

**A RAVELLED SKEIN: THE SILK INDUSTRY IN  
SOUTH WEST HERTFORDSHIRE 1790 – 1890**

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# **A RAVELLED SKEIN : THE SILK INDUSTRY IN SOUTH WEST HERTFORDSHIRE 1790-1890**

## **ABSTRACT**

Cotton and wool have long dominated studies of the English textile industries, relegating silk manufacture to no more than a minor role in the British economy. Regional studies have likewise tended to concentrate upon areas dominated by a single feature or single industry. This thesis aims to address the economic and social impact of a silk industry established in the predominantly rural area of South West Hertfordshire. Here the indigenous population had other opportunities for employment, agricultural labour of various kinds forming the greatest occupational group. The straw plait absorbed female and child labour in the districts of Berkhamsted and St Albans, in direct competition to the silk mills, while the rag factories supplying the paper industry offered competition to the silk mills of Watford and Rickmansworth.

Any industry dependent upon imports is especially vulnerable to external pressure, and an overview of the national situation regarding the silk industry in England, and of the particular problems besetting manufacturers during the late eighteenth and nineteenth centuries, is therefore essential to an understanding of the situation in the rural semi-industrial districts. The chapters of this thesis therefore follow the story of silk production from the wider context of the national industry to the specific mills of Hertfordshire, asking first, why the establishment of an English silk industry was so important. Themes explored in later chapters are already discernible in the early history of the silk industry: the high involvement of women; the apprenticeship of children; the interventionist role of government; and the problem of the poor.

The extent to which these factors impinged upon the relationship between master, worker, and the local district, and ultimately upon the viability of the Hertfordshire mills, form the central core of this study.

..... an innocent luxury was rendered the source of a productive industry, which replenished and augmented the public and private wealth out of which it grew. It fed its thousands. It is now starving its thousands. Many of the principals engaged in it are closing their business, some from prudence, others from compulsion. The workmen and their families are pining with famine, and charity is forced to furnish a miserable subsistence, inadequate to the wants of nature, to those whom their industry lately maintained in competence and in health.<sup>1</sup>

*Some Points in the Question of the Silk Trade 1826*

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<sup>1</sup> *Some Points in the Question of the Silk Trade : a letter addressed to the Right Hon. George Canning MP.* Subscribed 'One who is no enemy to Free Trade on Just Principles' 18<sup>th</sup> Feb. 1826. Pamphlet: W. Baynes & Son, Paternoster Row.



South West Hertfordshire

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## ABBREVIATIONS

BRO	Buckinghamshire Record Office
CWA	City of Westminster Archives
HALS	Hertford Local Studies Library
HRO	Hertford Record Office
IHR	Institute for Historical Research
PP	British Parliamentary Papers
RHS	Rickmansworth Historical Society
VCH	Victoria County Histories
WBC	Watford Borough Council Offices
WCL	Watford Borough Central Library

## CHAPTER 1. INTRODUCTION

It has been justly remarked by one of the first manufacturers in the kingdom, that in large towns..... it is no easy task to determine the effect of each particular kind of employment. The pure unmixed effect of factory labour will be best and most easily found in the country ~ where it affords regular employment during a series of years to the same families ~<sup>1</sup>

*Andrew Ure 1835*

James Tyers was a silk throwster, born in Watford, who spent his adult working life in the mills, and the last years of his life in the workhouse. His [step] daughter Mary and younger brother Charles were also silk throwsters, and his nephew James, a silk spinner. Joseph and Sarah Flower both worked in the silk mills, as did their daughter Amelia, but as Joseph progressed from throwster, to clerk, to 'time keeper' at the mill, Sarah moved from throwster, to winder, to charwoman. Mary Berry was an illegitimate child sent from a London parish to work at St Albans, and returned thence by her employer as unfit for the work. Mary Ann Aldridge, sent to Tring mills as a child of 11, remained in the district after the term of her apprenticeship, marrying a gardener. She did not continue to work in the mills, but took in lodgers to supplement the family income.<sup>2</sup>

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<sup>1</sup> Ure, *The Philosophy of Manufactures : or, an exposition of the Scientific, Moral, and Commercial Economy of the Factory System of Great Britain*. p. 342 .

<sup>2</sup> James Tyers: Census 1851:           Census 1851 Oxhey Sched. 35 District 2b  
   Census 1861 Oxhey Sched. 24 District 7b  
   Census 1871 Oxhey Sched. 15 District 8  
   Census 1881 Watford WH.

Joseph and Sarah Flowers :       Census 1851 Oxhey Sched. 18 District 2b  
   Census 1861 Oxhey Sched. 21 District 7b  
   Census 1871 Oxhey Sched. 19 District 8

Mary Berry : Letters of Charles Woollam to the Vestry of St Margarets Westminster Jan. 1804  
 CWA E3338

Mary Ann Aldridge/Reeve : *Minutes of the Proceedings of the Governors of the Poor* : St  
 Margarets Westminster 1850-51. 16 Jan. 1851 p.218; 23 Jan. 1851 p.233 CWA E5219  
   Census: Tring 1871 Sched. 33 District 11  
   Census: Tring 1881 RG11/144 1449 6 5  
   Census: Tring 1891 Sched. 20 District 11

The stories of these people, and of several hundreds like them, lie at the heart of this study. Their livelihoods depended upon the profitability of the local silk mills which depended in their turn upon fashion, upon the state of international trade, and above all, upon government policy. Employment in the silk industry was notoriously insecure, so were these people more or less susceptible to the vagaries of fortune than their neighbours? Great controversy raged over both the ethics and the practicalities of employing large numbers of women and children in the new factories, but were these concerns reflected here in Hertfordshire, where women and children already worked long hours straw plaiting, rag cutting, or occasionally, as in Buckinghamshire, at lace making. How did the life experience of rural industrial workers differ from that of their neighbours working in other trades? Dismissed as a rural county, has Hertfordshire's reliance upon agriculture been over-estimated and the industrial contribution to the local economy severely under-estimated? Did the mills here really afford, as Ure suggests, 'regular employment during a series of years to the same families', and what other work opportunities were available? Using both quantitative analysis to show the underlying trends, and qualitative evidence to tell particular stories, the prime aim of this study is to explore the place of the silk mills and the lives of the people connected to them, in the context of both the silk industry as a whole and of rural industry in the county of Hertfordshire.

### **The Nature of the County**

Hertfordshire is one of the landlocked 'home counties' of England, famously agricultural in character, and strongly focused on London.<sup>3</sup> Both these features had been long acknowledged, the historian Simpson writing in 1745:

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<sup>3</sup> Despite such strong and long-standing links to London, however, it has been remarked by Lionel Munby that the Hertfordshire dialect is a form of midland, rather than southern or eastern English. Munby, Lionel M. 1968. 'The Landscape of Hertfordshire' *Hertfordshire Past and Present* No.8. p.5



As there is little or no manufacture in the Shire, which is full of Maltsters, Millers, Dealers in Corn etc., so the Trade would be inconsiderable, were it not for its being every Way a great Thorough-fare, and for its Neighbourhood to *London*, which makes the chief Market-Towns to be much frequented for the Sale of Wheat and Barley, and all sorts of Grain, not only the Growth of this but several other Shires.<sup>4</sup>

Even on a modern map it is noticeable that virtually all major roads traversing Hertfordshire flow fanwise from the central axis of London. As witnessed by the many linear towns and villages built along the main highways<sup>5</sup> Hertfordshire was heavily dependent upon the custom of travellers, and it was therefore essential to maintain good communications to and from the capital, the western ports, and the industrial north, for the transport of both people and commercial goods.<sup>6</sup> The Grand Junction Canal proved an important adjunct to the Hertfordshire economy, covering a distance of some 90 miles from Braunton in Northamptonshire to Brentford and Paddington via Blisworth, Stoke, Grafton and Cosgrove. Following the length of Hertfordshire's south western border from Tring to Rickmansworth it crossed the estates of the Earls of Essex and Clarendon<sup>7</sup> both of whom were members of the committee selected to run the company in 1793, progressing thence to Norwood and Osterley joining the Thames between Brentford and Syon House. A branch from Watford to St Albans received assent in 1795, from which the company would have received, over and above rates already secured by former acts, a further rate of two-pence per ton for all goods conveyed the whole length of

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<sup>4</sup> Simpson, *The Agreeable Historian, or the Compleat English Traveller*. p.252

<sup>5</sup> Watford, Berkhamsted, Hemel Hempstead, and St Albans are prime examples. Redbourn shows characteristics of having migrated: from being a village grouped round the church and central green, where old houses still exist, to re-locating along the roadway. See also Munby, 'The Landscape of Hertfordshire'.p.8

<sup>6</sup> Hertfordshire hay was not, however, sent by rail, since it arrived in better condition when transported direct by cart ~ similarly, straw was generally sent by road. Evershed 'Agriculture of Hertfordshire' p.283

<sup>7</sup> The original plan was to build a 900 yard tunnel through the hill at Langleybury with a flight of locks into the Colne valley at Rickmansworth, but it was considered cheaper to compensate the Earls ~ £15,000 to the Earl of Essex and £5,000 to the Earl of Clarendon ~ for passage, and agree to making the canal as ornamental as possible for those sections.

the intended cut, or in proportion for a lesser distance.<sup>8</sup> This branch was never cut, but by 1815 there were branches to Rickmansworth town wharf (1805) Dickinson's' paper mills at Batchworth (1815) and to Aylesbury (1815).<sup>9</sup> The canal carried passenger as well as freight traffic, Priestley recording in 1831 that 'Packet-Boats regularly ply on the canal between London and Uxbridge, for the conveyance of passengers and parcels.'<sup>10</sup> While no positive record has been found of silk conveyed to or from any of the Hertfordshire mills, the canal barges certainly carried staple goods from the industrial regions of Manchester and Birmingham, and in return 'groceries, tallow, cotton, tin, manure, and raw materials for the manufacturing districts, are constantly passing upon it.'<sup>11</sup> It will be noted that these goods are all of great weight or bulk; silk was neither, but it was of high value and very susceptible to damage. Only the mills at Rickmansworth and Tring were really conveniently situated to have used the canal, particularly the mill at Tring from which thrown silk was sent to Aylesbury.<sup>12</sup> If the canals were used to transport Hertfordshire silk to or from London and the northern textile districts during the late eighteenth and early nineteenth centuries, it is unlikely that the practice survived the coming of the railways. The advantages of rail transport induced many commercial companies to invest in their own branch lines to serve the factories, including John Dickinson's new paper mills at Croxley and Apsley, which thus had direct access to both rail and canal transport. None of the silk mills appear to have had direct access to railway goods yards, but nor were they at any great distance from the new stations.

By the middle of the nineteenth century railway access to London was

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<sup>8</sup> Priestley, *Historical Account of the Navigable Rivers, Canals and Railways throughout Great Britain*. p.326

<sup>9</sup> Hemming, 'The Grand Junction Canal'. p.39

<sup>10</sup> Priestley, *Historical Account of the Navigable Rivers, Canals and Railways throughout Great Britain*. p.335

<sup>11</sup> Priestley, *Historical Account of the Navigable Rivers, Canals and Railways throughout Great Britain*. p.335 'The immense trade on this concern is briefly stated, by observing that the tonnage amounts to near £160,000 per annum.'

<sup>12</sup> An engraving of the Rookery Mill at Watford shows a masted ship or sailing barge on the Colne. This is artistic licence, as the Colne was not navigable for a boat of such size. WCL

good, although cross-county routes were few: a section of the London and Birmingham Railway opened between Euston and Boxmoor in July 1837, reaching Tring in October of that year. Trains reached speeds of 30 miles per hour,<sup>13</sup> and by 1839 ran through Tring to London seven times a day, the same number running to Birmingham from London.<sup>14</sup> The London & Birmingham line had come to Watford in 1834, but it was a full further twenty years before a branch line to St Albans was opened in May 1858, and not until November 1862 was construction commenced on a line to Rickmansworth.<sup>15</sup> Problems in travelling from east to west of the county were indeed so great, that the County Press of 1842 was 'induced to observe upon the *extreme deficiency of internal communication* in Hertfordshire .... that there is *no public conveyance* between two such county towns [St Albans and Hertford] ~ between a whole *series* of flourishing towns on that line ~ as Hatfield, Hemel Hempstead, Berkhamsted, etc. ~ or between such places as Hitchin, Barnet, Watford, Baldock, Bishops Stortford ',<sup>16</sup> and as late as 1909, it was still found more convenient to hold Hertfordshire County Council meetings in London.<sup>17</sup>

Closely as Hertfordshire had been linked to London, the railway tightened those links, drawing custom away from the county towns and into London. The subsequent increase in population, primarily an influx of urban-bred individuals, brought an increase in both passenger and freight traffic, together with a great change in the character of the locality.<sup>18</sup> It may be argued that during this latter

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<sup>13</sup> *VCH Hertfordshire* Vol.II p.239 The London & Birmingham Railway, together with the Grand Junction Companies, became the London & North Western Railway in 1846.

<sup>14</sup> Pigot & Co. *Essex, Herts, Middlesex*. Sept 1839 p.136

<sup>15</sup> *VCH Hertfordshire* Vol.II p.239

<sup>16</sup> *County Press* 15 Jan.1842 p.3

<sup>17</sup> Munby, *The Hertfordshire Landscape* p.213

<sup>18</sup> Initially, the railway took people through Hertfordshire rather than to Hertfordshire: when the London and Birmingham Railway had been opened seventeen years, it was found that within a circle of two miles of each station between London and Tring, the total amount that had been expended in new buildings was only £22,000, but the presentation of a first-class pass, available to anyone erecting a residence of sufficient annual value near the line, brought about a resurgence whereby between £240,000 and £250,000 were spent on house-building in these localities during the following eight years. Williams. *Our Iron Roads*. p.503.

part of the nineteenth century, the railway changed the custom, more profoundly than the landscape, of the county.<sup>19</sup>

Tourist guides and academic studies alike have contributed to an over-emphasis on the historic and enduring agricultural dependency of Hertfordshire. 'Agriculture and village life are the keys to the real nature of Hertfordshire folk'<sup>20</sup> wrote one author, dismissing nineteenth century Hertfordshire as 'almost totally agricultural, such industries as it possessed were themselves by-products of agriculture'<sup>21</sup>. Few have contradicted this view of the county,<sup>22</sup> industrial histories often subsumed in the family history of individual industrialists and their descendants.<sup>23</sup> While this study does indeed consider mill-owners and individual mills, the intention is to counter these pre-conceptions of Hertfordshire as a county of villages and agriculture, singularly lacking in industrial activity.<sup>24</sup>

Occupational history, the history of the industrial working class, has become part of the modern historical lexicon but it is the rural environment and economic dependence of Hertfordshire upon agriculture that has drawn most attention from chroniclers. No Hertfordshire towns were recognised in the 1851 Census Report as worthy of a place amongst the 51 Manufacturing Towns of

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<sup>19</sup> The railways cut the cost of carriage substantially: 'Instead of paying £5 a ton for bale goods between Manchester and London, the merchant now pays less than 30s.; ..... Within a year after the opening of the Liverpool and Manchester line the reduction in the charges in cotton was £20,000 a year; some firms saved £500 annually in this one item;' Williams, *Our Iron Roads..* p.504 Silk manufacturers would have benefited less dramatically since their goods were of lesser bulk for the weight.

<sup>20</sup> Bailey, *Portrait of Hertfordshire*. p.24

<sup>21</sup> Bailey, *Portrait of Hertfordshire*. p.11

<sup>22</sup> An exception is William Branch Johnson who in 1970 published *Industrial Archaeology of Hertfordshire*. following a report undertaken for the Ministry of Public Buildings and Works and published as *Industrial Monuments in Hertfordshire*.

<sup>23</sup> The histories of the firm of John Dickinson are a case in point. The two best known accounts are by family members; *The Firm of John Dickinson and Company Limited* published in 1896 by his grandson Lewis Evans, and *The Endless Web* in 1955 by his step-granddaughter, Joan Evans.

<sup>24</sup> Echoing the Census Report of 1831, Agar summarily dismisses nineteenth-century industrial manufacture in Hertfordshire implying that it was a late and insignificant development. 'Watford and St Albans developed some industry in the nineteenth century but the county as a whole was orientated on London' Agar. *Employment and Community in Beds and Herts in the Nineteenth Century*. p.4

England,<sup>25</sup> the silk towns listed as Coventry, Macclesfield, Derby, Spitalfields, and Bethnal Green, Norwich standing alone as a producer of mixed wool and silk. Despite the large number of plaiters in Hertfordshire, straw plait is recognised as being a major product only of Luton and Dunstable. The importance of the straw plait industry to the local economy of Hertfordshire is now becoming more widely acknowledged, but because it was chiefly the preserve of women and children<sup>26</sup> it has hitherto been largely regarded as peripheral.<sup>27</sup> The importance of the silk industry in semi-rural districts has been similarly ignored, and for similar reasons: that it was the preserve of women and children.

Undue adherence to national statistics has contributed to the misleading overview of Hertfordshire as overwhelmingly rural in character. In 1851 only 24% of the population lived in towns, against such regions as the West Riding 46%, Cheshire 48%, Staffordshire 55%, and Lancashire which counted 66% of the population as urban.<sup>28</sup> However, six of the nine designated Hertfordshire towns from which this urban population was counted lay in the south and west of the county, and it was here that most industrial activity developed during the eighteenth and nineteenth centuries. The barley grown around Baldock, Hitchin, Royston, and Ware, made brewing and malting the dominant industry in those areas, market gardens grew up along the Lea valley, and in the western districts of the county the straw plait trade was widespread, with a large and important market at Hitchin. The South West region, in which the silk mills were situated, included

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<sup>25</sup> *Census Report 1851, I. Numbers of the Inhabitants* p.xlix Neither are there any Hertfordshire towns among the 28 Mining and Hardware Towns.

