience, carries important implications for the debate over the character of demographic regimes in proto-industrial areas, to which we return below.

The question of adult mortality in proto-industrial areas meanwhile is one that has been only fitfully explored. Generating adult mortality figures is beset with technical difficulties. Since English parish registers do not regularly give reliable ages at death, calculation of death rates depends upon detecting and linking baptisms and burials for individuals in the process of family reconstitution. The dangers of the small sample sizes generated in this process have been emphasised by Ruggles. Even a sample of the size employed here is not immune from such difficulties. Thus, between 1700–70 there were 8,864 distinct
marriage partners in Calverley parish; of these, 4,187 (47.2 per cent) had both baptism and burial dates detected.\textsuperscript{35} Excluding those marriages where Calverley was only a nominal residence, 54 per cent of all marriage partners could be assigned an age at death based upon detection of their baptisms. This is better than the experience of some other family reconstitution studies, but still means that a bare majority of people would be represented in adult mortality calculations. A more accurate estimate would depend upon including the experience of two distinct sets of people – those who were baptised in a parish, but had no burial data because they migrated but were at risk of death until they left, and those who migrated inwards and had a burial date but no baptism and were therefore at risk for an unknown period.

Wrigley's solution was to create a range of mortality estimates within which the 'true' figure must lie, extrapolating the mortality experience for those without burial dates from that of those who were buried in the parish. Thus, the most pessimistic picture of adult mortality would be created by assuming that none of the people without a death date lived past sixty-nine, while the most optimistic picture would assume that none of them died before sixty.\textsuperscript{36} Blum advanced alternative but related measures; his 'high mortality' model assumed that eventual migrants died at the date of the last event which they recorded. A more optimistic picture would assume that eventual migrants left immediately before the vital event they would have registered had they stayed.\textsuperscript{37} As Ruggles notes, however, the tendency for donor families to demonstrate earlier deaths and shorter intervals to the next event than the general population could lead to overstatement of mortality.\textsuperscript{38} More recently, Wrigley, Davies, Oeppen and Schofield have proposed further modifications to the methods deployed for coping with those who migrate outwards in the calculation of life expectancies.\textsuperscript{39}

Unfortunately, these solutions only cover one of the problems surrounding missing events. In both continental and English populations, rural industrial incursion allowed more native people to spend more of their life-cycles in a parish by generating more residential and work opportunities, but also stimulated substantial in-migration. Certainly in Calverley it is people moving in, rather than people moving out, who do most to upset adult mortality calculations. To deal with these cases, we might assume that everyone who married and had no baptism, married at the average age, calculating age at death from age at marriage rather than baptism. In practice, the differences in mean age at death between a sample which includes all marriage partners with known baptism and burial dates (54.6) and one in which the baptism dates of the very same people have been eliminated from the life-cycle template and the assumption on age at marriage employed (55.7) are very small indeed. This reflects an emerging tendency for marriage ages to be relatively concentrated in rural industrial areas.\textsuperscript{40} Adult life expectancy figures calculated along the lines of these different approaches appear in Table 3, while Table 4 provides some comparative perspective. Most of the estimates suggest that the Calverley adult death experience was worse than that of Shepshed, Terling and a range of other parishes and townships, with the deviation particularly marked in young adulthood. There were also significant later eighteenth century differences from 'national' estimates, with life expectancy in the mid-twenties fluctuating between 35–37 during this period.
Table 3  Adult life expectancy figures (from ages given, in years) Calverley parish 1700–1770

<table>
<thead>
<tr>
<th>Methodology</th>
<th>24</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
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<tr>
<td>Wrigley (High)</td>
<td>31.4</td>
<td>22.6</td>
<td>17.0</td>
<td>11.8</td>
<td>8.1</td>
<td>1.6</td>
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<tr>
<td>Wrigley (Low)</td>
<td>33.0</td>
<td>24.4</td>
<td>18.3</td>
<td>12.2</td>
<td>7.9</td>
<td>1.4</td>
</tr>
<tr>
<td>Blum (High)</td>
<td>30.7</td>
<td>22.0</td>
<td>16.9</td>
<td>10.8</td>
<td>5.7</td>
<td>3.6</td>
</tr>
<tr>
<td>Blum (Low)</td>
<td>31.6</td>
<td>22.6</td>
<td>17.7</td>
<td>12.2</td>
<td>7.7</td>
<td>4.2</td>
</tr>
<tr>
<td>Ruggles (High)</td>
<td>30.9</td>
<td>22.8</td>
<td>16.0</td>
<td>11.2</td>
<td>4.8</td>
<td>3.4</td>
</tr>
<tr>
<td>Ruggles (Low)</td>
<td>32.4</td>
<td>23.1</td>
<td>17.9</td>
<td>12.9</td>
<td>8.4</td>
<td>4.8</td>
</tr>
<tr>
<td>Combined (High)</td>
<td>29.6</td>
<td>22.3</td>
<td>17.1</td>
<td>12.0</td>
<td>7.7</td>
<td>1.3</td>
</tr>
<tr>
<td>Combined (Low)</td>
<td>31.3</td>
<td>23.8</td>
<td>18.2</td>
<td>12.4</td>
<td>7.7</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Note: The figures under 'combined' are derived by adopting the Wrigley method for dealing with people who have missing burials and the standard age at marriage approach outlined in the text for those marriage partners without baptisms. The period 1700–1770 was chosen to minimise the impact of the upper cut off point which effectively closes life-cycle observation.

Source: Family reconstitution.

Table 4  Calverley adult life expectancy figures (from age given, in years) in perspective

<table>
<thead>
<tr>
<th>Place and Period</th>
<th>25</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
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<tr>
<td>Terling 1750–74</td>
<td>31.9</td>
<td>23.9</td>
<td>18.8</td>
<td>14.3</td>
<td>8.8</td>
<td>5.5</td>
</tr>
<tr>
<td>Terling 1775–99</td>
<td>40.6</td>
<td>30.0</td>
<td>22.5</td>
<td>14.4</td>
<td>7.7</td>
<td>4.9</td>
</tr>
<tr>
<td>Colyton 1700–49</td>
<td>28.9</td>
<td>20.8</td>
<td>15.1</td>
<td>10.6</td>
<td>6.5</td>
<td>3.8</td>
</tr>
<tr>
<td>Colyton 1750–99</td>
<td>30.7</td>
<td>21.2</td>
<td>15.8</td>
<td>10.8</td>
<td>6.9</td>
<td>3.5</td>
</tr>
<tr>
<td>Bottesford 1700–49</td>
<td>31.1</td>
<td>22.1</td>
<td>16.8</td>
<td>12.8</td>
<td>8.2</td>
<td>3.3</td>
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<tr>
<td>Bottesford 1750–99</td>
<td>36.4</td>
<td>25.9</td>
<td>19.2</td>
<td>13.3</td>
<td>8.0</td>
<td>5.1</td>
</tr>
<tr>
<td>Methley 1700–49</td>
<td>33.8</td>
<td>25.4</td>
<td>20.6</td>
<td>15.1</td>
<td>9.9</td>
<td>5.9</td>
</tr>
<tr>
<td>Methley 1750–99</td>
<td>37.0</td>
<td>27.2</td>
<td>20.8</td>
<td>14.9</td>
<td>9.3</td>
<td>5.5</td>
</tr>
<tr>
<td>Shepshed 1750–74</td>
<td>39.4</td>
<td>28.2</td>
<td>20.9</td>
<td>14.2</td>
<td>7.8</td>
<td>5.5</td>
</tr>
<tr>
<td>Shepshed 1775–99</td>
<td>36.6</td>
<td>25.9</td>
<td>19.4</td>
<td>12.4</td>
<td>6.3</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Sources: Terling, Colyton, Bottesford and Shepshed, Levine: Family Formation, 125, 14, 100, 72; Methley: Yasumoto, Industrialisation, 12.

To some extent this situation was a reflection of persistently high maternal mortality, but there were also other influences at work. One possibility for instance is that the landholding profile might have impacted upon adult mortality conditions. We have already seen that in Calverley-cum-Farsley access to land was controlled by ageing landholding figureheads, such that a couple marrying when the man was aged 25 could probably not hope to get a foot formally on the landholding ladder by leasing or buying land until he was at least in his early thirties, with sub-tenancy common. Those in the early stages of the childbearing life-cycle thus had restricted access to land and the benefits which it conferred, while those towards the end of the life-cycle were losing this benefit through early retirement. For those in the middle of the family life-cycle, renewed control of land was the precursor to better nutrition, more credit and,
Figure 5  The seasonality of adult mortality in Calverley parish 1700–1770

Notes  The period 1700–1770 was chosen so as to minimise the impact of the upper cut-off point on the detection of adult deaths in older age.
Source:  Family reconstitution.

often, a move of residence. If access to land and mortality risks were correlated, then it should be those at the start and end of the married life-cycle who experienced the greatest mortality risks, which is exactly what we see here.

Could there also be a relationship between health, mortality and migratory status? All of the Calverley townships experienced surges of in-migration from the 1750s as people attempted to take advantage of the landholding opportunities created by enclosure of wastes and commons. Such in-migrants, often young couples, created pressure on traditional landholding and occupational networks and on housing, usually experiencing downward occupational mobility for at least a period as they strived to become integrated members of their reception communities. They suffered disproportionately in infant mortality terms and also themselves paid the price of movement through enhanced risks of illness and mortality, something which can clearly be traced in poor law records for the parish.

Finally, Figure 5 details adult burial seasonality in the parish as a whole, and is perhaps suggestive of a relationship between mortality risks and increasingly intensive cottage production of wool textiles. There was a clear concentration of burial peaks in the winter and spring months, the pattern which one would have expected to emerge where tuberculosis and diseases of association were major killers. Could we argue then that among those of lower social status, among in-migrants and among those without control of land, increasingly intensive proto-
industrialisation and its associated drawbacks of pressure on water supplies, uncertainty of yearly income and overcrowding might be seen to have exacted a heavy seasonal toll?

This article raises more questions than it answers. Much more could be said about the similarities and differences between individual townships within the parish of Calverley. There is also more to uncover about the relationship between the likely nutritional status of families and individuals in proto-industrial areas, and prevailing mortality regimes. Nor has it proved possible in the space available to conduct a detailed analysis of the relationship between proto-industrialisation, housing quality, and the mortality experience of individual families.

However, it is possible to draw two important conclusions which may help to shape the way in which we view the demographic systems of rural industrial areas. First, it does not appear that there was a distinct mortality regime associated with proto-industrial development. The mortality regimes of all of the Calverley townships contrast strongly with the experience of Shepshed for instance. Second, aggregate figures mask important characteristics of mortality in rural industrial areas which should not be ignored. In particular, the concentration of childhood mortality in a restricted number of families, and the way in which adult mortality was disproportionately large at the start of the family life-cycle. How far Calverley parish is in turn representative of other proto-industrial areas organised along classic putting out lines remains to be seen, but emerging evidence does not suggest wide differences.41

NOTES

The research for this article was conducted in tandem with Professor Pat Hudson and was facilitated by grants from the Leverhulme Trust, the Scouloudie Foundation, the University of Liverpool and larger grants from the ESRC and British Academy.


8. J. Lawson, *Letter to the young on progress in Pudsey during the last sixty years*, (Slaningley, 1887).


15. For more on this, see King and Hudson, 'A sense of place'.


18. I am grateful to Roger Schofield for providing the figures which underlie much of the discussion which follows.

19. I am grateful to May Pickles for discussion of these issues.

20. I am grateful to Roger Schofield for sending me the (then) proofs of the mortality sections of the new Cambridge Group book on population history from family reconstitutions. Figures drawn from this source form the bedrock of Table 2. See E. A. Wrigley, R. S. Davies, J. E. Oeppen and R. S. Schofield, *English population history from family reconstitution* (Cambridge University Press, 1997).


24. Familial concentration of infant mortality was accompanied by a marked geographical bias in the location of high mortality families, but the same is not true of childhood mortality. Explanations relating concentrated mortality and features such as poor water supply thus have little validity in this context.


30. R. S. Schofield, 'Did the mothers really die? Three centuries of maternal mortality in 'The world we have lost'', in L. Bonfield, R. M. Smith and K. Wrightson eds, *The world we have gained: histories of population and social structure*, (Oxford, 1986), 231–60 advanced 'national' maternal mortality rates of 16:1000 1650–99, 11:3:1000 1700–49 and 7:7:1000 1750–99. The latest findings based upon 26 family reconstitutions suggest that the figure for 1700–49 should be 12.5 and that for 1750–99 9.1. In Calverley the figure for 1750–99 was 14, significantly above these 'national' figures.


32. For a review of similar continental experiences, see J. L. Flandrin, *Families*. 

39
33. Age at death statement for Calverley starts in relatively comprehensive fashion from the 1790s.
35. The dates were chosen to minimise bias. Those marrying at the average age of 23–24 in 1770 would have been over eighty at the upper cut off point.
37. A. Blum, 'An estimate of local adult mortality based on family cards', *Population*, 44 (1989), 39–59. To work out the length of this extra period of observation a 'donor' with a similar family size at a similar time is found and the interval to their next event substituted for the missing event on the part of the migrant.
38. Ruggles, 'Migration'.
39. Wrigley, Davies, Oeppen and Schofield, *English population history*.
40. See Carpenter, 'Peasants'.
POPULATION CHANGE IN MEDIEVAL WARWICKSHIRE: DOMESDAY BOOK TO THE HUNDRED ROLLS OF 1279-1280

Trevor John

Trevor John has lectured in History in the Institute of Education at the University of Warwick for many years. The history of medieval Warwickshire has always been a prominent feature of his teaching. His editions of the Coventry and Warwickshire Hundred Rolls have been published by the British Academy in the Records of Social and Economic History series.

Introduction

In 1958 J. B. Harley published an article in the Economic History Review which was a pioneering work in English medieval demography and its relationship to agrarian development.¹ It is still referred to as authoritative.² Harley's study was based on the evidence for Warwickshire, a typical midland county with a variety of landscape, the result of geology, soils and relief, and the action of man upon them. His main documentary evidence was a comparison of the Domesday Book for Warwickshire with the Hundred Rolls of 1279. The latter did not cover the whole county, but only two hundreds, Stoneleigh and Kineton (Figure 1).³ Harley argued that by 1086 the south east of the county was a long-settled area of nucleated villages whose agriculture was largely devoted to cereal production. This area, known by the sixteenth century as the Feldon, included the hundred of Kineton, and was the more populous and densely settled part of Warwickshire. The north west by contrast was much less densely settled, largely a forest area known by the eleventh century as the Arden, in which colonization was taking place as the population increased. Much of Stoneleigh hundred was in the Arden or on its fringes. Between 1086 and 1279 the Feldon was an area of population stability, an indication that there a balance between population and resources had reached equilibrium. The Arden, however, was an area of population expansion, with some parishes doubling or even trebling their inhabitants, and the density of its population was by 1279 at least equal to that of the Feldon. This must have been the result of continuing colonization.

Harley presented a coherent picture of the development of medieval Warwickshire society. Also his interpretation supported the thesis advanced by Professor Postan that the population of England was approaching a crisis well before the Black Death struck, as increasing numbers pressed upon the resources of the land to feed them adequately. Harley's evidence seemed to show medieval Warwickshire was on the way to a possible crisis of subsistence under population pressure by 1279: the long settled south could cope with no further increase; the population of the more recently colonized north was surviving on much less per capita arable land than the south.⁴ It is time to re-assess Harley's work, and a printed edition of the Warwickshire Hundred Rolls, which, when
Figure 1  Feldon Parishes mentioned in the text
Harley wrote, was only available in a manuscript in poor and confused condition among the Miscellaneous Books of the Exchequer in the Public Record Office, has made this feasible.5

The Sources: Domesday Book and the Hundred Rolls

Harley was right in stressing the importance of the Hundred Rolls to population history as well as to that of the manorial and social structure which had been examined by Kosminsky and Hilton.6 Though they are not a population census, the Hundred Rolls include more of the population than most taxation records, the lay subsidies for example, and they cover whole regions unlike manorial extents or estate surveys. Domesday Book provides, however imperfectly, a base, and the Hundred Rolls, where they exist, the first means of measuring the population increase from the eleventh century to the thirteenth century with some confidence. But Domesday Book and the Hundred Rolls are not quite similar documents. The former enumerates the land-holding population: it lists numbers of tenants.7 The Hundred Rolls in their fullest form, like manorial surveys, list holdings rather than tenants, though the tenants of the holdings are named. Therefore, to be certain that like is being compared with like, because one individual may have two or more holdings, figures from the Hundred Rolls must be reduced to a list of tenants, and this has been attempted for the two Warwickshire hundreds. Harley did not do this and this is one reason for some discrepancies in our figures. It is a laborious process and undoubtedly errors have been made. It has been assumed that tenants of the same name within a vill are the same person, and they have been counted as one, not two or more. Also some tenants have land in more than one vill: this frequently occurred with freeholders in the Oxfordshire hundred of Bampton, but no allowance has been made for this here.8 Since the first process leads to under counting and the second to over counting, it is hoped that they will compensate for each other. Not too much importance should be attached to the absolute figures for tenants in each vill or the overall aggregate, though some care has been taken to make them as accurate as possible. The percentages and growth ratios resulting from the comparison will be the best guide to the changes which have taken place between 1086 and 1279.9