<sup>26</sup> Having, so Agar asserts, less effect upon wages in Hertfordshire than shoe-making in the villages of Northants or Leicestershire. Agar, *Employment and Community in Beds and Herts in the Nineteenth Century*.p.23

<sup>27</sup> Even the 1843 and 1864 Reports of Commissioners that recognised the need to augment family income with straw plaiting made similar accusations as those levelled at the girls in silk factories: 'they stay at home independent of their parents as regards earnings, and therefore control. They put what they do earn upon their backs, and become vain and overdressed.' *PP 1864 Reports of Commissioners* Vol. XXII 'Evidence upon the straw Plait and Bonnet Manufactures and some Miscellaneous Employments collected by Mr. J. E. White.'p.206 See also Goose, *The Berkhamsted Region and St Albans and its Region*

<sup>28</sup> Percentages calculated from *1851 Census: Appendix to Report, Tabular Results*. Table 16 p.civ PP 1852-3 Vol. LXXXV The nine towns were Ware, Bishop Stortford, Hitchin, Hertford, St Albans, Hemel Hempstead, Watford, Great Berkhamstead, Tring.

elements of all these industries. In Tring and St Albans in particular, if to a much lesser degree in Watford and Rickmansworth<sup>29</sup>, the straw plait trade provided a popular alternative to the employment of women and children in factories. In Watford, brewing would become as important to the local economy as the silk and paper mills; in Rickmansworth and Sarratt, market gardening would take the form of watercress growing.

The important element that fostered the establishment of textile mills in these districts, and not in areas further north, was the water supply. Silk and paper mills required water not only to work machinery, although that was an important asset, but also to clean and process materials during manufacture. 'Silk as it arrives in this country in the raw state is too "springy" and liable to curl, for spinning purposes, and it is put through a washing process which softens the natural gum, and renders it more pliable and workable' wrote an observer at Woollams' mill in St Albans.<sup>30</sup> The most important river in the south west of the county was the Colne, rising west of Hatfield, the Ver rising in the chalk hills north of St Albans. The two rivers join approximately five miles to the south of St Albans, flowing south west by Watford and Rickmansworth before leaving the county. The Gade flows along the western border of the county, at that time passing through the parks of The Grove, belonging to the Earl of Clarendon, and Cassiobury, belonging to the Earl of Essex, to join the Colne at Rickmansworth, both becoming part of the Grand Junction Canal.<sup>31</sup> These three rivers Gade, Colne, and Ver, provided much of the motive power to run the mills.

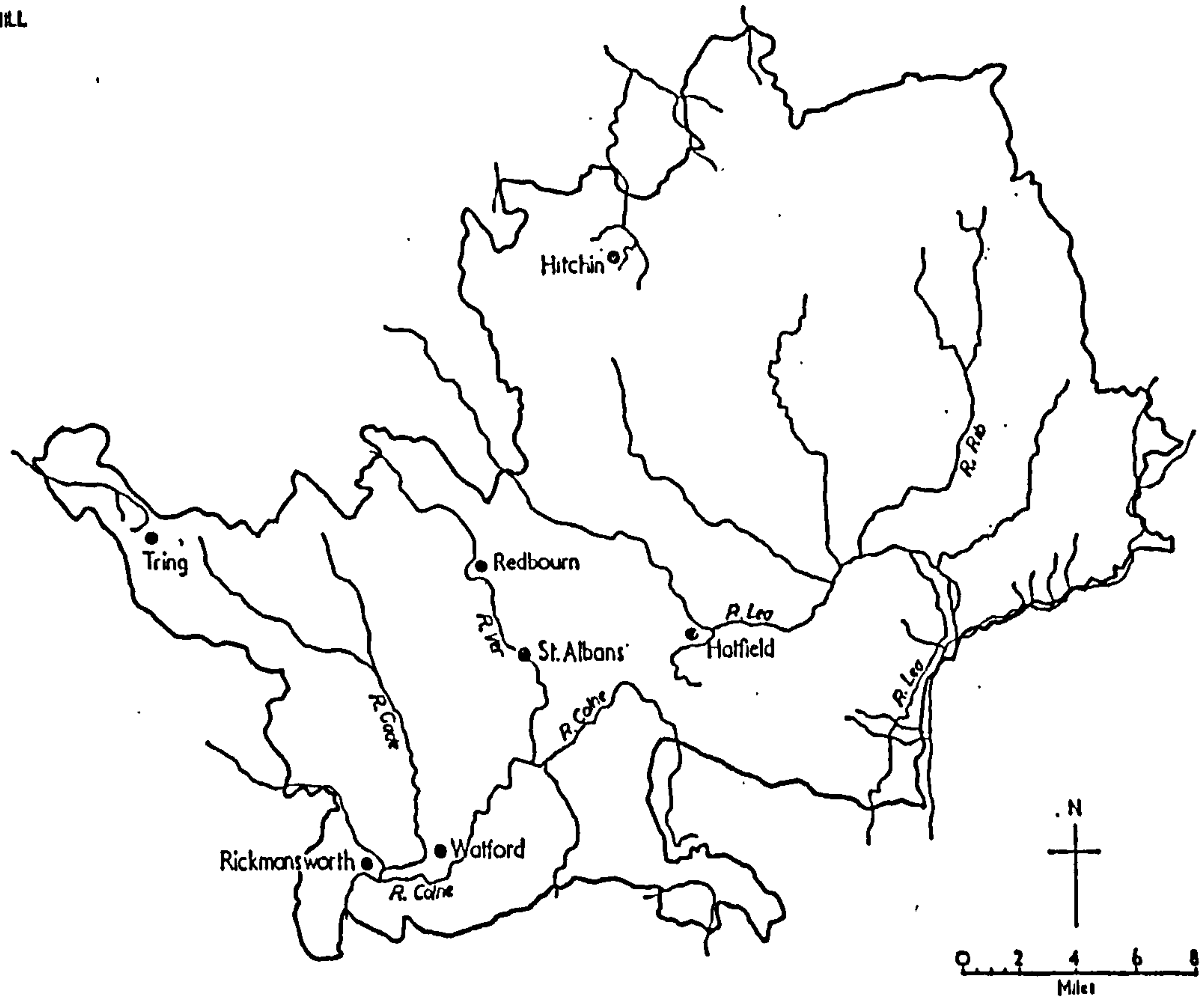
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<sup>29</sup> There was a straw factory at Rickmansworth during the 19<sup>th</sup> century.

<sup>30</sup> *Herts Advertiser and St Albans Times* 2 Feb. 1901 p.5vi

<sup>31</sup> Topographical description, Foster, A . J. 1896. *Tourist's Guide to Hertfordshire*. p4 and *VCH Hertfordshire Vol.II* p.446

● SILK MILL



Silk mill sites in Hertfordshire

### Silk Throwing in Hertfordshire

The period of this study is 1790-1890, but there is a prologue, in as much that the silk mills in Watford were of older provenance, existing in greater numbers from the middle of the eighteenth century until the early years of the nineteenth century, and always forming a significant part of the town's industry. There is also a postscript, because the mills at St Albans and Redbourn, once belonging to the Woollam family, remained in production under the aegis of Maygrove and Co. until well into the twentieth century, their viability maintained

through diversification into the additional production of artificial-silk yarns for knitting and crochet.<sup>32</sup> The core period of 1790-1890 has been chosen because it encompasses the years of growth and decline of the industry as a major industrial employer in the region, 1850-1860 being the decade during which highest levels of employment were reached, and during which the influence of the mills was most widely disseminated through the south west region of Hertfordshire. Nationally these were also the years of change for silk manufacture, of geographical redistribution, and international negotiations that altered forever the political climate within which the English silk industry could flourish.

All the silk mills in Hertfordshire were primarily 'throwing mills', that is, they were engaged in the intermediate processes after reeling from the cocoons, preparing the finished thread for weaving. Growth of the industry can be traced from the record of silk throwsters in the Watford Militia Lists of the 1750s, through the Vestry minutes of the parishes that sent their pauper children to work in the mills, through the Minutes of Evidence collected by Commissioners for the Employment of Children, the subsequent reports of the Factory Inspectors, and, from 1841, by careful scrutiny of the decennial census. This last source shows all too clearly the slow decline in employment for silk workers from 1871, followed by mill closure at Rickmansworth, Watford, and Tring by the end of the nineteenth century. A core question of this thesis, as to why silk production came to this section of Hertfordshire at all and remained for such a long period, is linked not only to the role of government in the regulation of the silk trade, but also to the topography of the region, the availability of labour, and the relationship of the silk industry to other local industries. In a recent study of Essex, Pam Sharpe notes a symbiotic relationship between agriculture and industry, by which industrial workers were free 'to fill seasonal labour shortages in the agricultural

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<sup>32</sup> Hard, *The Silk and Rayon (Artificial Silk) Directory and Buyers Guide of Great Britain 1926* p.115 lists Maygrove, J., & Co. Ltd. 51-52 Aldersgate St., EC1. Established 1866. with works at Abbey Mills, St Albans and Redbourn Mills, Redbourn as 'Throwsters of Chinas, Japans and Italians in Tram and Organzine. Twists, Floss and Sewings. Artificial Silk Specialities for Machine and Hand Knitting. Weaving and Embroidering in Plain, Rainbow and Marl Colourings.'



workforce'<sup>33</sup>, but it is by no means clear that this held true universally nor, in particular, in Hertfordshire.

The manufacture of cotton and silk were industries based on the refining and finishing of an imported raw material, and the criteria for choosing a site for its manufacture were therefore quite different from those governing a domestic industry. A power source, a pool of cheap available labour, and good routes for the transport of incoming raw materials and the outgoing finished product were the priorities. In the case of silk the principle market was London, so Hertfordshire would seem ideally placed for the trade. In addition, the throwing mills would also have been well situated for the transport of yarn to the weaving centres at Coventry, Leek, and Macclesfield.

### Regional Perspectives

Christine Hallas, in a study of Wensleydale and Swaledale, notes an imbalance of regional and local studies that have tended to concentrate on arable areas in the south and east of England, leading to overall assumptions about the countryside based upon those conditions.<sup>34</sup> A similar imbalance is found here, where the majority of social, demographic, and economic studies examining the English textile trades have concentrated largely on the highly urbanised manufacturing districts of the north and midlands. Many of these have concentrated upon the cotton industry<sup>35</sup> which grew so rapidly in terms both of numbers employed and material produced, as to overwhelm all other textile manufactures in economic importance, but before the rise of 'King Cotton' silk was the second most important textile after wool, and thereafter remained the third most important

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<sup>33</sup> Sharpe, *Adapting to Capitalism, Working Women in the English Economy, 1700-1850*. p.3

<sup>34</sup> Hallas, *Rural Responses to Industrialization: The North Yorkshire Pennines 1790-1914*. pp.2-7 She also notes a bias whereby interest in textile manufacture has tended to be concentrated upon 'those areas that subsequently became urban industrial centres and little research has been undertaken on the development, impact or causes of decline of the textile industry in remote areas, such as Wensleydale and Swaledale...' p.191

<sup>35</sup> See Smelser, *Social Change in the Industrial Revolution* and Chapman, *The Lancashire Cotton Industry*

textile produced in the United Kingdom. Only Sir Frank Warner,<sup>36</sup> a silk manufacturer rather than an historian, attempted a full national survey, as part of his extensive history of the silk industry of the United Kingdom.<sup>37</sup> This volume is still the best overview of the distribution of the silk industry up until 1921 because it includes the areas of marginal production largely overlooked both in contemporary and modern accounts of the industry. Although Warner makes no pretence to inquire into the social costs of silk production, nor to debate the merits or otherwise of the employment of women and children, he does give a clear picture of the economic problems which beset both commercial manufacturers and individual weavers, as the industry underwent structural change.<sup>38</sup>

It has been asserted that the four districts of London, Lancashire, the South West Pennines, and Coventry, were the dominant centres of the trade<sup>39</sup> accounting together for the lions share of the industry's employment, and the literature regarding the silk industry strongly reflects this. Gail Malmgreen has written extensively of Macclesfield,<sup>40</sup> Tiratsoo of Coventry,<sup>41</sup> and Wilde of the Pennine towns.<sup>42</sup> There have been numerous studies into the rise and decline of the London silk industry, notably those of Natalie Rothstein,<sup>43</sup> who also considered

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<sup>36</sup> Founder of Messrs. Warner and Sons, based in Essex. Sir Frank Warner KBE cr. 1918 (b.1862) President of the Silk Association of Gt Britain & Ireland 1910-17; Member of Textiles Committee, Board of Trade 1916; Member of Linen & Silk Committee, War Trade Dept. 1916-18; Advisor to the Board of Trade on Textiles (other than Cotton) President of the Textile Institute 1918-20.

<sup>37</sup> Warner, Frank *The Silk Industry of the United Kingdom*.

<sup>38</sup> Regarding other aspects he is less informative, for example Chapter 9, pp.91-94 headed 'Legislation and the Factory System' deals more with the public health and sanitary measures enacted for London during the last half of the nineteenth century, and the variety of industries and 'petty trades' that grew up to replace the silk weavers, than with actual factory legislation. Warner, *The Silk Industry of the United Kingdom*.

<sup>39</sup> Wilde, *Growth, Decline and Locational Change in the English Silk Industry of the Nineteenth Century: A Study in Historical Geography*. PhD, Keele : Abstract p.ii

<sup>40</sup> Malmgreen, *Silk Town : industry and culture in Macclesfield 1750 - 1835*.

<sup>41</sup> Tiratsoo, *Coventry's Ribbon Trade in the mid-Victorian period : some social and economic responses to industrial development and decay*. PhD, L.S.E.

<sup>42</sup> Wilde, *Growth, Decline and Locational Change in the English Silk Industry of the Nineteenth Century: A Study in Historical Geography*. and Wilde, 'Contrasting Features in the Evolution of the Silk Industry in the Towns of the South-West Pennines'.

<sup>43</sup> Rothstein, 'Canterbury and London : The Silk Industry in the late Seventeenth Century.' and Rothstein, 'Huguenots in the English Silk Industry in the Eighteenth Century'.

the close connection to the Canterbury trade, and Jordan,<sup>44</sup> who examined the condition of the weavers, and the effects of the Spitalfields Acts during the eighteenth and early nineteenth centuries. Of those areas associated with the dispersed silk industry, Essex has attracted more attention of late, primarily from chroniclers of womens history such as Pam Sharpe<sup>45</sup> and Judy Lown<sup>46</sup> the former of whom examines the social and economic position of women in a number of occupations, while the latter addresses issues of patriarchy and social control.

By contrast, it has been largely left to local historians to record the story of silk production in marginal rural counties such as Somerset, Hampshire, Berkshire, Buckinghamshire and Hertfordshire. The mills here employed sufficient persons to fall under the Factory Acts, were inspected, their power sources and strength noted, but seldom gave cause for inspectors to record individual incidents or extreme disapprobation. Masters and employees answered questions as to the conditions prevailing in the mills, yet their evidence provided to Commissioners has been generally overlooked by both social and economic historians in favour of the more sensational, sometimes more salacious, testimony, collected from more heavily documented regions. It must be admitted that there is some justification for this approach: there is a plethora of information regarding mills in Cheshire and Lancashire and, in parliamentary papers alone, the evidence of a broad spectrum of witnesses, both male and female. Vestry minutes record the hardships experienced by numerous silkworkers as demand fluctuated, and each week local newspapers carried advertisements of mills for sale, or of runaway apprentices. Newspaper coverage was especially good during the early years of the industry, when local newspapers were rare in Hertfordshire, and even the southern mill proprietors advertised in northern papers such as the *Manchester Mercury*.<sup>47</sup>

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<sup>44</sup> Jordan, *The Silk Industry in London 1760 - 1830*. MA (Arts), London.

<sup>45</sup> Sharpe, *Adapting to Capitalism, Working Women in the English Economy, 1700-1850*.

<sup>46</sup> Lown, *Women and Industrialisation Gender at Work in Nineteenth Century England*.

<sup>47</sup> The Rookery Mill at Watford was advertised for sale in the *Manchester Mercury* 2 Aug 1768 3iii

Company histories have contributed to the story of the dispersed silk industry in England; Courtaulds,<sup>48</sup> and Vanners,<sup>49</sup> both London companies that moved into Essex; David Evans and Co. of Tring and Crayford;<sup>50</sup> all belong to this group that have already received attention from historians, serving as a reminder of the importance of local knowledge, and the place of micro-history, in the jigsaw that comprises an overall national picture. They serve also as a warning that knowledge of working practises in one area can inform, but cannot be taken blindly as a universal model and applied elsewhere. Factory rules and regulations were not the same nationwide, and factory proprietors held widely differing views regarding their rights and responsibilities towards their workforce.

There are strong and immediately discernible contrasts between north and south which again reflect the importance of regional studies in an assessment of the impact of factory labour upon the general populace. In a recent study of women and the New Poor Law, Marjorie Levine-Clark finds that in contrast to the female inmates of workhouses in Sussex and London who were chiefly washerwomen, servants, or needleworkers, 'an admission and discharge register from Leeds reveals that, when occupation was noted, the inmate tended to be a prostitute or mill worker' while only a few were servants or semstresses.<sup>51</sup> She suggests that the poor law authorities of Leeds may have differentiated between the granting of outdoor relief to 'respectable' women working in traditional service trades as charwomen or laundrywomen, and the non-respectable occupations of 'prostitutes and unmarried female factory workers.'<sup>52</sup> If these two occupations were truly coupled together in the minds of the poor law authorities of the industrial towns, so as to affect the type of aid offered, the same criteria do not

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<sup>48</sup> Coleman, *Courtaulds, an Economic and Social History*: Oxford University Press. and Adams, Bartley, et al, *'Under Control' Life in a Nineteenth Century Silk Factory*. Series: Women in History.

<sup>49</sup> Chapman, 'Vanners in the English Silk Industry 1829 - 1989'.

<sup>50</sup> Chapman, 'David Evans and Co. The Last of the old London Textile Printers'.

<sup>51</sup> Levine-Clark 'Engendering Relief: Women, Ablebodiedness, and the New Poor Law in Early Victorian England' p.120

<sup>52</sup> Levine-Clark 'Engendering Relief: Women, Ablebodiedness, and the New Poor Law in Early Victorian England' pp.120-121

appear to have been applied in the industrial districts of Hertfordshire where few of the female (or male) workhouse inmates are designated as factory or mill workers. While there is certainly a reluctance to give outdoor relief to the disreputable and improvident poor, a clear majority of those few silkworkers found in the workhouse at census time between 1841 and 1891 were well past normal working age.<sup>53</sup>

The mills situated in Hertfordshire that were run competently, that remained in the possession of one family, or of one person, for long periods, that made a reasonable profit and employed a significant but not overwhelming proportion of the population, provided little copy for newsheets or Factory Act campaigners. The general invisibility of women workers is shared by those in Hertfordshire; there were no bread riots attached to these mills, no well-documented strikes, and no records have been found of workers combinations centred upon the Hertfordshire mills. Nevertheless, the very lack of sensational reporting argues a certain prosperity: Vestry minutes and Guardians reports show that in these mixed communities, agricultural workers and their families were at far greater risk of falling upon the parish than were silkworkers, or indeed, other factory hands. The census for 1851 shows minor variations between districts, but only in as much that straw plaiters account for 22% and domestic servants 40% of female workhouse inmates in St Albans, one single individual representing mill workers, while in Hatfield 31% of inmates were the wives and widows of agricultural labourers. Again, only a single individual was recorded as having an

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<sup>53</sup> As noted below, the number of silkworkers in the workhouses of Hertfordshire in 1851 numbered only one male and eight females, of whom five females were aged 60 years and above. In 1881, the last census at which the Watford mills might have had some influence, there was one male aged 72 at Watford, one female aged 22 at St Albans. At Watford 21% of male inmates were agricultural labourers and 20% general labourers; 17% of women had been engaged in domestic service occupations. At St Albans 16% of men had been agricultural labourers and 43% general labourers, while 22% of women were straw plaiters and 12% from the domestic service sector. While these occupational descriptions are not entirely unproblematic, the overall picture broadly conforms to the pattern shown in 1851 when these same groups were the most numerous in the workhouses.

occupation possibly connected to factory work, and although fewer female inmates here record occupations independent of husband or father, 10% are recorded as domestic servants. In Watford, a district of both silk and paper mills, only 10% had been mill workers, but over 25% of female inmates were, or had been, domestic servants. In Berkhamsted workhouse straw plaiters again form the largest female group, accounting for 59% of inmates, and there are no mill workers.<sup>54</sup> Straw plaiters were considered to have low morals,<sup>55</sup> but was it lack of 'respectability' or the precarious nature of their occupation that brought them to the workhouse?

The demographic studies of Anderson, centred on Preston, reveal a dense urban-industrial population where it is possible to count textile workers in substantial numbers, where whole districts were inhabited by a mixture of silk hand-loom weavers and silk factory employees. In Hertfordshire, where the greatest employer of adult males was still agriculture, there is nowhere so densely populated with silk, rag, paper, or other factory workers as to so comprehensively overshadow workers in other trades and occupations. For example, in Watford and Rickmansworth the paper mills and rag factories, and in Tring and St Albans the straw plait industry vied with the silk mills as an employment for women and children, to the extent that the author of Pigot's directory for 1839 commented on St Albans:

The manufacture of straw plat employs, it is conjectured, upwards of eight hundred persons in the town and immediate neighbourhood; there is also a silk and cotton manufactory, and one for ribbons, but these branches are not extensive...<sup>56</sup>

The Hertfordshire mills began, and remained, situated in provincial market towns rather than urban-industrial conurbations like those of the northern textile districts. In a study of the economic activity of married women, Anderson is able to use a

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<sup>54</sup> Hertfordshire Census Returns 1851

<sup>55</sup> PP 1843 Vol. XIV *Childrens Employment Commission* Appendix to the Second report of the Commissioners. Trades and Manufactures p. A10, A12 *PP 1864 Reports of Commissioners* Vol. 22. 'Evidence upon the straw Plait and Bonnet Manufactures and some Miscellaneous Employments collected by Mr. J. E. White.'p.203

dataset extrapolated from the National Sample for 1851 taken across the complete districts of Lancashire and Cheshire, comprised entirely of 'couples in which the husband was employed in textile manufacturing in other than a clerical or managerial capacity' that contained 1,496 couples.<sup>57</sup> Hertfordshire could plainly not yield a dataset of comparable size, since the total workforce of the Hertfordshire silk mills in 1851 numbered approximately 1,000. St Albans was the largest town in Hertfordshire<sup>58</sup> having some 7,000 inhabitants in 1851. In contrast, Preston recorded 69,542 having more than doubled in size during the preceding twenty years since 1831, Derby recorded 40,609, and even Ashton-under Lyne, that in 1801 held 6,391 inhabitants, had by 1851 almost five times that population, at 29,791 people. Coventry had grown more slowly, but still counted a population of 36,812 persons by 1851. It thus becomes evident that although the actual number of silkworkers in the south-west region of Hertfordshire are few in comparison to those of the industrialised districts, the influence and impact of the mills among a very much smaller overall population may nevertheless be of great importance.<sup>59</sup>

This thesis aims to highlight two neglected areas of academic study: the industrial activity that has been ignored in an avowedly rural county, and the presence there of the silk industry, equally neglected outside its main centres of production. A brief history of the silk industry with reasons for its adoption and promotion in England provides background clues to its national importance and continued promotion into the nineteenth century. Despite problems of protection, production and competition, the relocation of manufactories to new areas such as Hertfordshire ensured the continued viability of the industry. The attractions of Hertfordshire, and in the first instance of the Watford district, are examined in the

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<sup>56</sup> *Pigots Hertfordshire* 1839 p127

<sup>57</sup> Anderson, 'What can the mid-Victorian censuses tell us about variations in married women's employment.' pp.9-30.

<sup>58</sup> Although Hertford maintained its position as the premier county town and centre of civic government.

<sup>59</sup> PP 1852-3 Vol.LXXXV 1851 Census Report: Appendix to Report Table 42 Comparative Population of Principal Towns in the Half Century 1801-51 pp.cxxvi-cxxvii

context of natural resources and labour availability. The changing dynamics of the silk industry in Hertfordshire between 1790 and 1890 are reflected in the working conditions, the role of mill owners in the community, and the sectors of the population from which employees were taken. The changing role of children, women, and the poor in the Hertfordshire mills raises questions regarding their labour both in the countryside and in industry at a time when national prosperity and industrialisation were both growing.



## CHAPTER 2. ORIGINS AND ASPIRATIONS

Here we go round the mulberry bush,  
                   the mulberry bush, the mulberry bush,  
 Here we go round the mulberry bush,  
                   on a cold and frosty morning...  
*Anon.*

### Sericulture

When speaking of an 'English' Silk Industry it must be remembered that this involved only the later stages of the processing and production of silk goods. Like the cotton industry, it depended on the importation of a raw material to be refined and finished in this country. Sericulture itself is confined almost exclusively to the Far East, Asia and the southern areas of continental Europe. Many species and races of 'silk' worm exist, both univoltine (yielding a single crop in a year) and multivoltine, (capable of yielding several). Nomenclature adds to the confusion, the 'wild silks', are not in fact the product of *Bombyx Mori*, the true silk moth: 'Tussah silk', for example, is the product of the Tussur Moth, *Antheraea peynia*<sup>1</sup> the most important of the commercially cultivated wild silk worms. Unlike that of the true silk moth, the thread produced is yellowish-brown in colour, which does not lighten with boiling, although it dyes well and has good durability. *Bombyx Mori* comes originally from China, and has never been commercially cultivated in England on any serious scale. Care of the silk worm from egg to mature cocoon is highly labour intensive, and the worms are particular in their requirements as to temperature and diet. The greatest single factor in the successful rearing of

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<sup>1</sup> Produced largely in China but also in India, *Antheraea peynia* feeds on oak, it's cocoon yielding a coarse, flat ribbon-like filament which when properly stretched and steamed to bring up the lustre, gives the finished cloth a glittering appearance. Strictly speaking there are no wild silks, as all commercially viable silks are cultivated. Alternative species include *Antheraea myllitta* and *Actias selene*, plus *Attacus ricini* and *Antheraea assama* which yield cocoons unsuitable for reeling, but are used to produce spun silk.

silkworms is climate. Rawlley, examining the prevailing conditions in various silk producing areas of India, France, and Italy<sup>2</sup>, concludes that:

‘.....the following rules determine the impossibility of sericulture in a specified area :-

- (a) Mean maximum temperature for the month 100°F. or over;
- (b) Mean minimum temperature for the month 50°F. or under; and
- (c) Mean wet-bulb 75°F. or over.’<sup>3</sup>

The basic quality and indeed quantity of silk produced is determined by these factors. Under optimum conditions such as those prevailing in Bangalore in the Deccan, or at Mysore in southern India, where conditions are suitable throughout the year, successive crops of cocoons may be raised. In Bengal too, the period between November and June is sufficiently long to permit more than one crop, since each cycle encompasses approximately six weeks. In contrast, even the best areas of Italy and France permit only one crop in each year. The area around Venice offering a window between May and September during which sericulture may be practised.<sup>4</sup> Without artificial provision of heat and humidity, the English sericulturist could not guarantee a viable crop of cocoons, and the cost of providing such an artificial environment means that even a successful crop could not compete with foreign cocoons raised in a natural environment. There is no great latitude, and it is immediately obvious that nowhere in the British Isles are suitable conditions naturally achievable. Britain did however have extensive colonies where these conditions did exist and the import of Indian and Bengal silk increased materially in proportion to that of China and Continental silks throughout the nineteenth century.

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<sup>2</sup>Rawlley, *Economics of the Silk Industry* pp.68-74

<sup>3</sup>Rawlley, *Economics of the Silk Industry* p.67

<sup>4</sup>Rawlley, *Economics of the Silk Industry* pp.68-70

## An English silk industry?

Revocation of the Edict of Nantes by Louis XIV on October 18<sup>th</sup> 1685, and the subsequent flight to England of large numbers of skilled artisan refugees including smiths, lace makers, and silk workers has been credited with the making of the British silk industry. While Huguenot silk weavers and throwsters undoubtedly brought expertise in specialised areas of production, together with knowledge of continental markets, and may legitimately be credited with revitalising or reinvigorating the industry, it is too fulsome to accredit the industry itself to their advent. Kay Lacey notes the occurrence of 'Silkwoman' as an occupational surname as early as 1318-19,<sup>5</sup> although according to Schober first mention of an English silk industry is to be found in a 1363 Act of Parliament under Edward III.<sup>6</sup> Even at this time the industry was unable to compete with continental rivals, and protection, in the form of a complete ban on the importation of silk goods, was given in 1454. Renewed in 1463 and removed in 1482 only to be re-imposed in an extended form in 1484, this barrier against competition allowed the nascent industry to develop. The London silkworkers repeatedly petitioned the King for aid in the face of the foreign threat to their livelihood.<sup>7</sup>

From such beginnings the pattern was set: Henry VIII 'permitted the import of raw silk and silk manufactured articles, with the exception of ribbons, cords, sashes, embroidery, and laces of pure and mixed silk, the import of which was still prohibited as the home industry was able to satisfy the demand for these articles.'<sup>8</sup> The majority of silkworkers even of this pre-industrial era, appear to have been principally female, concentrated in London, and often the wives or daughters of Aldermen. This argues a degree of respectability for their

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<sup>5</sup> Lacey, 'The Production of Narrow Ware by Silkwomen in Fourteenth and Fifteenth Century England'. p.194

<sup>6</sup> Schober, *Silk and the Silk Industry*. p.7

<sup>7</sup> A Petition of 1482 comes from a variety of silkworkers:

'as well men as women, and yonge damsels, beyng servauntes and apprentices to the said craft of silk work'

<sup>8</sup> Schober, *Silk and the Silk Industry*. p.8

occupation, if it was acceptable to the wealthier merchant class, although the term 'silkwoman' was loosely applied to any woman concerned in the production or sale of silk. It has been suggested that silkwork appears to have been solely in the hands of women until the end of the fifteenth century.<sup>9</sup> Silk wares included laces, ribbons, girdles, purses and other small articles, and although they did not have guild status, the silkwomen were bound by the same rules and system of indentures as workers in the other crafts. Agreeing with this last statement, Judy Lown nevertheless contradicts the assertion that silkwomen pursued an occupation separate from that of their husband or father, and in particular, distinct from Mercer's wives.

Most women in medieval London were engaged in work of a casual or irregular nature, .... They mainly assisted in a man's trade as wife, daughter or maidservant and contributed additional services to the household economy via their numerous casual activities. The silkwomen, although occupied in a protected and prestigious trade serving a luxury market mostly consisting of the aristocracy, were no exception. .... The rules of coverture subjected women legally and socially completely to their husbands.

Most women workers were involved in throwing and weaving alongside a multitude of other activities. Of those occupied in trading, the majority were married, mostly to mercers (silk merchants), and were controlled in their dealings by the rules of coverture.'<sup>10</sup>

This appears to be both a sweeping, and over-simplified view of the position of medieval working women. No account is taken of the position of single women or of widows, who, in the City of London, were able to trade and work as men. Married women, 'Femme covert', '...were required to come before the Mayor of London and declare their intention to trade in their own right; their husbands would thus not become bound for their debts.'<sup>11</sup> Once registered,

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<sup>9</sup> Charles and Duffin, Ed. *Women and Work in pre-industrial England*, pp.54-56

<sup>10</sup> Lown, *Women and Industrialization : gender at work in nineteenth century England* pp. 9-10

<sup>11</sup> Lacey, 'The Production of Narrow Ware by Silkwomen in Fourteenth and Fifteenth Century England'. p.195

women could take apprentices, the indentures being agreed between the parent or guardian, and mistress. True, if the mistress was married, the apprentice was often bound according to the conventions of contract law, to both husband and wife.<sup>12</sup>

Elizabethan and Stuart England rejoiced in the advent of the New Draperies, textiles of mixed fibres composed in varying proportions (and the possibilities for variation were endless) of worsted and silk, cotton and silk, and any number of other yarns.<sup>13</sup> Norwich and its environs came to form a substantial centre of production, the New Draperies replacing the declining woollen and worsted trade in importance. If this sector of the silk textile industry owed its existence to foreign initiative, the Walloon community contributing greatly to the new-found prosperity of the region, it should also be noted that the English Privy Council both granted tax concessions and generous terms of settlement. To encourage the long-term settlement of skilled refugees and the dissemination of their craft, some local Corporations set limits to the number of alien servants that newcomers could employ, or even to the crafts that they could practice.

James I, with ideas of a truly domestic silk industry, exhorted his lord-lieutenants of counties to encourage the planting of mulberry trees, making available to landowners both trees and seeds... but these too often proved to be of *Morus nigra*, the black mulberry, more valued for its fruits and tolerant of colder temperatures. Mr. William Stellingmeade was commissioned to write a book on sericulture for the guidance of entrepreneurs. A M. Vetro from Picardy, placed in charge of the importation, planting and management of mulberries, established the first official orchard at Charlton House, Greenwich, where John and Frances

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<sup>12</sup> Kay Lacey notes only 12, of 123 silkwomen working between 1300-1500, as having apprentices. Lacey also notes of 37 'silkwomen' wives, (who between them married 39 husbands, the occupations of 24 of those husbands, at least nine of whom could have had no professional connection to the occupation of their wives. Their occupations were as follows: 8 mercers, 4 drapers, 3 tailors, 2 vintners, 2 saddlers, 1 fishmonger, 1 salter, 1 grocer, 1 mason, 1 waterman. . Lacey . 'The Production of Narrow Ware by Silkwomen in Fourteenth and Fifteenth Century England'. p.195

<sup>13</sup> The merchant Walter Morrell attempted a project to employ the poor in the manufacture of the new draperies at Hatfield in Hertfordshire around 1616. A pilot project teaching the craft to 50 children began around 1609-10 under the patronage of the Cecil family. Zell, 'Walter Morrell and the New Draperies Project, c.1603-1631'.