Only the figures from Domesday Book for villeins, bordars and serfs have been used; the miscellaneous population, statistically almost insignificant, has not been included. The serfs of Domesday Book were probably slaves and present a problem in that it is not certain they should be classed as tenants.10 Manorial lords and ecclesiastical tenants are omitted from the Hundred Rolls figures. The aim is to compare the recorded peasantry at the two points in time. Also excluded from the calculations are seven settlements recorded in Domesday Book but not in the Hundred Rolls.11 For example, Myton and Roundhill do not appear in the Stoneleigh roll, and Barcheston and Burmington are absent from the Kineton section. These settlements certainly existed in 1279 as well as 1086, and therefore to include them in the Domesday Book figures would be misleading. The five vills whose entries in the Hundred Rolls are largely illegible have also been omitted from the calculations.12 The figures for Warwick and
Coventry have been omitted from the overall calculations in order to focus on the changes in the rural communities.

Where however there are Hundred Rolls figures for settlements which are not, or have no separate entry, in Domesday Book, these have been included in the calculations. As will be shown, to have omitted them would have resulted in the under-estimation of the population increase by 1279. There are no Domesday Book figures for some settlements possibly because they did not exist in 1086 but had become established by 1279. It is impossible to state which these are. Domesday Book is by no means a complete record of all vills in existence by 1086:13 some settlements were included with another, sometimes explicitly as Wellesbourne with Kineton, sometimes not. For example, Offchurch almost certainly existed in 1086 but it is not mentioned in Domesday Book. It was a manor of the abbey of Coventry, and was perhaps included in another nearby estate of the abbey.14 In Kineton hundred there are no separate Domesday Book figures for 28 out of 72 vills in 40 parishes recorded in the Hundred Rolls, and in Stoneleigh hundred 24 out of 51 vills in 27 parishes.

It is also worth stressing, as Harley did, that the figures from Domesday Book and the Hundred Rolls indicate probable trends not absolute population figures, and it is not possible to say how closely the two are related. Indeed L. R. Poos would include them among ‘relatively tangential source material’ for the study of population growth and trends. He warns of the difficulty of converting tenurial lists into population figures.15 Domesday Book and the Hundred Rolls by no means record even all heads of households. Postan suggests that the compilers of Domesday Book were more interested in units of land-holding rather than actual holders of land, and therefore the figures may conceal the real numbers of heads of families. It is also possible that certain categories of tenants in certain areas may have been ignored altogether. The censarii in the Burton Abbey estates in Derbyshire and Staffordshire are a case in point: they are recorded in surveys of 1114 and c.1126, but not mentioned in Domesday Book, though it is possible that they are settlers on land newly-cleared between 1086 and 1114.16 The Warwickshire Hundred Rolls hint at the existence of more small family holdings than are listed in the document, and that the actual occupancy of the land may be more complex than appears in the written record. At Wasperton, a freeholder of a virgate (Robert le Hyer) is obligated to come to the great reaping of his manorial lord ‘and if he has cottagers they ought to reap there’ (et si habeat cotarios debent ibidem metere).17 There was also probably an underclass of propertyless rural poor: at Halford, a village where 47 tenants are listed, John le Breggewrythe held three acres of land for homage and finding 36 paupers bread, herring and ale on the feast of the Nativity of the Blessed Virgin (8 September).18 Both these vills are in the Feldon.

On the basis of these calculations the peasant tenant population of the two hundreds where they can be compared, was in 1086 2,325, and in 1279 it was 4,317. This is an increase of 86 per cent, or alternatively expressed as a growth ratio 1.9:1. Though our particular figures differ, this is very close to Harley’s final calculation made in a second article published in 1964. His growth ratio of the tenant population from Domesday Book to the Hundred Rolls was 1.8:1 (his
Table 1  Population of Feldon and Arden Vills

<table>
<thead>
<tr>
<th></th>
<th>Population</th>
<th>Adding Vills south of the Leam</th>
<th>Total Population</th>
<th>Percentage increase</th>
<th>Growth Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Feldon Vills</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domesday Book</td>
<td>1785</td>
<td>164</td>
<td>1949</td>
<td>53</td>
<td>1.5:1</td>
</tr>
<tr>
<td>Hundred Rolls</td>
<td>2632</td>
<td>357</td>
<td>2989</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Arden Vills</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domesday Book</td>
<td>540</td>
<td>164</td>
<td>376</td>
<td>253</td>
<td>3.5:1</td>
</tr>
<tr>
<td>Hundred Rolls</td>
<td>1685</td>
<td>357</td>
<td>1328</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

absolute figures were 2,563 and 4,578 respectively.\textsuperscript{19} Comparing the two documents further he found that the increase had mainly been concentrated in the Arden/Stoneleigh area (a growth ratio of 3.9:1) while in the Feldon/Kinoton it had not been significant (1.1:1). Harley assumed that the area covered by the Warwickshire Hundred Rolls was broadly representative of the two distinct geographical regions of the county. Using J. C. Russell’s figures for the country in 1086 and 1377 he estimated the eve of plague population at about 68,000 and concluded that between 1086 and 1348 Warwickshire’s population had at least doubled and perhaps trebled (a growth ratio of 2.8:1). He was therefore able to suggest the upward trend of the population persisted into the early fourteenth century.\textsuperscript{20}

Regional variations: Arden and Feldon

According to my calculations the tenant population of Kinoton hundred in 1086 was 1,785 and in 1279 it was 2,632; in Stoneleigh hundred 540 and 1,685 respectively. But before these figures can be related to the Arden/Feldon division of Warwickshire, how the administrative divisions of the hundred correspond with the geographical and economic regions must be determined.

If the traditional boundary between the Arden and Feldon, that is the Avon valley, is taken, then Kinoton is completely in the Feldon apart from the outlying block of Tanworth, Packwood and Lapworth, but almost as much of Stoneleigh hundred lies south as north of the Avon. Thus only about half of the latter hundred would come within the Arden and then only on its southern fringes. A view which corresponds more to geographical realities is to take the six Stoneleigh hundred vills south of the river Leam, that is Bishops Itchington, Harbury, Whitnash, Radford Semele, Offchurch and Ufton, as having a Feldon character.\textsuperscript{21} This would correspond with the medieval view that the large parish of Stoneleigh which straddles the Avon was part of the Arden.\textsuperscript{22} Thus in order to use the recorded population to reflect the regional differences, the totals for the six Stoneleigh vills must be added to the total for Kinoton hundred and subtracted from the Stoneleigh totals. The results are shown in Table 1.
Table 2  Feldon vills showing tenant population decline 1086–1279

<table>
<thead>
<tr>
<th>Vill</th>
<th>Tenants 1086</th>
<th>Tenants 1279</th>
<th>% decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aistone</td>
<td>19</td>
<td>14</td>
<td>26</td>
</tr>
<tr>
<td>Brailes</td>
<td>145</td>
<td>134</td>
<td>8</td>
</tr>
<tr>
<td>Chadshunt</td>
<td>36</td>
<td>23</td>
<td>36</td>
</tr>
<tr>
<td>Compton Verney</td>
<td>47</td>
<td>45</td>
<td>4</td>
</tr>
<tr>
<td>Etvington</td>
<td>69</td>
<td>45</td>
<td>35</td>
</tr>
<tr>
<td>Farnborough</td>
<td>21</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Fenny Compton</td>
<td>46</td>
<td>32</td>
<td>30</td>
</tr>
<tr>
<td>Idlicote</td>
<td>36</td>
<td>28</td>
<td>22</td>
</tr>
<tr>
<td>Ilmington</td>
<td>86</td>
<td>64</td>
<td>26</td>
</tr>
<tr>
<td>Kineton</td>
<td>116</td>
<td>102</td>
<td>12</td>
</tr>
<tr>
<td>Pillerton Hersey</td>
<td>40</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>Pillerton Priors</td>
<td>41</td>
<td>33</td>
<td>20</td>
</tr>
<tr>
<td>Priors Hardwick</td>
<td>49</td>
<td>43</td>
<td>12</td>
</tr>
<tr>
<td>Radway</td>
<td>33</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>Whichford</td>
<td>64</td>
<td>55</td>
<td>14</td>
</tr>
<tr>
<td>Whitchurch</td>
<td>25</td>
<td>8</td>
<td>68</td>
</tr>
<tr>
<td>Wolford</td>
<td>49</td>
<td>38</td>
<td>22</td>
</tr>
</tbody>
</table>