Bonnell held the office of 'Keeping Silkworms at Greenwich and Whitehall'.<sup>14</sup> It is also recorded that he brought over workmen from France to manufacture silk.<sup>15</sup> Despite the fact that for the birthday celebrations of King James in June 1626, his Queen, Anne of Denmark, wore a dress of English silk taffeta, the silkworm rearing venture was ultimately a failure. Herz judged it 'an isolated and futile experiment'<sup>16</sup>, but reading the guide to sericulture written by D'Olivier de Serres, Lord of Pradel, *The Perfect Use of Silk-worms and their Benefit* translated into English in 1607 by Nicholas Geffe, it is easy to see how James was persuaded to approve the scheme. Although Serres strikes what should perhaps have been a warning note, 'where the vine groweth, there also will come the silke, an apparent demonstration, sufficiently verified by reiterated experiences, in divers countries discordant of climats'<sup>17</sup> and strongly advises the planting of the white mulberry to produce the best quality silk, he does not dismiss the black mulberry:

Nevertheless one must not be so scrupulous as utterly to reject the blacke Mulberries for the silke, but only for the mingling of the food, ..... there are countries where they are very profitable for this business: as in divers places of *Lombardie*, and hitherwards in *Anduze*, and *Alez*, and in other places towards the *Sevenes* of *Languedoc*, where great profit is made of the silke which comes of the black Mulberries.

.....

If your land be already planted with black Mulberries, keep you there without affecting yourself to accompany them with white, for the reason alleged: but being a question to begin the husbandrie, having not any Mulberries, of one sort, nor other, preferring the better before the good; you shall alwaies chuse the white for your Mulberrie-yard.<sup>18</sup>

To his translation, Nicholas Geffe appended a discourse of his own, concerning not only 'the means and abilitie of *England* for recovering of white Mulberrie

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<sup>14</sup> Scott, Philippa. 1993. *The Book of Silk*. London: Thames and Hudson Ltd. p.206

<sup>15</sup> Lipson, *The Economic History of England* p.100

<sup>16</sup> Herz, 'The English Silk Industry in the Eighteenth Century'. p.710

<sup>17</sup> D'Olivier de Serres, *The Perfect Use of Silk-worms and their benefit*. p.6 .

<sup>18</sup> D'Olivier de Serres, *The Perfect Use of Silk-worms and their benefit*.pp.22,23.

trees, to the sufficient planting thereof' but also soil condition, climate, 'and lastlie, though not the least, of the charitable employing of a number of poore and idle creatures'.<sup>19</sup> Geffe's idea for the employment of the poor in this new expanded silk industry finds echoes throughout the eighteenth and nineteenth centuries, as do his fears of an England overwhelmed by numbers of the indigent poor, even if later generations do not share his optimistic assessment of silk manufacture as a cure-all for the evils of society.

... multitudes of poor necessitous people may be relieved, wherewith our countrie will in time be too much pestred, unlesse some new invented necessarie imployment, supply their wants; than which the making of silke in *England* (under reformation) cannot give better occasion, seeing that thereby themselves shall be enabled to live, and the weale publike advantaged by their proper handlabor to the great contentment of us all, when we shall see infinit numbers of our owne councitizens, winding silke of our owne countrie; and weaving Sattins, Velvets, Taffatas, and divers other sorts of other silken stuffs, by which disposing them the industrious will bee easie and willing to worke, or being idle loyterers may be compeld, whereby the wretched well disposed, shall bee fathered to live better, and the miserable ill disposed by their example may endeavour the like, that the hungrie may be satisfied with bread, the begger bee ashamed to beg, and the thief to steale, that the gallows might cease from his waightie burthens of lamentable spectacles, which there suffer torments of death for pettie matters, by which strangers judge us a wicked or cruell nation, in regard we hang more in a yeere than others do in seven, a taxation, that this so necessarie an imployment, will bee a means to save them ....<sup>20</sup>

### The Influence of Strangers

So English courtiers continued to wear French and Italian silks, even if they were woven ~often by exiled Flemings~ in the East End of London. There

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<sup>19</sup> Geffe: *A Discourse of his Owne, of the Means and Sufficiencie of England, for to have abundance of fine silke, by feeding of Silke-wormes within the same; as by apparent proofs by him made and continued appeareth. For the generall use and universal benefit of all those his Countrie-men which embrace it.* p2

<sup>20</sup> Geffe *A Discourse of his Owne...* pp12-13

was already a long history of commercial contact between England and the Low Countries, and a legacy of diplomatic and less-than-diplomatic royal marriages stretching back to that of William the Conqueror. The efforts of the protestant states to break free of catholic Spanish domination were regarded sympathetically in protestant England, and the refugees that sought asylum following the sack of Antwerp, including a number of silk workers, were received with kindness. It has been noted that 'more than 80% of all silk workers in London in 1571 had arrived between 1560 and 1571, a period of intense persecution in the Low Countries and civil wars in France'<sup>21</sup> and in proof of their religious motivation in coming to England, is cited the fact that 'of the 183 silk workers in London in 1571, 88 per cent were members of the Stranger churches.' Such motivation is endorsed by Robin Gwynn, while conceding that some aliens could scarcely be classed as 'refugees', and that the returns for aliens for London in 1573 suggest that many had come for commercial, rather than religious reasons.<sup>22</sup> The number of immigrant silk workers was, however, smaller than may be imagined from a study of the occupational lists of later years. Many of these earlier refugees were unable to follow the trade or business that they had followed in their towns of origin, and turned to silk weaving as either a new skill, or as a related skill.<sup>23</sup>

The Silk Throwers Company was established in London in 1629, fifty-six years before the revocation of the Edict of Nantes drove the Huguenots to seek sanctuary in the protestant states of Europe. However, it is undeniable that both England and Germany gained, while France lost, by the mass expulsion of the Huguenots. Their expertise was not universally welcome. Silk weavers belonged to the London Weavers Guild which had existed since the twelfth century, initially making worsted stuffs, then also silk, and later, mixed cloths of silk and cotton. In 1638 the company was enlarged to cover all England and Wales, having successfully petitioned Charles I for measures against foreign weavers who (they

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<sup>21</sup> Luu, 'French-speaking refugees and the foundation of the London silk industry in the 16th century.' p.567

<sup>22</sup> Gwynn. *Patterns in the Study of Huguenot Refugees in Britain: Past, Present and Future.* p.223

<sup>23</sup> Rothstein. 'Canterbury and London : The Silk Industry in the late Seventeenth Century'.



claimed) refused to employ Englishmen, kept the business in their own hands, and used looms with up to 24 shuttles.<sup>24</sup>

These London Companies had a limited judicial authority with regard to their members, but also powers to oversee the transactions of the trade, to interrogate members, to report and to punish transgressions.<sup>25</sup> Following the restoration of Charles II in 1665, the authority of the Throwsters Company was extended from 4 to 20 miles radius from London, and it was enacted that there should be a compulsory seven year apprenticeship in the throwsters' art.<sup>26</sup> The Company had undoubtedly acquired sufficient strength to impact upon political decisions, but the size of the industry at this time is not easy to determine: it is estimated that by 1661, before the refugee influx 'the silk guild numbered some 40,000 persons, including women and children.'<sup>27</sup> While in 1694, after the revocation of the edict of Nantes, at a conservative estimate, the throwing branch alone numbered twice that :

In evidence before a committee of the House of Lords, 1694, the beadle of the Throwsters' Company stated that they numbered 80,000; one of the assistants 'believed' they were 30,000 ; another witness spoke of 200,000<sup>28</sup>

Notwithstanding these conflicting estimates of the throwing branch, Hertz quotes the petitioners of the Royal Lustring Company, stating that the number of looms to be supplied actually declined 'from 768 in 1695-6 to under 50 in 1697 owing to widespread smuggling by French and British privateers.'<sup>29</sup>

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<sup>24</sup>Lipson, *The Economic History of England*. p.102

<sup>25</sup>Gross, *The Gild Merchant*. p.113

<sup>26</sup>Lipson, *The Economic History of England*. pp.102-3 also 1662 Statutes, V 407-408 Parliament intervened in 1668 'to annul ordinances of the Company limiting the number of apprentices and spindles—silk throwers having been forbidden to use above 160 spindles at a time.' Lipson p.103 See : *Acts of the Privy Council, 1599 – 1600* p.477 and *Coke, Treatise* (1671)

<sup>27</sup>Schober, *Silk and the Silk Industry*. p.9.

<sup>28</sup>Lipson, *The Economic History of England*. p.102

See also: *House of Lords MSS 1693 – 1695* p.322, and *The British Merchant* (ed.1721) Vol II. p.315

<sup>29</sup>Herz, 'The English Silk Industry in the Eighteenth Century'. pp.710-11

Imports of the high lustre, glossy silks called lustrings were banned in 1693, leaving a gap in the market for anyone with the ability to duplicate the complicated process. In 1698 The Royal Lustring Company, founded by a Huguenot, Etienne Seignoret, was granted the sole right of weaving, dying and dealing in alamodes (thin black taffetas) and lustrings in England and Wales for a period of fourteen years. The company prospered for a time, but in 1713 Seignoret was fined for smuggling, and as fashions changed, the company, left with high stocks of unsold goods, was eventually dissolved.

### Trade and work

The closing years of the seventeenth century again brought hardship and destitution to silk workers, graphically portrayed by the author of a 1699 pamphlet entitled *'England's Advocate, Europe's Monitor ; being An Intreaty for Help In Behalf of the English Silk-Weavers and Silk Throwsters Shewing Their Misery, and the Cause thereof; And what will only Cure both Them and the Evils England's Trade groans under, and other English Manufacturers, from the like Desolation.* It takes the form of a letter, addressed to a member of Parliament, and pleads eloquently for a manufactory 'on the brink of destruction.' The case of the silk workers and their dependants was shown to be quite as desperate as that of the Spitalfields weavers more than a century later, their lives and livelihoods being under threat.

... they are fain to strip their Houses, and sell the Furniture by degrees, till from one thing after another, it comes to the very Bed they lie on, and they are reduc'd to a wad of Straw for their Lodging, and a few shavings for a necessary fire, to boyl a little Water-gruel, or a Beasts Liver; and when all is spent, then the upper Garments, if worth anything, goe to the *Broker*, for a small pittance of Money, to get a little Recruits for Belly-Timber; and thus starved inside and outside, they spin out a miserable Life...<sup>30</sup>

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<sup>30</sup> Anon. *England's Advocate, Europe's Monitor*. pp.6-7

While it may, with some truth, be asserted that the silk trade was always precarious, frequently in some degree of distress, and that workers in any trade are inclined to bewail the tribulations rather than laud the profits of a business, the despair in this particular appeal is compelling. Surprisingly too, this low point was not here ascribed by these earlier complainants to the French and Italian products arriving in Britain. The cause of distress among the silk workers was the import of Indian silks by the East India Company :

The unreasonable and indiscreet Preference of *India Manufactures*, whereby so vast a *Manufactory* and Profit is carried from us thither, especially of that of *India silks and Stuffs*, hath almost wholly overthrown and unhinged this profitable and necessary *Trade of Silk throwing and weaving* by which vast Multitudes of People of both Sexes young and old lately lived comfortably, and so did all its dependants.<sup>31</sup>

It is surprising since Bengal silk, until the middle of the eighteenth century, was of extremely low quality, worth only one-third to one-half as much as raw Italian silk.<sup>32</sup> The very cheapness of the product indicates one part of the answer, although at this time the quantity available for export would have been minimal. Quantity and quality both improved after 1772, in which year the East India Company sent experts to establish quality-control in Bengal, but as late as 1828, according to Badnall, Bengal silk was not considered suitable for the best quality goods.<sup>33</sup> Nevertheless, the India silk trade, and the virtual monopoly enjoyed by the East India Company, continued to give cause for concern among English manufacturers. One hundred and thirty years later, John Prout, advocating continued protection for his industry, cited an occurrence certain to make hackles rise, while the bitterness of his conclusion is almost tangible.

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<sup>31</sup> Anon. *England's Advocate, Europe's Monitor*. pp.13-14

<sup>32</sup> Singer, Holmyard, et al. *A History of Technology* p.309

<sup>33</sup> Badnall, *A View of the Silk Trade*.

One extraordinary anomaly arising from the East India monopoly, and Mr Huskisson's free trade schemes, is that from the limited supply of silk from the East Indies, and the great import of manufactured bandanas, that great trading body was at one and the same time, in different rooms, selling their manufactured bandanas at about 1s 3d per ounce, and the raw silk from which the British Manufacturer was to produce the same article, at the same price, to which must be added the expenses of throwing, winding, warping, and weaving, and the loss of one fourth in weight by boiling off.....

..... The company can bring just as much of either article as suits their purpose. They have an absolute command of the market, and yet this is called *free trade*.<sup>34</sup>

In truth, despite attempts to ease trade restrictions with continental Europe, the duties on imported finished silks increased during the late seventeenth and early eighteenth centuries: clauses in the Treaty of Utrecht designed to facilitate trade between England and France by lowering tariffs were defeated in parliament in 1713.

### **The Huguenot Dimension**

At the opening of the eighteenth century, London was still the principal centre of the English silk industry, with lesser concentrations of silk stocking manufacture in Oxford, Wokingham, and Reading. Wilde goes further, asserting that 'In 1700 the Spitalfields district of London was the only major silk producing area in England'<sup>35</sup> but other centres did exist. Norwich, once a centre of the wool trade, and also a city with a significant population of immigrant textile workers, had turned to the production of fabrics containing a mix of silk and worsted. Silk buttons had long been a speciality of Macclesfield, and broad silks had been woven in Coventry until at least 1672 when a distinct silk weavers company was formed. Ribbon weaving had already commenced, in all probability due to French

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<sup>34</sup> Prout, *A Practicle View of the Silk Trade*. pp.13,14

<sup>35</sup> Wilde, *Growth, Decline and Locational Change in the English Silk Industry of the Nineteenth Century: A Study in Historical Geography*. p.88

influence and the arrival of Huguenot exiles,<sup>36</sup> in 1701 there is mention of a 'Mr Bird' manufacturing ribbons.<sup>37</sup> Contemporary terminology, grouping framework knitters and silk stocking weavers together with broad silk weavers under the all purpose 'silk weaver' umbrella, can be misleading when determining the distribution of silk production and manufacture, but broad silk manufacture in the early modern period was concentrated in London and its suburbs, Canterbury, and Norwich.

It has also been asserted that 'apart from a few individuals the Huguenots gravitated to two textile centres only, initially Canterbury, and then London'<sup>38</sup>, a statement lending credence to the belief that the silk industry of Kent, and of Canterbury in particular, arose 'from the commercial invasion of the county by foreign refugees, Canterbury being from the first the chief seat of manufacture.'<sup>39</sup> Before the coming of the Huguenots there were Dutch settlers engaged in the production of Sayes, (a type of fabric originally composed of wool, then later, of silk and cotton, and eventually completely of silk) at Maidstone, and in 1561, a petition of one Hector Hamon was presented on behalf of a company of foreign craftsmen desirous of settling in Canterbury itself. Although the project never came to fruition, the fabrics listed for production are those likely to have been produced by Walloon weavers : Bombasin, orleance, frotz, and monquade.<sup>40</sup> The importance of Canterbury, and its strength as a centre of broad silk production, may be gauged by the legislation of the seventeenth century, expressly worded to govern jointly the conduct of the trade in both London and Canterbury. By 1720 the great days were already over. Rothstein finds that at the beginning of the eighteenth century, when Canterbury was still important, 17.6% of the London

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<sup>36</sup> Warner, *The Silk Industry of the United Kingdom*. pp.108-9

<sup>37</sup> Quite possibly a forbear of the Wilberforce Bird of Coventry that in 1795 tested a quantity of Bengal silk thrown in England on behalf of the East India Company, (See Chapter 3 p.55 below.) and of the Thomas Bird 'one of the most eminent silk manufacturers in England, in which branch of business he daily employed over two thousand workpeople' whose death was reported in the *Coventry Mercury* 13 Jan 1856.

<sup>38</sup> Rothstein, 'Huguenots in the English Silk Industry in the Eighteenth Century' p.128

<sup>39</sup> *VCH : Kent* . Vol.3 p.412

Weavers Company were Huguenots, a figure which increased with in-migration, until Huguenots formed one fifth of the Company in the 1720s.<sup>41</sup> Canterbury had indeed lost a number of its skilled craftsmen to the attractions of London, and was becoming steadily less important in the silk trade. Of the 72 families proved to have associations with the silk industry in these two centres, the majority had moved to London by 1703.<sup>42</sup> In a later exploration of the family ties between the Huguenot weavers of London and Canterbury which may have led to migration, Rothstein also offers this commercial incentive as a further explanation for Canterbury's decline

... while the Canterbury industry had been able to function quite efficiently when the total size and range of the textile industries both in that city and in London were modest, the great expansion of demand in the late seventeenth century drew weavers irresistibly to London. Moreover, while in Canterbury production had been quite diverse, in London there was an increasing concentration on the finer worsteds, half silks, and silks and a parallel tendency to specialise in certain goods.<sup>43</sup>

The speed with which Canterbury declined is also remarkable. In 1676 the Canterbury silk weavers numbered two and a half thousand:

Thousands of looms were busy with the production of rare and costly silks and sumptuous striped and flowered brocades, many of the fabrics being interwoven with gold and silver thread, the prices varying from 10s to 20s a yard. Turkey supplied the raw and Italy the thrown silk which was required.<sup>44</sup>

By 1710 the increase in imported Indian silks had reduced the number of Canterbury looms to 334 and 58 Master weavers. By 1799 there were only 10

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<sup>40</sup> *VCH* : Kent . Vol.3 p.412 Bombasin was made of silk and cotton; Orleance translated as cloths of Orleans, sometimes including cotton warp and worsted; Mocade was an imitation velvet.

<sup>41</sup> Rothstein, 'Huguenots in the English Silk Industry in the Eighteenth Century' p.127

<sup>42</sup> Rothstein, 'Huguenots in the English Silk Industry in the Eighteenth Century' p.130

<sup>43</sup> Rothstein, 'Canterbury and London : The Silk Industry in the late Seventeenth Century'. p.43

<sup>44</sup> *VCH* : Kent . Vol.3 p.414

Master weavers recorded. One of these, the Master of the Weavers Company of Canterbury in 1800, was an innovator of note. John Calloway had travelled in the north, viewed the cotton mills, and experimented by mixing Arkwright's level cotton twist in his looms of silk warp, producing a light fabric called 'Canterbury Muslin', which he manufactured alongside the more usual Chambery muslins and damasks. This new material was not sufficient, however, to save even his looms. Calloway died in 1806, and by 1823 his mills were pulled down.<sup>45</sup>

Essex, like Hertfordshire, developed an embryo silk industry in the eighteenth century which reached its peak during the mid-nineteenth century, but machinery engaged in the throwing and twisting of silk was recorded as early as 1718, and the existence of silk mills on the Stort and at Sewardstone near Waltham Abbey reported around 1720.<sup>46</sup> The mill on the Stort was at Little Hallingbury, a throwing mill described in the following terms,

In this parish, on the stream that runs from Stortford is erected a mill for throwing and twisting Silk. The inventor was one Mr William Aldersay, apprentice to a silk-throwster in London. This engine is employed in winding of silk for the Company of Dealers in Silk that got a Patent first. He has the model of the famous engine at Derby.<sup>47</sup>

The patent alluded to was that granted to John Apletre according him 'the sole Privilege of raising Raw Silk for fourteen Years, exclusive of others' and the

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<sup>45</sup> *Canterbury Weavers Past and Present* E.W. Gregory and Mrs Jane Wood (pub. before or circa 1832) quoted *VCH Kent Vol 3* p.415

<sup>46</sup> Ward-Jackson, *A History of Courtaulds*. p22

Note: The Waltham Abbey Sewardstone mill changed hands several times before finally closing not long after 1840.

1814 Messrs Carr and Dobson, Foster Lane, Cheapside.

1826 John Carr

1832 John Buttress

1840 J J Buttress and Son (in decline, closed soon after)

Page and Round, Eds. *VCH : Essex* p.463

<sup>47</sup> Holman, quoted Page and Round, Eds. *VCH : Essex* p.462 The patent alluded to is that of John Appletrees, No. 420 granted 1718 In contemporary papers he is referred to as 'John Apletre'. See references 78 & 79 Holman must have been writing sometime after 1821, when the mill at Derby was built, and possibly as late as 1732 when Lombes patent expired and models of his machinery were made.

'dealers in silk' a company formed in 1718 to raise money towards establishing a plantation of mulberry trees at 'Chelsea wall'd Park', held on a lease of 122 years.<sup>48</sup> Less concerned with employment of the poor than Geffe, the company officers were nevertheless adamant that the success of their company would be good both for the nation, and for general employment.

...could the Raw-Silk be once produced here, we should not only have our own people employ'd, immense Sums of Money kept at Home, with which we now purchase our Raw-Silk, but should Export great Quantities to *Holland, Germany* and other Places, and return very great Sums of Money to the effectual turning the Ballance of Trade against our Neighbours, as well *Dutch as French.*<sup>49</sup>

The mill prospered, but the silk raising venture proved no more successful than previous attempts. Salmon, writing around 1740, notes that the same mill '...has been for many years employed in twisting and winding silk, for which the proprietors have a patent. The work employs a great number of women and girls of the neighbourhood.'<sup>50</sup> The Little Hallingbury mill must have been one of the earliest to use the Derby model, and the use of women and girls certainly holds to the accepted pattern of textile factory employment. Loom shops and mills proliferated: Norwich crepe was produced at Saffron Walden (1815); broad silk and bombazine at Colchester; crepe, broad silk, and ribbons at Halstead (1832) under Samuel Courtauld.

The name of Courtauld became almost synonymous with the silk industry of Essex, and a fortune was made through the development of black crepe, and the long mourning period of Victorian England. George Courtauld (1761-1823),

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<sup>48</sup> Anon, *Proposals for an Undertaking to manage and produce Raw Silk of the Growth of England* p7

<sup>49</sup> Anon, *Proposals for an Undertaking to manage and produce Raw Silk of the Growth of England* p.7

<sup>50</sup> *VCH* : Essex p.462



descendant of a Huguenot family from the Isle d'Oleron, and son and grandson to silversmiths, trained in London as a silk throwster, and on completion of his apprenticeship set himself up in business. Not as commercially astute as his son Samuel, his early ventures, including the production of pearl ash,<sup>51</sup> while in America, and an attempt to establish a paper manufactory in London, were destined to fail. In 1798 he oversaw the building of a silk throwing factory, dwelling houses and cottages for the workpeople at Pebmarsh, and there established a moderately successful business. Approached in 1806 by Jos. Wilson of Remington Mills and Co., silk manufacturers of Milk Street, in Cheapside, he agreed to establish and manage a silk throwing business, on the site which he recommended at Braintree. Although the business prospered, the partnership became strained, ending in the courts in 1817. George Courtauld won the case, and was awarded £5000, much of which he used to buy new, uncultivated land in America, where he died of fever in August 1823.<sup>52</sup> The Braintree mill remained in the possession of Remington Mills and Co.<sup>53</sup> but meanwhile, Samuel Courtauld (1793-1881) had opened a mill at Bocking, in 1817 entering into partnership with his cousin and future brother-in-law, P. A. Taylor.

### Technological advance

The truly "new" commercial branch of the silk industry that developed in the eighteenth century was indeed silk throwing. It has been shown that although some silk was thrown in England as early as the fourteenth century, the real pre-eminence in this branch lay in Italy, and to a lesser degree in France. The turning point came in 1721, with the erection of a throwing mill at Derby, positioned on an

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<sup>51</sup> Pearl ash was a form of potash obtained by burning waste wood, and used in the production of flint glass and soap.

<sup>52</sup> 'Though George was the first member of the family to enter the silk trade and established the industry at Braintree, he never appears to have owned a mill there in his own right; further, his son's mill was a new venture entirely and did not grow out of his father's partnership with Mr Wilson' Ward-Jackson, *A History of Courtaulds*. p.25

<sup>53</sup> Jos. Wilson and Co. were still in business in Braintree in 1832. Ward Jackson, *A History of Courtaulds* p.25

island in the River Derwent. Built by Thomas and John Lombe, the sons of a Norwich worsted weaver, it incorporated machinery built to designs stolen or pirated by John Lombe (sometime in 1717-18) of the Piedmontese throwing mill, '...the most advanced of the circular throwing machines at that time.'<sup>54</sup> John Lombe died the following year, in 1722, but Thomas continued the venture, and despite contemporary reports, repeated by a number of modern historians, that the mill 'was far from an unqualified success'<sup>55</sup> Thomas Lombe nevertheless left a fortune of some £120,000 at his death in 1739. William Hutton, an apprentice at Lombe's mill in the 1720s, and author of *The History of Derby*, published in 1791, estimated that Lombe had made around £80,000 from his investment in the mill.<sup>56</sup>

Calladine points out that although Lombe is reported to have said that 'if he had known before he built his mills that the King of Sardinia would have prohibited the export of raw silk, he should not have done it' he nevertheless strove to renew his patent on its expiry in 1732. Both the King of Sardinia and the British government saw the potential good and evil consequences of Lombe's achievement, especially after the expiry of Lombe's patent, but in the event neither expectation was entirely fulfilled. In 1732 Lombe was paid £14,000 as compensation for relinquishing any rights to renew his patent, and to make models of his machinery available to the public; but more than thirty years after the designs came into the public domain, the factory returns of 1765 show only seven organzine throwing mills, and 60 for throwing tram.<sup>57</sup> Wilde places six of the former mills in the Pennine regions,

Of the seven organzine mills there were certainly two at Macclesfield, at least one at Stockport, one in each of Derby and Congleton and perhaps one in Sheffield.<sup>58</sup>

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<sup>54</sup> Calladine, 'Lombe's Mill : An Exercise in Reconstruction.' p.87

<sup>55</sup> Coleman, *Courtaulds, an Economic and Social History*. p.16

<sup>56</sup> Calladine, 'Lombe's Mill : An Exercise in Reconstruction.' p.88 and Hutton p.203 note 20

<sup>57</sup> Calladine, 'Lombe's Mill : An Exercise in Reconstruction.' p.96

<sup>58</sup> Wilde, *Growth, Decline and Locational Change in the English Silk Industry of the Nineteenth Century: A Study in Historical Geography*. p.20

but goes on to say that the only mill producing organzine outside the Pennine province in 1765 was 'thought to be in Hertfordshire.'<sup>59</sup> If so, then this mill may well have been the Rookery Mill at Watford, in which town 'silk throwsters' are to be found in the Militia lists from 1758. During August of 1768 The Rookery Mill was certainly offered for lease in the Manchester Mercury as being after the style of Lombe's mill, and with the availability of experienced hands.<sup>60</sup>

It appears, however, that Sir Thomas Lombe did not in fact experience the difficulty in obtaining adequate supplies of raw silk as he so ardently claimed. Calladine suggests that it was only after 1733 that supplies became difficult to obtain .... when not only the government of Piedmont, but also the rest of Italy, realised the implications of an efficient, competitive English throwing industry. In addition, Calladine notes the links of family and friendship which existed between those early entrepreneurs that did establish organzine mills in the style of Lombe's Italian Works; the necessity of their being aware of the true state of supply; and their common interest in discouraging competition by promulgating the belief that organzine production was ultimately uneconomic.<sup>61</sup>

The revolution in working practice created by Lombe's Italian Mill was a small one, but significant. Pre-dating the cotton mills, it showed the manner of things to come : factory workers, factory system.

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<sup>59</sup> Wilde, *Growth, Decline and Locational Change in the English Silk Industry of the Nineteenth Century: A Study in Historical Geography*. p.20

<sup>60</sup> *Manchester Mercury* 2 Aug 1768

<sup>61</sup> Calladine quotes part of a letter from Samuel Lloyd, Lombe's agent in Italy from 1721 to 1733, and purchaser with William Wilson, the mill's manager, of the Derby works after Lombe's death in 1739:

... most people, especially those of the silk trade, believed S<sup>r</sup> Tho<sup>s</sup>: got his money chiefly in the stocks...and not by his Derby undertaking, and if the notion of an impossibility to have a supply of raw silk, (because some Princes in Italy have prohibited the exportation) gains faith, as I hope it will, w<sup>th</sup>. most in England, it will discourage others from the like undertaking,...

Calladine, 'Lombe's Mill : An Exercise in Reconstruction.' p.88

## Power and Poverty

The fortunes of the eighteenth century silk weaver and throwster were largely governed by two great external powers, over which they had little or no control. The first was War, and the second, Fashion. The former proved generally to benefit the silk worker, preventing both the legitimate import of competitive finished goods, and the landing of contraband silks. In a century that began with the War of the Spanish Succession and drew to a close in the midst of the Napoleonic Wars, the English silk industry thrived. Indeed, those problems developing in the last years of the century may be partially attributable to the success of the industry in preceding years, which induced overcrowding in the trade. In the case of London, it is not until the early part of the nineteenth century that contemporary writers begin to refer habitually to the 'silk' areas of Spitalfields and neighbouring Bethnal Green as areas of poverty, where obstreperous, improvident workers lived in squalid and insanitary conditions.<sup>62</sup> Frank Warner paints a picture where '... conditions under which the original Spitalfields weavers pursued their handicraft were as idyllic as their domestic surroundings'.<sup>63</sup> Their houses were built with workrooms on the upper floor, with large windows to maximise the light, and 'pleasant gardens... in which mulberry and other fruit trees grew, and flowers and vegetables were cultivated by the cheerful inhabitants.'<sup>64</sup> Neither this picture, nor the simple overview of a prospering silk industry, takes account of the intermittent long and short-term depressions affecting the trade. The turn could be extraordinarily swift: for example, the *Times* of January 10<sup>th</sup> 1785 reported that the new court fashions kept Spitalfields weavers fully employed, and the court was complimented on its patriotism,<sup>65</sup> but by September 1<sup>st</sup> there is high unemployment amongst Spitalfields weavers, with

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<sup>62</sup> See Maitland's *London* p.1275

<sup>63</sup> Warner, *The Silk Industry of the United Kingdom*. p.57

<sup>64</sup> Warner, *The Silk Industry of the United Kingdom*. p.56

<sup>65</sup> *The Times* 10 Jan 1785 3i

many forced to emigrate.<sup>66</sup> By November 30<sup>th</sup> the weavers are suffering badly, fashion has turned away from silks,<sup>67</sup> and as the year turns, donations and subscriptions are being sought for their relief.<sup>68</sup> While prosperous times exceeded lean ones, the silk worker could weather the uncertainties of his trade, but by January 1789 *The Times* was again reporting the great distress of the silk manufacturers and 'poor weavers' in Spitalfields.<sup>69</sup>

Thus fashion was a less certain ally, following no charted course, and changing seasonally at the vagary of a whim. Nevertheless, even fashion proved kind for much of the century; colours and patterns might come and go, but the demand for silk, and for heavy, embroidered silks and damasks, for laces and braids, remained high until the vogue for muslins swept into England on a French tidal wave. One of the strangest claims of Fashion contributing to the cause of suffering among silk workers and their associates, in direct contrast to the strong dependency of Courtaulds upon the production of mourning silks in the nineteenth century, must be that of extended public mourning. An anonymous scribe of 1710 asserts that many thousand persons, of whom one hundred thousand were involved in the silk trade, 'are immediately affected by Long Publick Mournings, many of which are ruined, perishing impoverished and quite undone.'<sup>70</sup>

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<sup>66</sup> *The Times* 1 Sept 1785 2ii

<sup>67</sup> *The Times* 30 Nov 1785 2ii

<sup>68</sup> *The Times* 19 Dec 1785 & 3 Jan 1786 lii

<sup>69</sup> Christ Church Spitalfields

A Subscription having been opened for the relief of the poor silk manufacturers, and other distressed persons resident in this parish, it is requested that all charitably disposed persons would send their contributions to Sir Robert Mackworth, Bart,

(here follows a list of Banks, Churchwardens etc.)

Such contributions will be distributed in bread and coals to the objects above mentioned, at their own habitations, by a Committee, consisting of the Minister, Churchwardens, and other respectable inhabitants of the said parish.

*The Times* 12 Jan 1789 p.2i

The poor weavers in Spitalfields, driven to the last distress, mean, it is said, next week to wait upon the Minister, and represent their distresses: upwards of thirty thousand souls feel the bitterest effects of poverty, from the present stagnation of this trade.

*The Times* 14 Jan 1789 3iv

<sup>70</sup> Anon *The Case of the Silk Manufacturers etc. Relating to Publick Mournings.* p.1

Tis computed, that there are at least One Hundred Thousand Men, Women and Children within the Bills of Mortality, concern'd and employ'd one way or other, in the Silk Trade, and Three Hundred Thousand more, at least, in other Trades, affected by Long Publick Mourning.

This number, at first View, may possibly seem something extravagant, but it is easie to be accounted for, if we consider, First, the Merchants, who are Importers of Silk, mercers, Silk Men, milliners, Silk Weavers, both Broad and Narrow, Silk-throwers, who, alone, have made it appear, they employ Twenty Thousand Persons. To those already mention'd, if we add the Winders of Silk to the Weavers, which are some Thousands more, besides Refiners, Wire-drawers, Flatters, Spinners, and, particularly, the White-Thread Bone-Lace Makers, which are a Body of many Thousand Persons — We say, these and several others are immediately affected by Long Publick Mourning, many of which are ruined, perishing impoverished and quite undone.<sup>71</sup>

The French Revolution changed more than a political system, and affected the lives of many more than those directly involved in the revolutionary and counter-revolutionary wars that consumed Europe for over twenty five years. If republican principles and loss of the hereditary aristocracy brought temporary devastation to the French silk and lace trades, it also brought change to those industries abroad. Elaborate petticoats and over-gowns gave way to simpler directoire styles, men forsook the satin coats and knee-breeches for knitted 'unmentionables' of fine wool, waistcoats became shorter, and silk shawls became the rage. Areas such as Norwich and Paisley became well known for producing the popular fringed and knotted shawls, but producers of the heavy damasks for furnishings and court dresses suffered serious financial loss. The fashion for silk wall coverings waned too, leaving a gap in demand. The weavers and throwsters of Spitalfields, numerous, prosperous, and still politically powerful felt the cold wind of change. As prices fell the journeymen and workers fought to maintain the

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<sup>71</sup> Anon, *The Case of the Silk Manufacturers etc. Relating to Publick Mourning*. p.1

protected piece rates, as adjudicated by the Magistrates.<sup>72</sup> This last decade of the eighteenth century marks a turning point for the silk industry, and the period of this study 1790-1890, encompassing the industrial revolution and much of the nineteenth century, becomes the real testing ground of the viability of silk manufacture in England.

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<sup>72</sup> The magistrates' decisions had at first been published in the papers. In 1784 they were collected into a book of fabrics and prices. The last version of this book appeared in 1806. 'I have assisted', said a witness in 1818, "in forming all the list prices that have been made since 1784, a general one in 1795 [this was to meet the high prices of that year]; another in 1800; another in 1802; another in 1804; an explanatory one in 1805; and the last in 1806, a general one; and then by the desire of the masters and men I compiled the present book.' Clapham . 'The Spitalfields Acts, 1773-1824'. p.461

## CHAPTER 3. ENGLISH SILK

‘... it is an undeniable Maxim in Trade, that no Country ought to buy from Abroad what their own Soil can produce, or their own People can manufacture at Home.’