The outcome of this is that Harley’s conclusion that the north of Stoneleigh hundred, on the fringe of the Arden (and not taking into account the growth of Coventry), was an area of ‘outstanding population increase’ stands, but that he underestimated the population increase in the south, the Feldon area. This is important because it casts into question his other conclusion that:

Apparently in this area (the Feldon) closely farmed and occupied in Domesday times, some equilibrium or point of saturation had then been reached between economic resources and population capacity at the local medieval level of technical initiative and skill, and was apparently maintained during the next two centuries...23

It is possible to exaggerate the number of settlements which actually declined in population in Kineton hundred between 1086 and 1279 as, I think, Harley did. Apparently some seventeen settlements have a reduced population at the latter date (see Table 2). But in ten of these cases it may well be that the Domesday Book figure is inflated by the population of a nearby or related settlement being included but its separate existence not acknowledged (see Table 3). For example, Priors Hardwick has a tenant population of 49 in 1086 and only 43 in 1279, but the neighbouring Coventry Abbey estate of Priors Marston is not mentioned in 1086. It may well have existed and its tenants been included with the total for Priors Hardwick because they formed one manor. By 1279 the tenant population of Priors Marston alone exceeded that of Priors Hardwick in Domesday Book, and their combined total was 148 tenants in 1279. This is an increase of 202 per cent on 1086, yet Harley uses Priors Hardwick as an example of a Feldon vill where the population declined. The intimate connection of the economies of the two vills is shown by the demesne at Priors Hardwick being five carucates (and possibly another two carucates, the endowment of the parish church and the
Table 3  Parishes of vills in Table 2 which show overall population increase 1086–1279

<table>
<thead>
<tr>
<th>Vills</th>
<th>Tenants 1086</th>
<th>Tenants 1279</th>
<th>% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atherstone with Ailestone</td>
<td>31</td>
<td>36 (22+14)</td>
<td>16</td>
</tr>
<tr>
<td>Brailes with Cheilmcote and Winderton</td>
<td>145</td>
<td>176 (134+15+27)</td>
<td>21</td>
</tr>
<tr>
<td>Chadshunt with Gaydon</td>
<td>36</td>
<td>50 (23+27)</td>
<td>39</td>
</tr>
<tr>
<td>Ettington with Fullready and Thornton</td>
<td>70</td>
<td>110 (45+44+21)</td>
<td>57</td>
</tr>
<tr>
<td>Kineton with Wellesbourne</td>
<td>116</td>
<td>209 (102+107)</td>
<td>80</td>
</tr>
<tr>
<td>Priors Hardwick and Priors Marston</td>
<td>49</td>
<td>148 (43+105)</td>
<td>202</td>
</tr>
<tr>
<td>Whichford with Ascott and Stourton</td>
<td>64</td>
<td>76 (55+21)</td>
<td>19</td>
</tr>
<tr>
<td>Whitchurch with Wimpstone and Crimscote</td>
<td>25</td>
<td>40 (8+32)</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: The Woldford figures (Table 2) show a decline of 22 per cent, but the 1086 figure is for Great and Little Woldford and the 1279 figures is for Little Woldford only. Radway also shows a decline of 27 per cent, but part of its tenant population was included in Burton Dassett in 1279, and therefore it may not have declined at all. The Whitchurch figure for 1279 (8) in tables 2 and 3 is almost certainly incomplete.

chapels of Priors Marston, Stoneton and Shuckburgh); at Priors Marston there is no demesne but a large number of serfs charged with heavy seasonal labour services similar to those of the serfs at Priors Hardwick.24

A parallel situation pertains at Chadshunt and Gaydon where the Bishop of Coventry is lord of both adjacent vills: the former vill has a demesne of six carucates, the latter no demesne. Both vills have serfs charged with three days a week work on the lord’s demesne throughout the year. Chadshunt had 36 tenants in 1086 and only 23 in 1279, but Gaydon, not mentioned in Domesday Book, has 27 tenants in the Hundred Rolls, a combined tenant population increase of 39 per cent.25 The royal manor of Kineton, even including its members of Little Kineton, Combrook and Brookhampton, looks as if it has suffered a decline in the two centuries, from 116 tenants to 102, but Domesday Book specifically includes with Kineton an estate at Wellesbourne for which there is no separate figure.26 By 1279 the two manors at Wellesbourne, no longer part of the royal estate, have a combined tenant population of 107, so the combined totals of Kineton and Wellesbourne show an 80 per cent increase on 1086.27

Only seven vills show a definite decline on the figures for 1086 with no compensating growth within the parish. Four of them, Idlicote, Pillerton Priors, Pillerton Hersey and Compton Verney, form a not quite contiguous group of parishes along the Fosse to the south and east of the Avon, though there would appear to have been more than compensating growth in the nearby parishes of Ettington, Wellesbourne (including the two Walton vills) and Halford (not mentioned in 1086). Ilmington in the same general area, though a detached portion of Warwickshire, has a reduced population even when the tenants at Foxcote (not in Domesday Book) and Compton Scorpion were added to the total. On the eastern side of the hundred, the neighbouring parishes of Fenny Compton and Farnborough show reductions in tenant population. In the area near the Fosse, Whatcote shows only a small increase (two) on 1086, and in the
### Table 4  Feldon vills showing tenant population growth 1086–1279

<table>
<thead>
<tr>
<th>Vills in Kineton Hundred</th>
<th>1086</th>
<th>1279</th>
<th>% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avon Dassett</td>
<td>27</td>
<td>43</td>
<td>59</td>
</tr>
<tr>
<td>Barford</td>
<td>19</td>
<td>30</td>
<td>58</td>
</tr>
<tr>
<td>Bishops Tachbrook</td>
<td>27</td>
<td>68</td>
<td>152</td>
</tr>
<tr>
<td>Butlers Marston</td>
<td>40</td>
<td>78</td>
<td>95</td>
</tr>
<tr>
<td>Charlecote</td>
<td>23</td>
<td>56</td>
<td>143</td>
</tr>
<tr>
<td>Chesterton</td>
<td>47</td>
<td>78</td>
<td>66</td>
</tr>
<tr>
<td>Honington with Broadmoor</td>
<td>53</td>
<td>71</td>
<td>34</td>
</tr>
<tr>
<td>Lighthorne</td>
<td>35</td>
<td>64</td>
<td>83</td>
</tr>
<tr>
<td>Long Compton</td>
<td>83</td>
<td>108</td>
<td>30</td>
</tr>
<tr>
<td>Mollington</td>
<td>9</td>
<td>20</td>
<td>122</td>
</tr>
<tr>
<td>Moreton Morrell</td>
<td>39</td>
<td>55</td>
<td>41</td>
</tr>
<tr>
<td>Newbold Pacey with Ashome</td>
<td>27</td>
<td>49</td>
<td>82</td>
</tr>
<tr>
<td>Ratley</td>
<td>31</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>Shuckburgh (in Marton Hundred)</td>
<td>23</td>
<td>33</td>
<td>43</td>
</tr>
<tr>
<td>Tysoe with Westcote and Hardwick</td>
<td>90</td>
<td>125</td>
<td>39</td>
</tr>
<tr>
<td>Walton in Wellesbourne Parish</td>
<td>60</td>
<td>70</td>
<td>17</td>
</tr>
<tr>
<td>Wasperton</td>
<td>21</td>
<td>33</td>
<td>57</td>
</tr>
<tr>
<td>Whatcote</td>
<td>26</td>
<td>28</td>
<td>8</td>
</tr>
<tr>
<td>Willington (in Barchester Parish)</td>
<td>11</td>
<td>41</td>
<td>273</td>
</tr>
<tr>
<td>Wormleighton</td>
<td>44</td>
<td>48</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vills in Stoneleigh Hundred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bishops Itchington</td>
</tr>
<tr>
<td>Harbury</td>
</tr>
<tr>
<td>Radford Semele</td>
</tr>
<tr>
<td>Ufton</td>
</tr>
<tr>
<td>Whitnash</td>
</tr>
</tbody>
</table>

**Note:** Feldon vills not listed in Domesday Book but included in the Hundred Rolls, with their tenant population in brackets: Cherington (34); Weston by Cherington (in Long Compton Parish) (23); Kingston by Chesterton (10+), Compton Wynates (26), Holford (47), Hunscombe (in Barchester Hundred) (12), Offchurch (37). Packwood (8) is also included in the Hundred Rolls, but is in a detached portion of Kineton Hundred in the Arden area.

east likewise Ratley and Wormleighton (two and four respectively). Wolford and Radway figures for 1086 and 1279 are not possible to compare with confidence (see note at end of Table 3); they may or may not have declined.