D'Olivier de Serres, Lord of Pradel<sup>1</sup>

### A Foreign Product

Throughout the centuries England lacked any coherent, consistent policy regarding the silk industry. Haphazard and volatile, official policy swung between protection and laissez-faire, proving either inadequate or actually damaging to trade. Inherent to the problem was the competition between a 'domestic' product, which had to import its raw material, and the imported finished product of continental industry, originating from the same source. High tariffs payable on imported silks, most importantly upon finished silks, unpopular as they were with the purchasing public, served to level the competitive odds, but the ideal solution, of a truly domestic silk industry able to eclipse foreign production centres, remained tantalisingly unattainable. Quantities of raw silk imported through London and the outports, some three quarters of the total coming from the Levant, increased from 358,000 lbs in 1700 to 834,000lbs in 1800 and 6,689,000lbs by 1850.<sup>2</sup> If to this last figure is added the 470,000lbs of thrown and spun silk<sup>3</sup> then it becomes clearer as to why the seventeenth, eighteenth, and early part of the nineteenth centuries were all marked by determined efforts to promote sericulture in the British colonies, as well as here in the United Kingdom itself.<sup>4</sup>

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<sup>1</sup> Serres, *The Perfect Use of Silk-worms and their benefit*.

<sup>2</sup> Mitchell and Deane, *Abstract of British Historical Statistics*.pp.207-208 The highest imports of raw and thrown silk were in 1857, the year in which Woollams Redbourn Mill came into production. 14,394,000lbs of raw and 641,000lbs of thrown silk. Re-exports accounting for 11% of raw and 37% of thrown silk.

<sup>3</sup> Mitchell and Deane, *Abstract of British Historical Statistics*.p.205

<sup>4</sup>England was not the only northern country to have the desire to establish a domestic or 'colonial' silk industry: attempts to establish sericulture were made in both Russia and Scandinavia, with mixed success. Although in the mid-seventeenth century, the Swedish Queen Christina encouraged the Dutchman, Jakob van Utenhofen, in the breeding of silkworms, the climate again proved an insurmountable obstacle. The first Russian manufactory was opened at Moscow in 1714, and by



Attempts to reconcile the needs of producer, consumer, silk thrower, and silk weaver, were doomed to ultimate failure. The nineteenth century in particular was marked by the piecemeal whittling away of protective tariffs, until implementation of the 1860 Cobden-Chevalier Treaty between England and France, a treaty removing the last protective tariffs on imported silk, left English producers of both thrown and finished silks open for the first time to the full force of foreign competition.<sup>5</sup> Advocates of free trade in England were manufacturers confident in the superiority of their goods, fearing no foreign competition and desirous of cheaper raw material imports. They were eager not only to abolish direct duties on imports of the basic raw materials, but also on other commodities: it was argued that abolition of the corn laws would both enable foreign producers to afford more English products and keep domestic food prices low, assisting manufacturers to resist any demands for increased wages based on the cost of living. Furthermore, it was hoped that sale of continental grain to England would raise food prices abroad, with a corresponding increase in foreign labour costs. Continental free trade advocates were the agricultural producers and exporters ~ landowners, wine producers, ~ desirous of acquiring cheap manufactured goods and machinery. Free traders included American cotton growers and English cotton manufacturers, but not the majority of silk manufacturers.

### **The Silk Trade**

The throwing branch benefited from a general trend throughout the eighteenth century for duties to favour the import of raw silk over that of thrown silk, and to equalise the duties payable on China and Italian silk.<sup>6</sup> An element of schizophrenia was apparent in governmental attitudes towards the silk industry and

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1717 there were sixteen, engaged in producing shawls, kerchiefs, and bridal veils. Scott, *The Book of Silk*. p.210

<sup>5</sup> Exports of English silk were valued at approx. £1.5 m at the time of the Cobden-Chevalier Treaty. Imports increased from an average £2m before 1860, to £6m in 1861, £9m in 1866, £11m in 1868, and £16m in 1895-1900. Chapman, J.S. *Work and Wages* Vol 1p.211

<sup>6</sup> Coleman, *Courtaulds, an Economic and Social History*.p.19

the imposition of tariffs: while it desired to encourage the manufacture of silk, placing the heavier duty on worked and dyed silk, the duty on raw silk was still a great deal higher than the comparable duty placed on the import of raw silk into France. In addition, France had advantages both in the quantity of silk available, and in the proximity of those supplies, of which a considerable amount was of domestic origin.

**Table 3.1 Silk Import Duties 1704-23**  
(Per lb. of 16oz)

	China		Raw Bengal		Italy		Thrown		
	s.	d.	s.	d.	s.	d.	s.	d.	
<b>1704-47</b>	2	6	1	3		11	<b>1704-47</b>	3	2
<b>1747-50</b>	3	2	1	7	1	3			
<b>1750-65</b>	3	2	1	3	1	7	<b>1747-65</b>	4	0
<b>1765-79</b>		10		10		10	<b>1765-79</b>	4	6
<b>1779-84</b>		11		11		11	<b>1779-81</b>	4	9
							<b>1781</b>	4	11
							<b>1782-4</b>	5	2
<b>1784</b>	3	0	3	0	3	0	<b>1784</b>	7	4
<b>1797</b>	3	3	3	3	3	3	<b>1797</b>	8	0
<b>1801</b>	5	1	3	9	5	1	<b>1805</b>	11	5
<b>1807</b>	5	5	4	9	5	5	<b>1807</b>	12	2
<b>1817-23</b>	5	6	3	6	5	6	<b>1814-23</b>	14	7

Source: Coleman 1969 *Courtaulds, an Economic and Social History* pp.17,18

From Table 3.1 it is clear that import duties on raw silk, from whatever source, rose steadily between 1704 and 1750. Duties on China and Italian silk continued to rise until 1765, only Bengal silk, imported under the monopoly of the East India Company<sup>7</sup> from the British colonial territories, being granted a reduction in duty after 1750.

For the importers of raw silk, the throwsters and single warp manufacturers, the last quarter of the eighteenth century was a time of expansion

<sup>7</sup> 'Although several changes were introduced into the system of buying the raw silk in India after the middle of the eighteenth century, and sometimes special commercial concessions were given to the resident agents, the exclusive right of exporting the raw silk to England was held by the Company until the year 1835.' Rawley *Economics of the Silk Trade* p. 327

and promise. By contrast, the duty payable on thrown silk rose continuously, from 3s 2d in 1704 to 5s 2d in 1784. As shown in Table 3.1, the first quarter of the nineteenth century saw the reintroduction of higher duties on all silk imports, raw and thrown. While the duty on raw silk climbed abruptly from the low figure of 11d per lb in 1779-84 to 3s in 1784, then to 5s 6d in 1817, an increase of six times in approximately 30 years, that on thrown silk, already high, merely doubled by the end of the century, and trebled by 1814.

Between 1765 and 1784 the duty on thrown silk was never less than five times the duty on raw; thereafter only Bengal silk could be imported at anything approaching such a margin. From 1784 therefore, although duties on raw silk continued to be lower than those on thrown silk, the rise in the duty on raw silk materially lessened the differential, and consequently the profitability of the throwing mills. Herz refers to a period of decline commencing in 1785 as the product of 'a sudden reaction against the use of silk for both dress and furniture ... and within eight years four thousand looms were shut in Spitalfields'<sup>8</sup> although combined imports of raw and thrown silk continued to increase, reaching a peak in 1860-64. In contrast, the import of thrown silk remained fairly steady between 1750 and 1830. It is most noticeable that imports of thrown silk increased dramatically between 1700 and 1725, that imports of both raw and thrown silk fell gradually between 1725 and 1745, recovering thereafter. Taken year by year, it is to be remarked that these trends were punctuated by peaks and deep troughs. From 1745 until 1815, the two commodities follow similar patterns, although, as in 1750 and 1811 particularly, the falls in thrown silk tend to be much more exaggerated than corresponding falls in imports of raw silk.<sup>9</sup> Imports of thrown silk fell in 1810-14, but cuts in re-exports delayed the effect of this fall until 1820-24, when proportional parity is reached with severe cutbacks in re-exports of

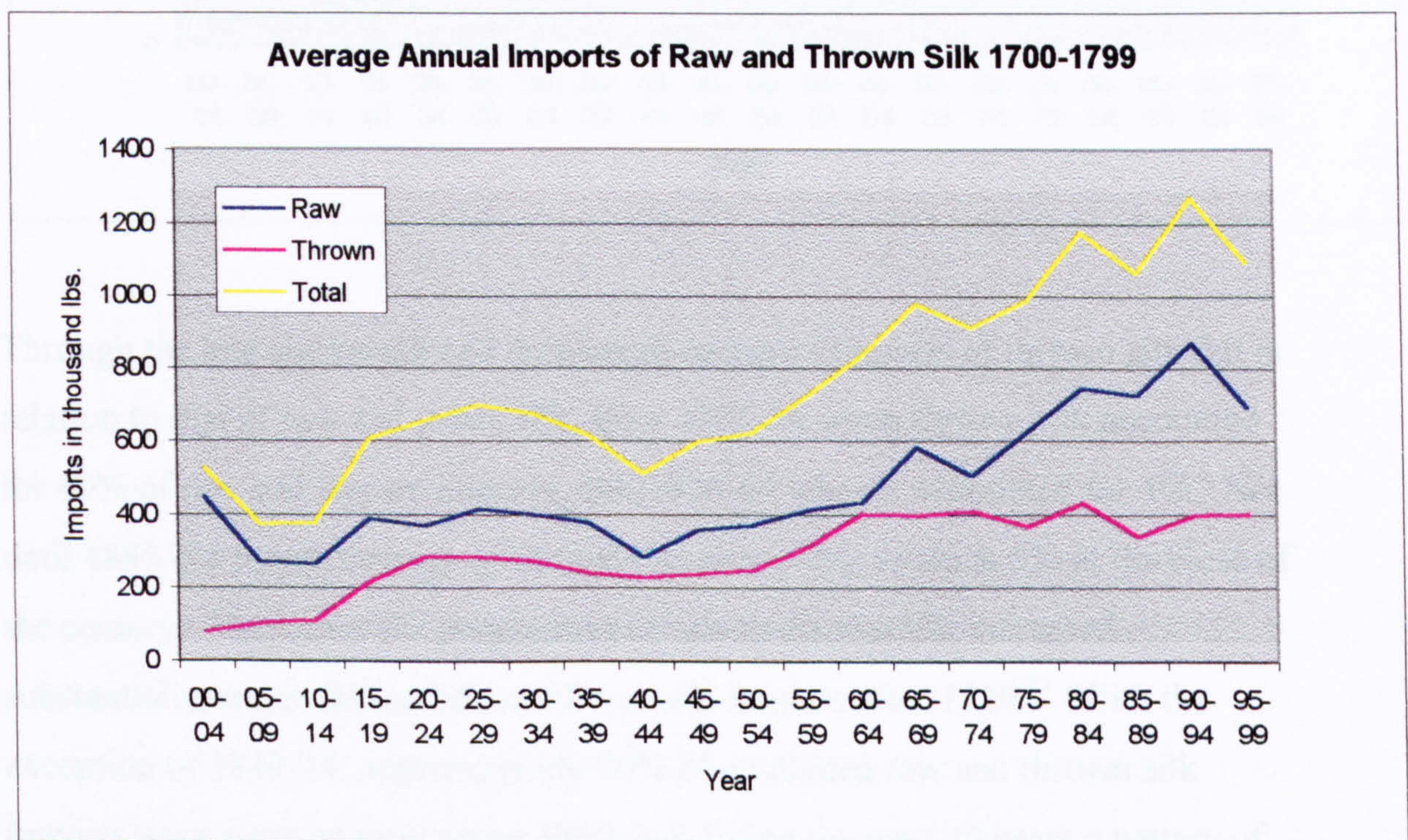
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<sup>8</sup> Herz, 'The English Silk Industry in the Eighteenth Century'.p.721

<sup>9</sup> See also Coleman, *Courtaulds, an Economic and Social History*. graph page 15: Imports: (retained) of raw and thrown silk, 1700-1830

both raw and thrown silks. It is apparent from Chart 3.1 that while the amount of thrown silk remains within a narrow band, the import of raw silk increases dramatically, to reach a high point during the years 1860-64<sup>10</sup> at which time imports of thrown silk had fallen to their very lowest ebb. For much of the eighteenth century the general trend shows increased imports of both raw and thrown silks in a ratio of approximately 3:2. From forming 85% of raw and thrown silk imports at the commencement of the century, raw silk fell to 52% around 1760, recovering to form between 60%-70% from 1775-1810.

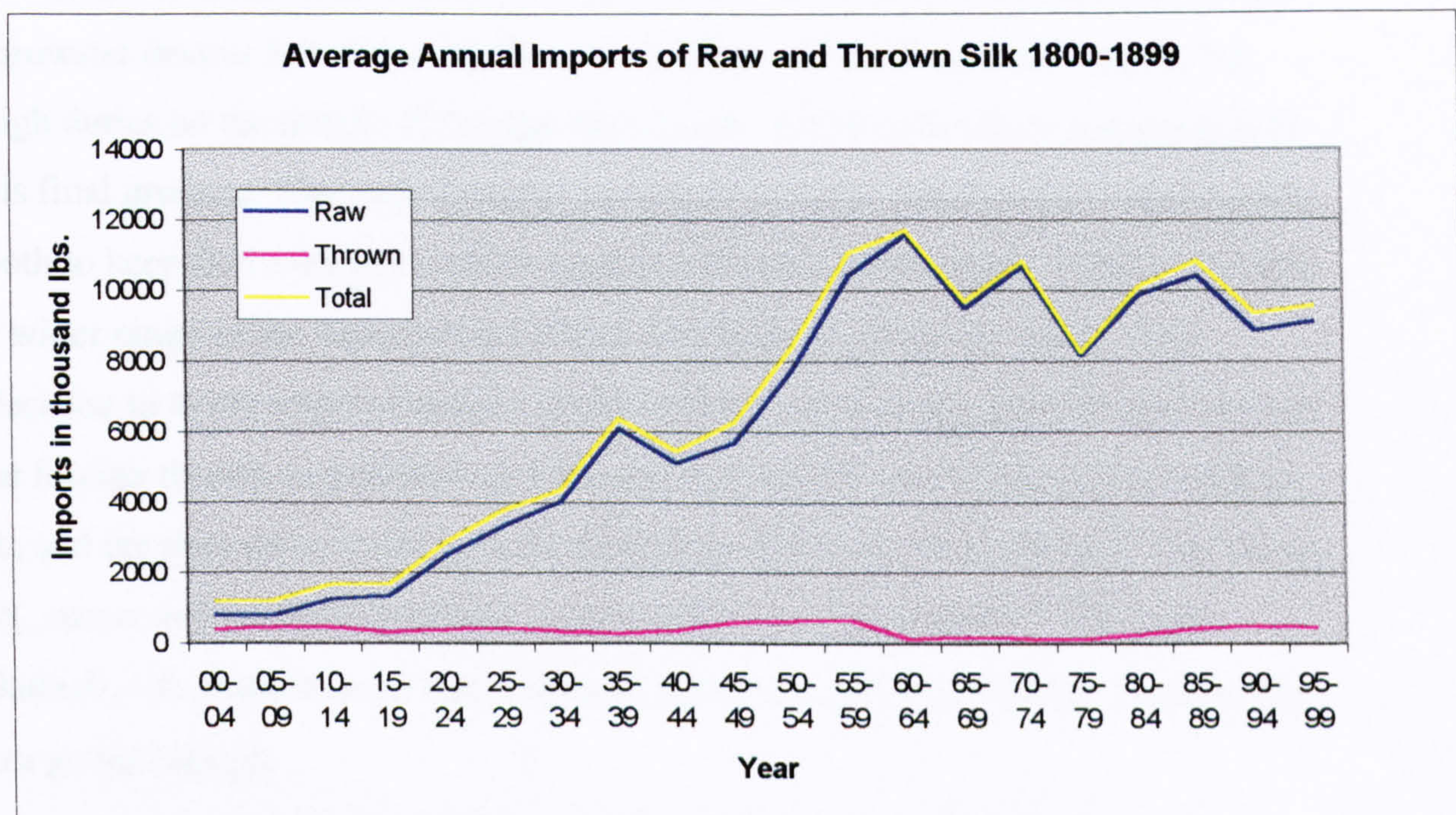
**Chart 3.1 Imports of Raw and Thrown silk to the United Kingdom  
1700-1799**



Source: Charts 3.1 and 3.2 Mitchell and Deane (1962) pp.205-207

<sup>10</sup> Charts 3.1 & 3.2 show imports of raw and thrown silk as five-year averages, thus although the five year period 1860-64 reveals that imports reached their highest average over a sustained period, individual years achieved still higher rates. See Appendix IV. Table A.2

**Chart 3.2 Imports of Raw and Thrown silk to the United Kingdom  
1800-1899**



Through the late eighteenth and nineteenth centuries imports of thrown silk fell in relation to that of raw and waste silk, from 1750-54 when thrown silk accounted for 40% of raw and thrown imports, until 1860-64 when it accounted for 1%. Not until 1885 did the percentage of thrown rise above 2%, to reach 5% at the close of the century. Thereafter the proportions of raw to thrown silk increased substantially, never falling below 90% of silk imports after 1829.<sup>11</sup> With the exception of 1810-14, approximately 90% of combined raw and thrown silk imports were retained until about 1860; but during the next 30 years a pattern of higher imports of raw silk and lower imports of thrown is established together with higher proportional re-exports, until these are abruptly curtailed in the last years of the nineteenth century.