Two localised areas within the Kineton part of the Feldon show possible stagnation or decline, but it would be wrong to take them as representative of the whole region. Some Feldon parishes show considerable tenant population increases on 1086 (see Table 4): Bishops Tachbrook 152 per cent, Butlers Marston 95 per cent, Lighthorne 83 per cent, Burston Dassett (including its members) 69 per cent, Chesterton 66 per cent (excluding Kingston which is not in Domesday Book and largely illegible in the Hundred Rolls), Avon Dassett and Charlecote both 59 per cent, Tysoe (including Westcote and Hardwick) 39 per cent. So too do Stoneleigh hundred parishes which are more Feldon than Arden in character: Harbury 187 per cent, Ufton 105 per cent, Bishops Itchington 95 per cent,
Whitnash 50 per cent. Most other Feldon settlements show smaller percentage increases than these but even if they are approximately correct they call into question Harley's conclusion that by 1086 a balance between population and resources had been reached in the Feldon which was then maintained until the end of the thirteenth century. This may be true of only a limited number of settlements, more local than the Feldon in general. Overall the population of the Feldon had increased definitely, if not as spectacularly as in the Arden, and it cannot be proved that 'equilibrium' or 'point of saturation' had been reached even by 1279. It is not possible to be certain that the trend was either still upwards or stagnant.

Why eleven particular settlements in the Feldon had declined or stagnated is not clear. The soils of those settlements were, like most of the rest of the Feldon, based on Lower Lias heavy clay, easily water-logged in winter, deeply fissured in dry summers, and difficult to manage under almost continuous arable cultivation or short term pasture, once every two years (the two field system prevailed in south Warwickshire). The surface structure could easily be destroyed by the trampling of cattle and sheep and by 'puddling' by cultivation which accentuated the problem of drainage. Such soils can in favourable conditions today produce excellent crops of wheat or be used for permanent pasture, but this depends on careful management and the installation of effective drainage just beneath the surface. It is assumed that neither of these were available to the Feldon peasant in the medieval period. On the other hand it has been suggested that medieval practices and methods could sometimes avoid the problems of modern farming with its heavy machinery and intensive methods. Even with the climatic deterioration of the fourteenth century and the premium on the conversion of arable to pasture in the fifteenth century (often involving depopulation) the Feldon remained the granary of Warwickshire well into the seventeenth century, and a prosperous region in the eyes of contemporaries. John Leland, John Speed, William Dugdale and Daniel Defoe all bear witness to this. It was to be eighteenth century enclosure which made Warwickshire by 1800 'almost throughout a dairying county'. The distribution of market towns, which puzzled Harley, is related to the complementary nature of the economies of the two regions of Warwickshire before the eighteenth century. The Arden economy needed the markets to acquire produce in which it was deficient, particularly the surplus corn of the Feldon. The markets which prospered most and survived the economic contraction of the later middle ages were those best placed to facilitate the necessary interchange between the regions: Henley, Stratford, Warwick and Coventry.

**Population Density**

Harley also called attention to the equalisation of tenant population density between the two hundreds from 1086 to 1279. A 'regional re-adjustment of population densities' had taken place in the two centuries with 'a relocation of the chief centres of population away from the south' (the Feldon). Indeed 'if anything there was a tendency towards the ascendancy of the north' (the Arden). Harley subsequently had doubts that his methods might have exaggerated the regional contrast; particularly he had reservations about his
calculation of parish density figures. A different approach is to calculate the tenant population density for the whole area of Kineton hundred for which there is evidence, excluding those vills for which there are no figures. The area of Kineton hundred remaining is nearly 172 square miles (or 109,930 acres or 44,488 hectares). The tenant population of this area in 1279 was 2,624. This gives a tenant population density of a little over 15 per square mile (in 1086 it was approximately 11) or one tenant for every 42 acres of land or 17 hectares (arable and pasture). The overall average remains the same if the area and tenants of the six villages in Stoneleigh hundred south of the Leam are included in the calculations, though taken separately as a group they have a slightly higher tenant population density of 16 per square mile.

Equivalent figures for the remainder of Stoneleigh hundred are more tricky to calculate. Coventry, a city of at least 4,000–5,000 inhabitants in 1279 must be excluded of course, and so too the seven hamlets around Coventry which did not have an independent parochial or economic existence from the city. This leaves in Stoneleigh hundred settlements in the Arden with a total tenant population of 1,240 in an area of nearly 70 square miles or 44,605 acres or 18,051 hectares. This gives a tenant population of 18 per square mile (in 1086 it was approximately 7) or one tenant for every 36 acres of land or 14.5 hectares. These calculations bear out Harley's conclusions as to the tendency of the north of the area to be more densely populated in 1279 than the south although the high density revealed by the Hundred Rolls may not be applicable to the Arden generally, but only to the area close to Coventry, which may well have been on the verge of a boom period. In addition the problem of the relation of the recorded tenant population figures to actual numbers remains. If many of the villein holdings in Kineton hundred were 'mere tenurial units', and there were numerous unrecorded sub-tenants or 'undersettles', the contrast might not be so great. As has been seen, the Hundred Rolls hint that there were such in Kineton hundred.

The problems of how far lists of holdings reflect tenurial reality and how large the propertyless underclass was may well be insoluble, but the Hundred Rolls as a source for the first problem should not be undervalued. They list at least some sub-tenants unlike most manorial documents, and, with the exception of manorial court rolls and tithing lists, penetrate further into peasant society than most other surviving royal or seigneurial documents, taxation and tallage rolls for example. The Lay Subsidies of 1327 and 1332 record as individuals less than half those recorded in Kineton Hundred in 1279 (47 per cent in 1327) and just over one third of those in Stoneleigh (37 per cent in 1327). There may have been some population decline in the intervening period, especially as a consequence of the Great Famine of 1315-1317, but the discrepancy cannot be as great as the figures indicate. A tallage list of the abbot's tenants on his manor of Stoneleigh in 1305 enumerates 133 payers: in the equivalent area the abbot has 223 tenants recorded in the Hundred Rolls.

A comparison of the Hundred Rolls with the Lay Subsidy of 1327, however, does suggest that the peasants of the Feldon were more prosperous than those of the Arden. As the percentages of taxpayers above shows, fewer tenants were exempt from taxation in Kineton hundred than Stoneleigh (the exemption point was
having movable goods of less than 10s in value). It is assumed that the capacity to pay tax is an indication of wealth, though other factors may be involved, corruption of the tax collectors, underassessment, perhaps even a deliberate selection by the assessors of rich, middling and poor in the vill.\textsuperscript{39} In the assessment of 1334 the average assessment per taxation vill in Kineton hundred was almost twice the average in Stoneleigh.\textsuperscript{40} But perhaps the more outstanding feature of the comparison, though slightly exaggerated if there had been a decline in population between 1279 and 1327, is the high proportion of the peasantry, 57 per cent overall taking both hundreds together, too poor to pay tax, that is assessed as not having moveables of 10s in value, and the exemption is unlikely to have been a generous one.

**Conclusion**

Whatever the limitations of the evidence for the population history of Warwickshire some conclusions become clear. The growth of the eleventh to thirteenth centuries and subsequent decline did not alter the basic economic character of the country: its division into two regions, distinct but whose economies complemented each other. The contraction also thinned out some settlements, particularly the Feldon. In Kineton hundred some were former main settlements in their parishes in 1279, for example Charlecote, Chesterton, Compton Verney, Burton Dassett, Wormleighton. But more often they were secondary settlements in the parish, such as Bradmore in Honington, Brookhampton in Kineton, Hardwick and Westcote in Tysoe, Kingston in Chesterton.

Altogether ten main settlements became deserted, as well as seventeen which were probably in origin secondary settlements. This is 36 per cent or over one third of the settlements in Kineton hundred, but the majority of these were not the largest vills. There is something of the retreat from the margin in this, though it may not have been from inferior soils but more of a withdrawal to a nearby, still populous parochial centre.

Ultimately, the settlements in Kineton hundred give some support to the Postan thesis, though not necessarily with the population - resources crisis coming as early as he claimed. For the Arden settlement, at least that area of it near Coventry, the thesis is irrelevant. What this study indicates, as Barbara Harvey has suggested, is 'the primacy of regional and local factors' in understanding medieval population change.\textsuperscript{41}

**NOTES**

I would like to thank Mr Tom Arkell for all his help in making this article presentable.

3. Stoneleigh, a hundred in Domesday Book, later became a sub-leet of Knighlow hundred.


7. Philip Morgan, however, believes ‘it is probably wise to think of these listings of people rather as holdings than individuals, heads of household or families’ (P. Morgan, Domesday book and the local historian, (London, 1988), 22–3). If he is right, my reduction of holdings to tenants would not be necessary.


12. Warrington, Arlescote, Kingston, Shotteswell and Bruton.


18. John, The Warwickshire Hundred Rolls, 293.

19. J. B. Harley, ‘The settlement geography of early medieval Warwickshire’, Transactions of the Institute of British Geographers, 34 (1964), 117. Part of these larger figures may be the result of some double counting, Harley not allowing for the repetition of entries in the Exchequer manuscript in Stoneleigh Hundred between folios 45–51 (John, The Warwickshire Hundred Rolls, 8–9).


35. I have taken the parish acreages from Francis White & Co., *History, gazetteer and directory of Warwickshire*, (Sheffield, 1850) on the assumption that they were closer to the medieval areas than those given in the *Victoria county history of Warwickshire*, II (London, 1904), 187–92.


RESEARCH IN PROGRESS

“SHOOTING THENETS”: A NOTE ON THE RELIABILITY OF THE 1881
CENSUS ENUMERATORS’ BOOKS

Matthew Woollard

The enumeration of fishing vessels in the late-nineteenth century censuses was
generally a complicated process.\(^1\) The enumeration of the fishermen in the Isle of
Man in 1881 was no exception. 531 fishermen were accidentally enumerated
twice, giving the impression to readers of the published report for Islands in the
British Seas that the population of the Island had increased by 0.1 per cent since
the previous census, whereas it had decreased by 0.9 per cent.\(^2\) The population as
recorded in original was 54,089 whereas “actual” population was 53,558. This
double enumeration was only discovered once the report had been printed and
rather than have the whole document reprinted the Census Office (CO) inserted
an errata slip into the volume.\(^3\) Given that the original volumes are scarce and
that the facsimile reproductions published by the Irish University Press does not
contain this slip it is possible that this error has gone largely unnoticed.\(^4\)

The purpose of this note is not to chide the CO for not spotting the error sooner
but to dwell on the possible causes of the error and implications affecting the
information given in the census. The fact that a number of people were
enumerated twice allows us to assess the relative reliability of a very small
section of the census.

The enumeration for the Isle of Man would have been similar to that on the
mainland, though the Manx authorities conducted the enumeration itself,
passing the returns to the Census Office for abstraction.\(^5\) It was made more
difficult because a number of inhabitants were in Irish waters at the time of the
Census and special arrangements had to be made to include them in the
enumeration. Indeed, the enumeration was done by at least three groups of
people. First, ordinary enumerators delivered schedules to householders (and
collected them). Second, officers of H. M. Customs enumerated those on board
ship. Third, 2,022 fishermen who had sailed from Peel (1,256) and other ports
(766) during March for the mackerel fishery at Kinsale, off the south coast of
Ireland, were specially enumerated.\(^6\) As these three enumerations were not
carried out simultaneously there was scope for error.

Those fishermen who were enumerated twice were part of the group of
fishermen who had gone to Kinsale, but as the Census Report does not alter the
figures for those at Kinsale, we must assume that they were at Kinsale on Census
night. How then were they able to be enumerated at home as well? The most
plausible suggestion is that they were at home on census night, Sunday 4 April 1881, but left very soon after midnight, simply explained by the fact that many Primitive Methodists and Wesleyans would not work on Sundays. The time of departure would not be unusual as the boats often left on the night tide in order to travel down the Irish coast in daylight. Th.us they completed their schedules at home, whilst on their return from Kinsale were enumerated at their port of arrival, so long as they returned before 3 May which was the cut-off date for the enumeration of vessels.

What is particularly odd is that these boats were enumerated as having 540 people on board while only 511 can be traced back to dry land. Of course it is possible that some crew changed boat while at Kinsale, i.e. arrived there before census day and changed boat before the Peel boats were enumerated at Kinsale, but this is unlikely given the close-knit community and the arrangements on board ship. It should perhaps be noted that though these boats contained 540 men only 531 were deducted from the census.

The 511 ‘pairs’ of fishermen are those used for further investigation in the remainder of this note. These 511 links were made by sorting the database version of the whole of the Isle of Man, and manually selecting the best fit. 29 people were not able to be matched – presumably they were recorded only once. No people with similar ages or names could be found on the entire island – all 511 matched had their homes in the town of Peel.

All bar six of the matched pairs had identical marital status. Four were boarders or lodgers (two lodgers were married at home and single at sea, the two boarders vice versa). Given that ‘respectable’ lodging houses might not take unmarried men, some deception might be necessary. Two others are more confusing and might represent false matching.

The ages of these matched pairs varied only slightly, which may have been as a result of selecting the pairs to find the person with the closest attributes. 20 people gave a higher age on board ship than at home, while 13 gave a lower age (see Table 1). One might have assumed that younger men would be more likely to give a higher age on board ship than at home but the age distribution of those giving different ages above and below the line are similar.

The other repeating information given relates to occupations. Occupations are much harder to interpret than either marital status or age. The main concern here is the synonymous use of the phrases fisherman and mariner. According to the Oxford English Dictionary a mariner is “one who navigates or assists in navigating a ship; a sailor, seaman; in law the term includes all persons employed on ships.” A fisherman, on the other hand is one who catches fish. The published occupational tables for the Isle of Man distinguish these two occupations, but for this note they will be treated as identical occupations.

I have chosen to categorise the two occupations given by the people enumerated twice into four groups: (I) those that are described as fishermen (or mariners) in both enumerations; (II) those that are described as fishermen (or mariners) at sea
Table 1  Difference of age at home to age at sea

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less</td>
<td>-5 or more</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>-4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>-3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>-2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>-1</td>
<td>10</td>
</tr>
<tr>
<td>Equal</td>
<td>0</td>
<td>478</td>
</tr>
<tr>
<td>More</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>5 or more</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>511</td>
</tr>
</tbody>
</table>

**Note:** This table should be read as 1 person was enumerated as being four years younger at home than at sea.

Table 2  Numbers and percentages in four occupational-match categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>466</td>
<td>91.2</td>
</tr>
<tr>
<td>II</td>
<td>13</td>
<td>2.5</td>
</tr>
<tr>
<td>III</td>
<td>9</td>
<td>1.8</td>
</tr>
<tr>
<td>IV</td>
<td>23</td>
<td>4.5</td>
</tr>
<tr>
<td>Total</td>
<td>511</td>
<td>100</td>
</tr>
</tbody>
</table>

**Note:** See text for definition of categories.

but by a different job at home; (III) those that are described as fishermen (or mariners) at home and something else when at sea. The fourth category (IV) refers to those who had identical occupations, but were not described as fishermen.

As with age, over 95 per cent of those matched had synonymous occupational descriptions (groups I and IV), suggesting that at least internally the enumeration of these people was reliable (see Table 2). The main cause for the discrepancies is probably the fact that the subjects did not complete the schedules themselves. Responsibility for completing the schedules usually lay with the head of household, or the captain of the vessel. Those subjects that had discrepant occupations may only have been privy to the completion of one (or neither) of the schedules relating to them.