<sup>11</sup> Some of this silk was re-exported, but calculated figures for retained silk imports after 1785 affect the above figures only minimally ~ nowhere is the differential greater than 3 percentage points: in 1850-54 when the percentage of retained thrown silk dropped to 60% although 91% of

Badnall's claims that the commercial interests of throwster and manufacturer stand diametrically in opposition<sup>12</sup> are clearly illustrated here. The throwster desires low duties on the raw silk with which his process begins, but high duties on the import of foreign thrown silk, which is in direct competition to his final product. The manufacturer, conversely, wants low duties on thrown silk, both to keep down the price of the domestic product and to make readily available a wider range of the basic material from which his products are made. The decision to lower import duties in April 1824 by act of Parliament, so that the duty on foreign thrown organzine was reduced from 14s 7d per lb.(Italian) to 7s 6d per lb, and the duty on raw silk from 5s 6d (Italian & China) or 4s (Bengal<sup>13</sup>) to 3d per lb., succeeded in pleasing neither protectionists nor free-traders.<sup>14</sup> Richard Badnall, silk manufacturer and free trade advocate, deplored that the measure did not go far enough:

By the duty on thrown silk not having been sufficiently reduced, that effectual benefit has not been afforded, which evidently might have been, to the British Manufacturer as a competitor with the French; and by its limitation to 7s 6d hopes have been held out to the Throwster, which the very principles of Free Trade were diametrically opposed to.<sup>15</sup>

He insists vehemently `that no two interests can be so opposite as that of the Silk manufacturer and the Silk throwster; and I venture to pronounce it an impossibility for Government to do justice to the former, *under the existing laws*, and at the same time, to acquiesce in the opinions and wishes of the latter.'<sup>16</sup> Justification for his argument was to be found in the differential between imported trams and

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<sup>12</sup> Badnall, *A View of the Silk Trade*. p.19 See also *The Times* 28 Oct 1825 4i regarding the conflicting interests of the weaver and throwster.

<sup>13</sup> Bengal silk constituted by now a large part of silk manufacture in England, particularly for the American market. It was of inferior quality, carried a heavy dye, and sold cheaply.

<sup>14</sup> Regarding thrown silk a correspondent to *The Times* writes 'in the first instance, the manufacturer here is subject to 25-30 per cent more than the foreign one: and in the second, that which he gets thrown in this country he pays 80 to 100 per cent more for a similar operation at the first silk mills in Italy!' Letter from 'Mercator' dated 26 Oct 1825. *The Times* 28 Oct 1825 4i.

<sup>15</sup> Badnall, *A View of the Silk Trade*. p.19

<sup>16</sup> Badnall, *A View of the Silk Trade*. pp.19-20

organzines to France and England, and in the different rates of throwing silk in the two countries, where the higher cost of production must be set against the import duties.

**Table 3.2 Comparison of the French and English Rates of Throwing Silk 1828**

Deniers	France		England		Difference	
	s	d	s	d	s	d
<b>TRAMS etc.</b>						
24-30	2	2 <sup>1</sup> / <sub>2</sub>	2	9		6 <sup>1</sup> / <sub>2</sub>
30-70	1	7 <sup>1</sup> / <sub>4</sub>	1	10		2 <sup>3</sup> / <sub>4</sub>
<b>ORGANZINES</b>						
20-32	3	1	5	0	1	11
32-45	2	7 <sup>1</sup> / <sub>2</sub>	4	0	1	4 <sup>1</sup> / <sub>2</sub>
<b>ORGANZINES, GRANDE FACON</b>						
20-28	4	8 <sup>1</sup> / <sub>2</sub>	6	0	1	3 <sup>1</sup> / <sub>2</sub>
28-50	3	8 <sup>1</sup> / <sub>2</sub>	4	9	1	0 <sup>1</sup> / <sub>2</sub>

Source: Richard Badnall 1828 *A view of the Silk Trade* p.37

The Italian domestic market had always consumed the lion's share of the domestic product, and official imports of Italian raw silk into the UK were therefore necessarily small.<sup>17</sup> The difficulty in obtaining supplies and the small quantity imported, may explain to some extent the low duty on Italian raw silk, (11d) in comparison to that on Bengal (1s 3d) and China (2s 6d) up until 1747.(Table 3.1)

<sup>17</sup> The average Italian reeling mill produced approximately 7.5 tonnes of silk annually, with about 100 workers. Few reached an output of 20 tonnes per year. Improvements in transport, particularly in rail transport, meant that by the 1870's there were 930 reeling mills in 590 Italian towns, 300 of which were in Lombardy. Federico, *An Economic History of the Silk Industry 1830 - 1930*. p.17

Smuggling was endemic to the silk industry, and according to the English branch of the manufacture, quite devastating to domestic profits.<sup>18</sup> High import duties and intermittent import prohibitions, combined with the high re-sale value of a low-bulk commodity, had combined to make silk a staple for smugglers. Not only was it the activity of south coast 'free traders', or manufacturers such as Signoret, but also of noble ladies travelling abroad and gentlemen returning from the Grande Tour. An entry in Lord Hatherton's diary describing his return home in January 1820 in company with friends, records:

... Mrs. L had smuggled shamefully in her pockets, her pelisse, her work baskets, full of contraband articles ~ besides which she had without my knowledge taken the horse hair out of the cushions of the carriage, and filled them with silk stockings and ribbons. The carriage would have been forfeited, if the fraud had been discovered, but she rode off with them triumphantly.<sup>19</sup>

Customs officials were urged to be vigilant and prevent such relatively small-scale smuggling by private persons, but success was mixed. Body searches were permissible, but had to be carried out with care and circumspection, particularly in the case of female travellers who were to be searched only by designated women.<sup>20</sup>

These then, were the problems besetting English silk manufacturers: problems of supply; of quality; of fluctuating import duties; of competition from legitimate imports and greater competition from smuggled goods. Were throwing mills more or less susceptible to these difficulties than the weaving shops? Duties were generally lower on raw silk than on thrown, but profit margins were smaller<sup>21</sup> and the 1722 ban on all raw silk exports from the Kingdom of Savoy, which

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<sup>18</sup> In 1825 W. Hale claimed that '...not one piece in ten now sold in London under the denomination of Spitalfields goods, had been manufactured there; and this was not to be attributed to so much to the superiority of the foreign article, as to its cheapness; and the easy facility afforded to smuggling must of course press heavily on the interests of the British manufacturer.' *The Times* 4 Oct 1825 p.3i

<sup>19</sup> Hatherton Diary 1819-20, quoted in Fay, *Huskisson and his Age*.p.140 Mrs Littleton appears to have been an habitual smuggler.

<sup>20</sup> Minute Book of the Customs 16 July 1823 Fay, *Huskisson and his Age*.p.141

<sup>21</sup> Federico estimated the value added after throwing to be approximately 10%. Federico, *An Economic History of the Silk Industry 1830 - 1930*.p.20



included Piedmont, was an unfortunate repercussion of Lombe's successful spy mission. Both France and England suffered severely from this ban, each government finding itself impotent, unable to retaliate since the weaving industry craved the fine Piedmont organzine. The ban on the export of raw silk remained until 1834, nor was Savoy alone in imposing similar bans. The throwsters of Macclesfield petitioned the House of Lords in 1831 'to take their abject and increasingly miserable Situation into their Consideration, and afford them timely and speedy Relief, by granting the Silk Throwster further and increased Protection against Foreign Competition.'<sup>22</sup> England stood at a disadvantage with her Mediterranean competitors, but a remedy appeared to be just on the horizon, where her colonies could provide ideal conditions for sericulture.

### **Colonial Silk and the Opportunities of Empire**

In the New World, Virginia, Georgia, and South Carolina offered real prospects for success. The climate was equitable, bounties were offered, loans made to entrepreneurs, and substantial sample amounts of silk shipped to England between 1668, when Charles II was the recipient of a small quantity of American raised silk, and 1771, when '2300lbs. were produced at Philadelphia, from which a gown was made for Queen Charlotte.'<sup>23</sup> The failure of the Anglo-American silk industry to supply the requirements of the British market during this period, Herz suggests, lie neither with the climate, nor transport problems, but with the difficulty of obtaining cheap labour. Slave labour did not, as anticipated, solve labour problems: the silkworms and their product required greater skill and care than a slave labourer was able, or willing, to give. 'Both the actual and the nominal rates of wages for adult white labour were infinitely higher in the colonies than in

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<sup>22</sup> PP 1831-32 *Journal of the House of Lords* Vol.LXIV p.42 col.2.

<sup>23</sup> Herz, 'The English Silk Industry in the Eighteenth Century.' p.717

Italy and France, and consequently the higher cost of production was from the first fatal to the industry in North America.’<sup>24</sup>

The East India Company came closest to establishing a ‘British’ control over production from grain to thread, in plans formulated during the last years of the eighteenth century, both to utilise their own surplus, and indeed, to increase their imports of raw silk into the United Kingdom:

This project is no less than a determination, on the part of the “United Company of Merchants trading to and from the East Indies” to commence *manufactures* in Great-Britain, by *throwing their own silk* in large quantities, and in a number of mills hired by them in this country for that purpose.

The fallacious arguments adduced in favour of this alarming innovation will appear from the company’s Reports; and the broad, candid, and unequivocal reasons by which it is opposed

<sup>25</sup>  
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The First Report of the East India Company’s Committee of Warehouses, 1<sup>st</sup> Feb. 1794, noted the opposition of merchants and others interested in the silk trade, but asserted that the intentions of the Company ‘were not sufficiently understood’.<sup>26</sup>

The plan is calculated not altogether for the Company’s benefit; the interest of the country at large is also involved therein: it will be seen that Italy supplied of thrown silk,

	Sm lbs
In the year 1791	470,195
And in 1792	436,875
Average	453,535

Of this quantity it is conjectured, that, if due care be taken in the selection of the cocoons, and a proper degree of attention be given to the first operation of the winding, at least two-thirds of what is now brought from Italy, may be thrown in this country, from a raw material, the growth and produce of British territories. The throwing of 300,000 pounds of silk will create employment for at least 7,000 persons, nearly the whole of which may be taken from the parish workhouses, whereby an advantage will be derived

<sup>24</sup> Herz, ‘The English Silk Industry in the Eighteenth Century’. p.718

<sup>25</sup> Anon, *Considerations on the Attempt of the East India Company to become Manufacturers in Great Britain*. p.5

<sup>26</sup> Anon, *Considerations on the Attempt of the East India Company to become Manufacturers in Great Britain*. p.6

to the country of not less than £70,000 per annum, at present expended in their maintenance.<sup>27</sup>

As with earlier ventures into silk production, a major strand of the company's self justification is found in this recurring theme of providing work for the poor, especially for those in workhouses. The anonymous critic scorns 'the cant of benevolence and of public utility', which, he claims, 'is often too successfully employed to impose upon the world, in favour of the projects of private interest' castigating the assumption and promise of either permanent employment at home, or stability of supply from abroad.

Despite violation of its charter granting status only as 'Merchants trading to and from the East Indies', the Warehouse Report justifies the contemplated involvement in manufacture by continuing to stress the need of the country, rather than the pursuit of profit:

... It is self evident, that the riches and power of the nation are inseparably connected with the success of its trade and manufactures. True policy therefore dictates, that all practicable measures should be pursued for lessening the dependence upon foreign powers, for any of the materials of labour, of which we stand in need. In the great staple article of woollens (with the exception only of a few dying drugs), we have everything within ourselves. Our cotton fabrics are materially assisted by our West-India islands. But in the silk trade, which in its various branches gives employment to perhaps not less than two hundred thousand persons, men, women, and children; the supply of the raw commodity has been, until of late years wholly, and is now in great part, furnished from countries no otherwise connected with great Britain, than through the medium of a commercial intercourse, which it is not impossible, under a continuance of the present distracted state of continental politics, may hereafter be rendered highly precarious.

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<sup>27</sup> Anon, *Considerations on the Attempt of the East India Company to become Manufacturers in Great Britain*. p.6

Far from admitting of possible problems of supply from India,<sup>28</sup> the Report makes great play of the actual instability in Europe, where the French Revolutionary wars had severely restricted the supply and transport of European silk. While much of the criticism was open to debate, (for if the Company were to use English mills and English labour, there might be every chance that the trade and industry would grow, and at the very least, there was need for imports of silk to keep existing throwsters and weavers in employment,) the greatest criticism could not be refuted: the quality of Indian silk did not match that of European origin. Manufacturing experiments in 1787 and 1792 had proved the yarn unsuitable for broad weaving, and this later venture would again cause the Company heavy losses in attempting to bring their silk to a quality fit for organzine. In the production of which commodity, only the very best of the best quality raw was suitable.

‘...would the silk manufacturer, already smarting under the neglect of the Public, be able once more to fix the caprice of fashion in his favour, if he should imprudently substitute the dingy and woolly produce of Bengal, for the brilliant and firm staple of Italian organzine?’<sup>29</sup>.

A quantity of English thrown Bengal silk was offered for sale in February 1795, and the 3<sup>rd</sup> Report of the company, claiming success, cites a number of manufacturers using their new product in the ribbon trade. Ribbon weaving was certainly less demanding than that of broad weaving, but even so, our critic is wholly condemnatory, and claims that the ‘testimonials’ are at best equivocal. There is some justification for his opinion, since each is somewhat circumspect in their approval of the sample used and although hopeful of improvements in the

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<sup>28</sup> The critic asks with irony: ‘Has the power of the company in the East been so *long*, or so *legitimately* acquired, as to preclude any apprehension of disturbance? Has it experienced no resistance from the NATIVE PRINCES of the vast continent where it exists?’

<sup>29</sup> Anon, *Considerations on the Attempt of the East India Company to become Manufacturers in Great Britain*. p.12

final product, almost all express a desire for finer threads.<sup>30</sup> The project was not greatly successful, entailing more trouble, in the final analysis, than profit, and the East India Company ceased to throw its own silk in 1814.<sup>31</sup>

The most serious and potentially successful attempt to establish a truly domestic silk industry in the United Kingdom originated in the work of an Italian, Count Dandolo, whose experiments in laboratory based sericulture offered new hope for production in a cold climate.<sup>32</sup> During the first quarter of the nineteenth century, in the wake of the repeal of the Spitalfields acts, attempts were made to introduce sericulture and silk production into Ireland. The British Government encouraged it, but not to the point of actual financial investment.<sup>33</sup> As with the introduction of a silk mill to the Hatfield Workhouse in 1818, a particular object again appears to have been to offer useful employment to the poor.

Bearing in mind the climatic constraints detailed in Chapter 1, it is illuminating to read the ebullient diary entry of Lord Hatherton<sup>34</sup> for March 1825:

A third party was to raise a company to cultivate silk in Ireland and in the Colonies. Though part of this scheme, the Irish part, appears the most visionary of all, I have undertaken this. It appears that in Italy many cultivators have lately taken their Silk Worms into Store Rooms; especially Count Dandolo, with the

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<sup>30</sup> Wilberforce Bird, of Coventry, in a letter dated 24<sup>th</sup> July 1795 expressed approval, but stipulated the need for care in selection of the silk, recommending a finer thread, since that offered was too coarse 'for the nicer works of the manufactory, and for a white colour, they do not at this moment appear (nor are they) of a quality sufficiently rich and good.'

Holmes and Co. of Friday Street, found the Bengal silks

'... good in quality and take the dye exceeding rich and bright, in all colours except white. We think they will be applicable in the different manufactories we carry on, when the sizes suit, and answer all the purposes of Italian organzine, except for white goods.'

The proprietors of Leek signed a joint letter, in which it was recorded that the Bengal silk had 'been of great service, and if finer silks are thrown, it will certainly be more so.'

Anon. *Considerations on the Attempt of the East India Company to become Manufacturers in Great Britain*. pp.29-30

<sup>31</sup> Rawlley, *The Silk Industry and Trade*.p.162 Note

<sup>32</sup> The laboratory system described by Dandolo involved the use of ventilators in floor and ceiling to maintain air flow, fireplaces around the walls, and large stoves in the centre. Lighting was by 'small glass oil burners or lamps that yield no smoke' Dandolo, *The Art of Rearing Silkworms*.p.293

<sup>33</sup> Fay, *Huskisson and his Age*.p139

<sup>34</sup> E. J. Littleton, Lord Hatherton, served as Chief Secretary for Ireland.

greatest success. This does away with the difficulty of managing the animal in this climate. Then we know that the mulberry will thrive very well either in England or in Ireland. The only difficulty will be to delay the hatching of the eggs till the mulberry is in leaf. I am sanguine we shall succeed by selecting sheltered spots and southern aspects for the trees, by keeping the eggs covered as long as we can with safety, and by preparing a crop of lettuce for the first fortnight of the animal's existence.<sup>35</sup>

Hatherton is enthusiastically in favour of the project, continuing to exult at the support the project has gained from rational politicians and experienced businessmen including 'the projector' Richard Badnall, Lord Lansdowne, Lord Liverpool and Mr Huskisson. Any hesitation in granting a charter was overcome by the interest of Ireland.