Given that there is a very high similarity between the two sets of information about the same people, one would like to suggest that the enumeration of
vessels, though difficult, was at least as reliable when it came to collecting details of those people on board vessels. What is unknown, and will remain unknown is the number of vessels which escaped enumeration.

Finally, one caveat. While attempting to find links between people on board vessels from Peel and their counterparts on land, other possible links between people on board vessels from other parts of the Isle of Man and their counterparts on land have also been made. We can be sure that the CO did not include these people in their correction but further work should be completed before making any further claims about the reliability of the absolute figures presented.11

This note has highlighted a high level of internal consistency in two ‘simultaneous’ censuses, but it has also shown that some inaccuracy was able to creep into the CEBs, probably through a combination of individuals not giving details themselves or through careless copying by the enumerators. The most worrying conclusion is perhaps in the variation in occupational terminology, which reminds us that occupational classification must be context-driven. The 1881 Census Office occupational classification scheme separates fisherman and mariners, and though elsewhere in the country there may be a difference between these titles it is clear that all those at Kinsale were involved in catching fish.

NOTES

This research note is based on work performed on the machine-readable version of the 1881 Census Enumerators’ Books. Genealogical Society of Utah, Federation of Family Historians, 1881 Census for Great Britain [computer file]. Colchester, Essex: The Data Archive [distributor], 29 July 1997. SN 3643. I am grateful to Ms Frances Coakley for her comments on a draft version of this note and for help on references on the history of the Isle of Man.

2. 1881 Census England and Wales, Islands in the British seas, BPP 1883, LXXX.707, [C. 3643]
3. All users of the census reports should be aware of the possibility of published errata. Apart from the sheet found tipped into the Islands report, the 1881 Census Report contains a substantial errata section. See 1881 Census England and Wales, Ages, condition as to marriage; occupations and birthplaces of the people, BPP 1883, LXXX.1–, 529–31.
4. For example Chambers’s encyclopaedia (London and Edinburgh, 1895) gives the incorrect population. However, A. W. Moore’s History of the Isle of Man (vol. 2, Douglas, 1900, repr. Douglas, 1992) gives the correct figure, 646.
5. Higgs, Clearer sense, 25.
6. BPP 1883, LXXX.707, 4.
7. [F. Palmer?], Old Peel (Peel, c.1958), n.p. (This volume contains a selection of articles reprinted from the Peel City Guardian.)
10. The enumeration of those at Kinsale did not include the place of birth.
11. A further Manx idiosyncrasy has recently been reported by B. Lawson, ‘Which 1851 Census?’, Journal of the Isle of Man Family History Society, 19 2 (1997), 48–9, which suggests that the Manx authorities had a second copy of the 1851 CEBs made before despatching schedules and CEBs to London, as one copy excludes some of the population of Douglas. (I am grateful to Frances Coakley for this reference.)
LOCAL COMMUNITIES IN THE VICTORIAN CENSUS ENUMERATORS' BOOKS

Edited by Dennis Mills and Kevin Schürer
LOCAL COMMUNITIES
IN THE VICTORIAN CENSUS
ENUMERATORS’ BOOKS

The census enumerators’ books (CEBs) form one of the key documentary sources for the study of the Victorian period. The value and lasting appeal of the CEBs is very much a result of their ubiquitous nature. Census material addressing a wide range of demographic, social and economic issues can be found for virtually every parish and settlement in the country. Moreover, given that information is obtainable on named individuals, together with the families and households in which they resided, the CEBs form a central core to local, community-based studies for the Victorian period.

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WOMEN’S NAMES: SOME PROBLEMS FOR RECONSTITUTION ANALYSIS

Pamela Sharpe

In England, we are used to the tradition of women changing their name at marriage and abandoning use of the paternal family name in favour of their husband’s name. While this appears to have been a cultural norm throughout the period when we are able to use parish registers for reconstitution purposes, there are instances where this name change did not occur and also when it occurred without a marriage having taken place. During completion of a ‘total reconstitution’ of Colyton in Devon, I was able to follow through the lives of some well recorded women quite closely and identify the reasons for this.

While the burial of a woman with her maiden name may indicate singlehood, this was not necessarily the case. In the seventeenth century when marriage age was late, death rates high and remarriage chances for women extremely low in the parish of Colyton, marriage was sometimes a very short lived episode in a woman’s life and her ‘town’ identity appears to have remained with her maiden name. Several instances of widows who had once been married being referred to by their maiden name can be found in the Colyton record. For example, Alice Paul was born in 1632 and came from a family who were often in receipt of poor relief. When she was thirty two she had an illegitimate son. She married in 1670, at the age of thirty eight, to William Zalway, and bore him one son in 1673. Her husband died in 1679. In the 1682/83 list of those in receipt of poor relief she appeared as Alice Paul.¹ There is no evidence that women whose husbands were still alive when they died were buried with their maiden names.

Similarly, women who were separated from their husbands often reverted to using their maiden names. The separation of Rose and George Farrant, who married in 1742, is well documented in Colyton’s poor relief records.² By the 1760’s, when George was still alive but not living with Rose and their children, she was known as Rose Ford, her maiden name. Conversely, women in common law relationships would generally adopt their partner’s surname. An overseer’s letter of 1801, concerned the common law marriage of Hannah and William Harvey who had two daughters.³ Hannah called herself ‘Harvey’ even though she was married to John Lugg in 1787 and had had four children with him. Mary Anning was referred to as ‘Mary Facey’ in the 1820s when she had two children with John Facey.⁴

This flexible use of surnames presents some linkage problems, for the reconstitution process. In the case of a return to the use of the maiden name for example, the likely result is the production of two FRFs (Family Reconstitution Forms) for the same woman, one with her birth and marriage details, the other with her burial date but no earlier life history. At the same time, these naming
practices give an interesting picture of how women were viewed by society. The examples of women reverting to use of their maiden names have all been drawn from seventeenth and early eighteenth century records. This was a period when, the demographic and economic details suggest, the single woman was a common figure in Colyton. As marriage became more usual, and was undertaken at an earlier age, for those who did not marry but lived with their partner, the practice of taking his name may have become more frequent. This is speculative, but what is certain is that name labels are significant indicators about how people viewed themselves and how others viewed them.

NOTES

1. Feoffees records 14/9a-b.
2. Devon Record Office 3483A/PO13 Overseers Account Book 1740–1770.
3. Devon Record Office 3483A/PO45 Miscellaneous correspondence 1798–1835.
4. Feoffees records 17/3 Accounts of feoffees funds 1825–1885.
CRITICAL EFFECTS OF MALNUTRITION DURING PREGNANCY

Susan Scott, S.R. Duncan and C.J. Duncan

We read with interest in the recent issue of Local Population Studies the account of the current work of the Cambridge Group concerning the steady and substantial rise in marital fertility during the period c.1680 to c.1810 which was, surprisingly, most marked in older women who had been long married. It is concluded that it is probable that this change was not due to any change in the rate of conception but rather to a reduction in the numbers of stillbirths associated with the loss of life in the third trimester of pregnancy.

We look forward to reading the detailed arguments on which this hypothesis is based. We have no direct information about the frequency of stillbirths during the long eighteenth century, but these findings are in accord with our work on the effects of an inadequate nutrition during pregnancy. Penrith, lying in the Eden Valley, Cumbria, was a community living under marginal farming conditions which was susceptible to mortality crises in the late sixteenth and early seventeenth centuries. We have completed a family reconstitution study for this parish and have shown that the average marital fertility ratio over the period 1557-1812 was lower than that recorded for other historical populations. The distinguishing characteristic of fertility at Penrith is the marked subfecundity of women aged below 25 years and we have suggested that this is indicative of nutritional deprivation. A late age at menarche, a higher amount of pregnancy wastage, a longer period of premenopausal subfecundity and an earlier age of menopause are associated with a longer period of adolescent sterility, and a higher frequency of nutritional amenorrhoea is found when food supplies are marginal. This pattern is common among poor populations of many developing countries today.

Conditions at Penrith gradually ameliorated during the seventeenth century and the population enjoyed a halcyon period during 1700-1750, with a population boom after 1750. Table 1 shows that, overall, the low fertility rates varied little with time, but the age-specific marital fertility for women of 40 to 49 years did rise quite markedly during 1700-1749 (in comparison with 1650-1699) although, paradoxically, it fell again during the population boom after 1750. We have shown that this marked rise in population at Penrith was primarily linked to a progressive improvement in infant (and later in child) mortality and not to any change in fertility, as shown in Table 1.

We have explored in detail the subtle effects of malnutrition during pregnancy by an analysis of the mortality crisis of 1623 at Penrith which was caused by the coincidence of high wheat and low wool prices. Cycles in infant mortality were significantly correlated with cycles in wheat prices, which are regarded as a
Table 1  Age-specific marital fertility at Penrith (per 1,000 women-years lived)

<table>
<thead>
<tr>
<th>Age groups</th>
<th>15–19</th>
<th>20–4</th>
<th>25–9</th>
<th>30–4</th>
<th>35–9</th>
<th>40–4</th>
<th>45–9</th>
<th>Total marital fertility rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1557–1599</td>
<td>187</td>
<td>319</td>
<td>312</td>
<td>309</td>
<td>256</td>
<td>77</td>
<td>93</td>
<td>7.8 6.8</td>
</tr>
<tr>
<td>1600–1649</td>
<td>186</td>
<td>270</td>
<td>321</td>
<td>263</td>
<td>201</td>
<td>112</td>
<td>34</td>
<td>6.9 6.0</td>
</tr>
<tr>
<td>1650–1699</td>
<td>196</td>
<td>320</td>
<td>321</td>
<td>230</td>
<td>229</td>
<td>94</td>
<td>14</td>
<td>7.0 6.0</td>
</tr>
<tr>
<td>1700–1749</td>
<td>234</td>
<td>299</td>
<td>317</td>
<td>301</td>
<td>249</td>
<td>164</td>
<td>64</td>
<td>8.1 7.0</td>
</tr>
<tr>
<td>1750–1812</td>
<td>211</td>
<td>269</td>
<td>286</td>
<td>272</td>
<td>223</td>
<td>128</td>
<td>35</td>
<td>7.1 6.1</td>
</tr>
<tr>
<td>1557–1812</td>
<td>211</td>
<td>291</td>
<td>307</td>
<td>275</td>
<td>230</td>
<td>114</td>
<td>45</td>
<td>7.4 6.4</td>
</tr>
</tbody>
</table>

measure of the availability of food to this community and to pregnant and nursing mothers in particular. Analysis of events around 1623, using the family reconstitution study, support the hypothesis that neonatal mortality was related to malnutrition during pregnancy, whereas post-neonatal mortality was primarily dependent on exogenous causes (particularly inadequate levels of nutrition) during the first year of life. The interesting fact to emerge from this study is that malnutrition exerted the most severe effects during the last trimester of pregnancy, a finding that agrees with the study of the effects of famine during the well-documented Dutch hunger winter between September 1944 and May 1945.

A sharply fluctuating food supply could produce another exacerbating and paradoxical effect on infant mortality, particularly in the poorer classes. A large and potentially beneficial placenta could be built up early in pregnancy with good nutrition following a good harvest but, if this were rapidly followed by a sharp reduction in food supply, the large placenta would deprive the developing foetus of adequate nutrition. This would imply that, under these particular conditions with a large placenta, the foetuses exposed to inadequate nutrition during the second and third trimesters would be more severely disadvantaged than those that were exposed during the first three months in utero.

Studies of Third World countries have shown that where maternal undernutrition prior to and during pregnancy is compromised, rates of low birthweight infants and stillbirths tend to be high. An analysis of the affect of the mean weight gain in pregnancy has shown that women in three developing countries (Thailand, Philippines and the Gambia) gained the least weight in pregnancy and had the lowest birthweight infants when compared with women of developed countries (Scotland and the Netherlands). Women in Bangladesh, who are among the most poorly nourished in the world, had a significantly lower mean weight at all stages of pregnancy when they had either a stillbirth or an infant death compared with women in Britain, Kenya and India. Of particular interest, is the observation that women who themselves were born with a low birthweight had a 2.5 times greater risk of an abnormal pregnancy.
This suggests that a reduction in the rate of infant mortality and in the risk of stillbirths for historic populations might not be expected until there was a sustained improvement in the nutritional status and in weight gain prior to and during pregnancy of mothers of the preceding generation. We believe that this may have occurred in Penrith when, during the period 1700 to 1750, an amelioration in the effect of high wheat prices, led to better nutrition for mothers who conceived during this period and, consequently, in the birthweight of their daughters who then produced the next generation who experienced a marked reduction in the rate of infant mortality.

We conclude that fluctuating nutritional levels, particularly during the third trimester of pregnancy, could make a major contribution to stillbirths in historic populations, as reported by the Cambridge Group, even when these were not living under marginal conditions.

Recent work, again in Third World countries, has also highlighted the importance of a recuperative interval for the mother between the end of lactation and the beginning of a subsequent pregnancy. When the two overlap, there is a risk of depletion of nutrient stores for the mother and of growth retardation of the foetus. A longer period between pregnancies is often found for older women and is assumed to be the response to a reduction in coital frequency as the result of marriage duration and the level of sexual activity. Data from the Demographic and Health Surveys of women of 18 countries in the late 1980s has found that coital frequency was stable for ages 15 years to the mid-30s but then declined substantially to age 49. The longer the period of recuperation between births, the greater would be the reduction in the risk of maternal depletion and of foetal malnutrition and of low birthweight infants and stillbirths.

These studies have led us to investigate the effects of short birth intervals on infant mortality at Penrith, 1600 to 1800, and our current work has emphasised another effect of maternal depletion. There is a significantly increased risk in the first or second year of life of children whose mothers quickly had another pregnancy which probably impaired breastfeeding of these earlier offspring.

Malnutrition in pregnancy had other subliminal, and hitherto undetected, effects on deaths from infectious diseases in very young children. Time-series analysis of mortality records, show that cycles of deaths from measles (London, 1647 to 1837), scarlet fever (England and Wales, 1847 to 1880) and whooping cough (London, 1701 to 1812) were significantly correlated with cycles in wheat prices but with a lag of two years and we conclude that an inadequate diet during pregnancy, particularly among the poorer classes, produced a greater susceptibility and increased the likelihood of dying in the next epidemic in the subsequent children.

NOTES

2. S. Scott and C. J. Duncan, 'Marital fertility at Penrith, 1557-1812 — evidence for a malnourished
6. Scott, Duncan and Duncan, 'Interacting effects of prices'.
11. D. J. P. Barker, personal communication
Surveying the People

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Editors' note

LPS readers are reminded that the editorial board is always prepared to offer advice on subjects within the scope of LPS. Sometimes queries which have been raised are discussed in print in this section of the journal but there are many others which are not published, so if you think we can help do not hesitate to contact us.

Early Protestant Returns

Dear Sir,

Articles (for example, see Anne Whiteman’s article in LPS 55, Autumn 1995 and no. 56, Spring 1996) on the Protestant Returns make reference to the government’s attempts to enforce the Protestant throughout the country in the late spring and early summer of 1641. Early returns were made for some London churches and various churches and various parishes in Cornwall, Westmorland, Essex and Kent. To this list needs to be added the parish of Radcliffe, Lancashire.

Whilst transcribing the Lancashire returns I came across the following:

Maij 30 1641

Memoram that according to ye directions of ye house of Comons bearing date ye first of 'May' for ye taking & acknowledging of a ptestatio By ym comitted to such as will volutarily take & acknowledge ye same Wee ye inhabitants of ye pish of Radcliff whose names are subscribed did take a voluntary oath uppo the holy evaneglist for our pformance thereof. And likewise wee ye said inhabitants uppo a second motion from ye house of Comons took ye same ptestation againe ye 27 of February 1641 & wee ye Rector Churchwardens overseers wormme & Cuñstables, know not of one man in or pish but hath taken the ptestatio

Pet Shaw ibid Recor

Your readers may be interested to learn that the Lancashire Returns will be published by the Lancashire Family History and Heraldry society, possibly during 1998 or 1999. Due to the size of the Lancashire Returns the final
publication will be in two volumes:

    Volume 1 containing the Amounderness, Blackburn and Leyland hundreds (236 pages);
    Volume 2 containing the Salford and West Derby hundreds (199 pages).

Returns for some townships contain a high proportion of women's names – in some cases nearly 50 per cent.

If anyone wishes to be informed as to when these returns will be published, they should write, enclosing a stamped addressed envelope, to:

    Stan Hazlewood, Publications Officer – LFH&H, 26 Wray Crescent, Ulnes, Walton, Leyland. PR5 3NH

Yours sincerely,

    G.A. Foster
Gypsies Travelling