...However, the direction of Capital towards Ireland influenced them to assent. The greatest names as Political Economists and Men of Science have joined us, and the thing is going on well, and appears to excite much conversation.<sup>36</sup>

The company would be the 'British, Irish and Colonial Silk Company', but Hatherton's name does not appear in the list of original shareholders, nor among the patrons and members of the Corporation, although Richard Badnall, Sir Robert Farquar Bart and Gibbon Spilsbury (Directors), together with George Baron Auckland, (Chairman) Alexander Baring and Nathan Mayer Rothschild (Trustees) stood prominently in the list. The new company began with capital of £1,000,000 in shares of £50<sup>37</sup> and had the right to 'introduce, breed and rear silkworms and to

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<sup>35</sup> Fay, *Huskisson and his Age*. p.143

<sup>36</sup> Extracts from Lord Hathertons Diary. Fay, *Huskisson and his Age*. p.144  
Richard Badnall: 1797-1839, holder of patents re: 'his improvements in the throwing, winding or spinning of sewing silks' p.140. Author of 'A View of the Silk Trade' 1828; he contested the parliamentary seat of Newcastle-under-Lyme in 1837.

<sup>37</sup> Dandolo, *The Art of Rearing Silkworms*. no pagination, preface

spin, twist and throw the silk' in the optimistic hope that the need to import costly raw silk would soon belong to the past.<sup>38</sup>

The massed array of astute financial brains and hard headed business men suggest that the investment was expected to be an assured success, rather than a high risk venture. Huskisson, President of the Board of Trade, was also Honorary President to the company, lending an aura of Government sanction to the project, and incidentally giving ammunition to the opposition benches when soon after the Charter had been granted, Alexander Baring proposed a salary increase for the President of the Board of Trade. A clear link was suggested between the two events, on the basis that the company was 'expected to prove a most lucrative speculation'<sup>39</sup> Sadly, despite cheap labour, the enterprise failed and rewards were few.<sup>40</sup> The interest and involvement of Huskisson is perhaps no surprise, considering his strong advocacy of Free Trade. Real success in this experimental venture would support his claims that protective tariffs were both detrimental to trade and unnecessary, but the condition of England as regards silk production was summed up rather more pragmatically by Messrs. Guillotte and Penny, Jacquard Machine makers, in 1833. In addition to the primary problems of sericulture it is intimated that even the best silk imported from Europe was not of that special quality used by the French and Italian master manufacturer, thus constituting one further barrier to equal competition between the continental and English producer and adding extra incentive for the aspiring English sericulturist.

Owing to the temperature, England has not witnessed the success of the mulberry-tree, and consequently does not enjoy the advantages resulting from the produce of the silk-worm: it is true,

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<sup>38</sup> 'And whereas if by the breeding and rearing the Silk Worm in the United Kingdom of Great Britain and Ireland or in our dominions abroad sufficient of Silk for the purpose of manufacture would be obtained so as to supersede the necessity of importing into the United Kingdom Silk and Silk in the Cocoon.'

PRO C66 14294 Twelfth Part of Patents, George IV. 6  
Extracts in Fay, *Huskisson and his Age*. p.147-8

<sup>39</sup> Any financial connections between Huskisson and the Company were denied.

<sup>40</sup> The Royal Dublin Society had subsidised the Irish silk industry for many years. Restrictive trade laws made silks so expensive as to be almost unsaleable. In 1849 attempts to enforce a higher scale than in England were resisted, resulting in a partial revival of trade. Wardle, *Silk: Its Entomology, History and Manufacture*. pp.139, 149.

her vast possessions in India, and her commercial relations with China, enable her to furnish the manufacturer with as much and more silk than he may want, but the reeling of those silks is so irregular, and their size so coarse, that, to make mere ordinary goods, he must apply to the Italian market, which being often supplied with silks from the East, sends in the trade silks which, though apparently as fine as the French, are nevertheless of a title much heavier.<sup>41</sup>

### **The place of silk among the textile trades**

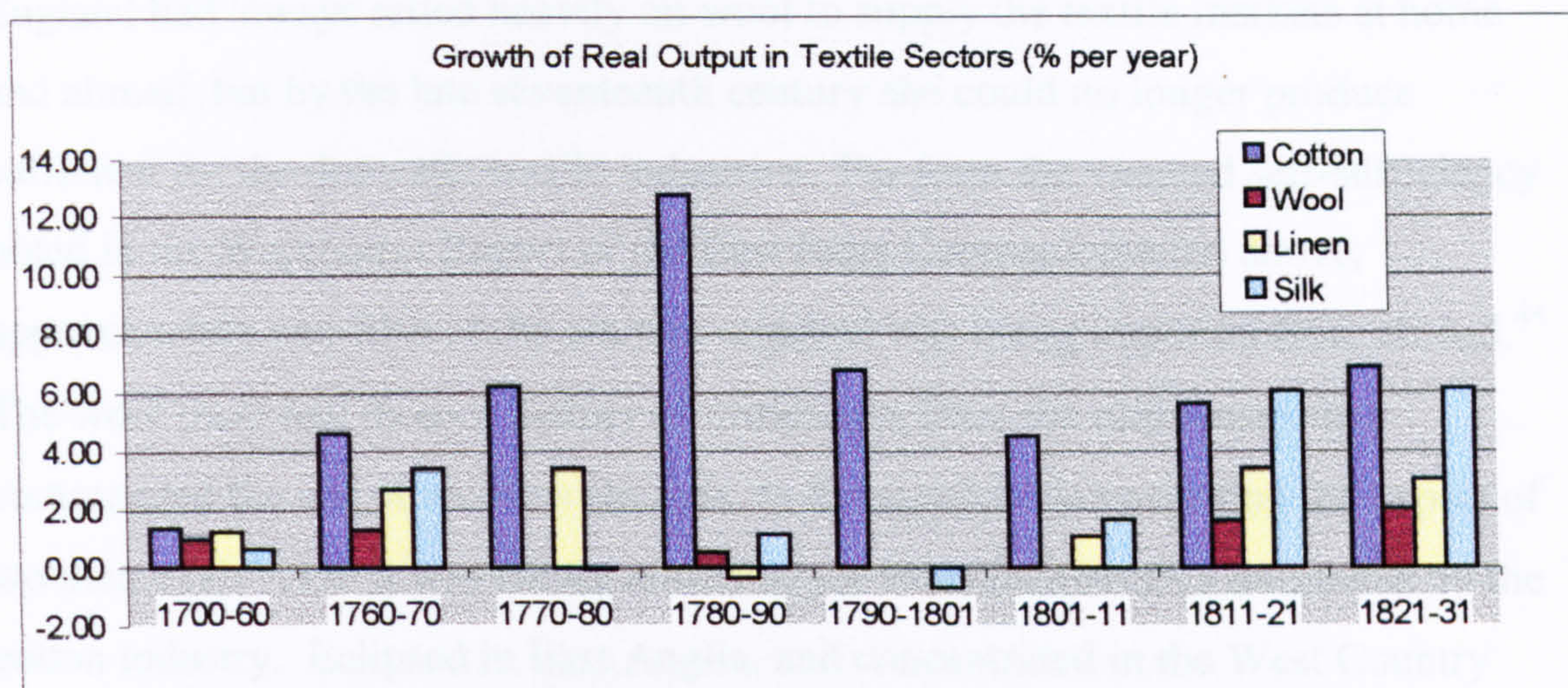
If in purely economic terms silk has been overshadowed by other trades, it was nevertheless a substantial growth industry of the late eighteenth and early nineteenth century. Chart 3.3 compares the relative rates of growth of the four textile industries, cotton, wool, linen, and silk between 1700 and 1831, from which it is clear that silk, despite suffering adverse fortunes during the years of continental war and unrest from 1790 - 1811, was able to make a respectable recovery in the period 1811-1831, at a time when growth in the cotton industry was slowing down. It must, however, be admitted that the size of the two industries were in no degree comparable, cotton being by far the greater in terms of production capacity, output values, and number of personnel employed, at all times other than during the very early years of cotton production.<sup>42</sup>

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<sup>41</sup> Guillotte and Penny, *General Observations on the Silk Weaving in Lyons, compared with the same in Foreign Countries* p.2

<sup>42</sup> See Chart 2; Table 2.4; Table 2.5 & Mitchell and Deane, *Abstract of British Historical Statistics*. Chapter VII 'The Textiles Industries' pp.173-212



**Chart 3.3 Growth in the Four Textile Industries 1700-1831**

Source: Figures from N. F. R Crafts: *British Economic Growth during the Industrial Revolution*. 1985 p.23

Thus the comparison of net output of the cotton and silk industries over the longer term 1770-1870 in Table 3.3, shows that despite a steady rise in the value of silk manufacture from £1million to £8million, over the same period cotton manufacture has risen from little more than half a million pounds to almost £39 million.

**Table 3.3: Net output of the silk and cotton industries 1770-1870<sup>43</sup>**

Circa	Cotton (£m)	Silk (£m)
1770	0.6	1.0
1805	10.5	2.0
1821	17.5	3.0
1836	21.8	6.5
1845	24.3	6.5
1850	21.1	7.0
1855	26.2	8.0
1860	33.0	9.0
1865	30.1	9.0
1870	38.8	8.0

Source: Deane and Cole *British Economic Growth 1688-1959* (2nd Ed.) p.212

<sup>43</sup> 'Estimates of the value of output of the silk industry in the nineteenth century are few and seldom reliable.' p.209 Nevertheless, using a variety of data including manufacturers' statements, import and export figures, plus contemporary estimates, the authors produced the figures given here.

In contrast to the relatively recent industries surrounding cotton and silk, England had always relied heavily on wool to supply the textile markets at home and abroad, but by the late seventeenth century she could no longer produce sufficient for the domestic textile industries. Far from the vaunted self-sufficiency noted in the Warehouse Report of the East India Company quoted above, approximately one-fifth of the amount required was being imported from abroad.<sup>44</sup> The wool trade had its own history of protection, from the ordinances that commanded the use of woollen shrouds, to the regulations governing the export of woollen cloth<sup>45</sup>, but it was the dominant textile manufacture until overtaken by the cotton industry. Eclipsed in East Anglia, and concentrated in the West Country and West Riding of Yorkshire, it still grew massively in aggregate. Cheap labour, mass production of worsteds and woollens, a transition to similar machine production methods as those used in cotton manufacture, and easy access to the ports, first of Hull, and later Liverpool, meant a Victorian boom for wool manufacturers and merchants.<sup>46</sup> If the problem of silk smuggled into Britain posed a major problem for the customs authorities, so too did wool smuggled out of England to mainland Europe. In France, Louis XVI encouraged such activities by offering a bounty.<sup>47</sup> Thus a large seizure of incoming French silks and laces made in Limehouse, and reported in August of 1787,<sup>48</sup> was matched by a seizure of outward bound wool near Hastings<sup>49</sup> and the apprehension at Hull of three

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<sup>44</sup> Mitchell and Deane, *Abstract of British Historical Statistics*. pp.190-191 In 1796, the year of the Warehouse Report, imports of wool stood at 3,454 thousand lbs., a fall on the previous year's imports of 4,903 thousand lbs. The average yearly figure for the domestic Wool clip of the United Kingdom between 1776 and 1799 is given as 90 million lbs, while the total of raw wool imports for England and Wales reaches 5,152 thousand lbs.in 1799. A quantity amounting to approximately one-quarter of the domestic clip.

<sup>45</sup> The export of wool was prohibited between 1660 and 1825 Hoffmann, *British Industry 1700-1950*. p.258

<sup>46</sup> Problems in the machine handling of wool meant that innovations were some twenty years behind the technological processes of the cotton trade.

<sup>47</sup> *The Times* 8 Oct 1787 3iii

<sup>48</sup> *The Times* 7 Aug 1787 3i

<sup>49</sup> *The Times* 9 Aug 1787 3iv

Swedish vessels, the 'Mars', 'Aurora', and 'Maria Magdalena', also smuggling wool.<sup>50</sup>

Cotton rapidly became the new giant of the textile industry, but began in similar circumstances to the silk industry, based on the manufacture and finishing of goods from an imported raw material. The cotton industry lacked the protection afforded to the silk industry, in part at least because there was no serious French or Italian competition. Parallels to the silk industry continue, with the attribution of cotton manufacture in Lancashire to the arrival of immigrants from Antwerp around 1685<sup>51</sup> and plans proposed as early as 1626 'to employ the poor in the spinning and weaving of cotton wool.'<sup>52</sup> Designated as a comparatively minor trade during much of the eighteenth century, production was more scattered than later distribution statistics may infer. In 1786, at Rickmansworth in Hertfordshire, Mr Joseph Strutt operated a cotton manufactory employing local workers and pauper apprentices,<sup>53</sup> and as late as 1851, it is possible to find the occasional cotton weaver in the district of Tring.<sup>54</sup>

The subsequent concentration of production in the north and midlands was due not only to the availability of water power, but to the ease with which the strong Irish linen yarn, so necessary for the warp of the cotton and cotton-mix fabrics, could be imported.<sup>55</sup> Early competition came from the same source as that causing concern amongst silk throwsters and manufacturers, the East India Company importing finished goods. As the silk industry was vulnerable to outside influences, so too the cotton industry. However, as pointed out in an open letter to

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<sup>50</sup> *The Times* 30 Aug 1787 2ii

<sup>51</sup> As with the silk trade, there were instances of cotton manufacture in Manchester before the advent of the Antwerp 'refugees' Cunningham cites Humphrey Chetham, High Sheriff of the County 1635, who made a fortune in Manchester goods, including 'cottons and fustians made from the vegetable material.' Cunningham, *The Growth of English Industry and Commerce in Modern Times*. pp.622-623

<sup>52</sup> Cunningham, *The Growth of English Industry and Commerce in Modern Times*. p.623

<sup>53</sup> *St James Piccadilly, Governors of the Poor Minute Book* 10 Nov 1786. CWA D1871

<sup>54</sup> For example: Henry Green *Census* 1851 Tring Dist. 7g Sched.4

<sup>55</sup> From about 1780 the use of cotton warp became increasingly common. Hoffmann, *British Industry 1700-1950*. p.257

George Canning in 1826, the underlying causes of depression in trade were totally different:

It is no less in vain to compare the stagnation of the Silk Trade with the particular embarrassments of the Cotton Market .....The majority of the Silk Throwsters have shut up their mills; the majority of the Silk Manufacturers have suspended their business, or been driven from it: the Silk Mercers refuse to lay in their usual supplies of English manufacture. Is there anything like this in the Cotton Trade? Are the shopkeepers refusing to purchase English Cotton Goods in the expectation of foreign supplies? Is it not perfectly well known that the great stagnation in the Cotton Market is in the first stage of that commerce, namely, in the traffick upon the raw material? Is it not equally well known that the stagnation in the silk trade is in the production of the manufactured goods, --- that there is a plethora in the one case, and a want of the very pulse of life in the other?<sup>56</sup>

Colonial production of cotton was a great deal more successful than efforts to produce silk, but towards the end of the eighteenth century the American War of Independence, and in the nineteenth, the American Civil War, interrupted both the supplies of the raw material, and the demand for finished goods, contributing to distress among cotton workers, and a period known as the cotton famine.

The great difference between the silk and cotton trades lay in the price of finished goods, and the expanding market for them. Between 1770, when cotton amounted to only 5% of textile output, the importance of cotton production grew until by 1870, it amounted to 46% of textile output. (Table 3.4) By 1826, cotton already accounted for more than one-third of all textiles by value. Silk was a luxury, cotton a cheaper alternative to linen, versatile and hard wearing, that sold in increasing quantities to the masses. The same open letter quoted above, itemises the fluctuations in price between cotton and silk:

Between 1824 and 1825, Cotton Wool rose from 7<sup>1</sup>/<sub>2</sub>d and 9d per pound to 19d and 22d in some kinds: in others from 5d and 6<sup>1</sup>/<sub>2</sub>d to 9d and 13d. Now they are fallen back to the level of their former prices. Has any similar excess of fluctuation occurred in Silk? Was its price ever enhanced 100 or 140 per cent? Nothing

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<sup>56</sup> Anon, *Some Points in the Question of the Silk Trade*. 1826 pp.9-10

of the kind. The excitement of a healthy and hopeful trade there was, no doubt. But the extreme range of fluctuation in the price of this commodity was within 40 per cent.<sup>57</sup>

Even at 22d per pound, cotton was a cheap fibre, and better able to support the increase than silk, already a highly priced commodity. Cotton also offered a thread stronger than wool, coarser than silk, that lent itself easily to machine manufacture. Not only did cotton production soon outstrip that of silk by volume, but by 1805 the net output of cotton by value was five times that of silk, and at its highest point in 1821, equal to six and a half times the value of silk.<sup>58</sup>

**Table 3.4 Net output values of the principal textile industries of the United Kingdom, 1770-1870, expressed as percentages of total textile output.<sup>59</sup>**

Circa	Cotton % of total textiles	Woollen & Worsted % of total textiles	Linen % of total textiles	Silk % of total textiles	Totals (£m)
1770	0.5	58.3	28.3	8.3	12.0
1805	31.9	38.9	23.1	6.1	32.9
1821	35.3	33.5	25.2	6.0	49.6
1836	40.8	31.3	15.7	12.2	53.4
1845	40.3	35.0	13.9	10.8	60.3
1850	37.0	35.6	15.2	12.3	57.1
1855	41.3	31.9	14.2	12.6	63.4
1860	45.5	29.2	12.9	12.4	72.6
1865	38.8	32.2	17.4	11.6	77.6
1870	45.9	30.1	14.6	9.5	84.5

Source: Percentages calculated from Deane and Cole, *British Economic Growth 1688-1959* p.212

Output of silk was never valued at more than nine million pounds, at its peak between 1860 and 1865, but as a percentage of total textile output values the point at which the silk industry was of greatest value to the nation may be placed somewhat earlier, between 1850 and 1860. (See Table 3.3) This was also the

<sup>57</sup> *Some Points in the Question of the Silk Trade* 1826 p.10

<sup>58</sup> Deane and Cole, *British Economic Growth*. p.212

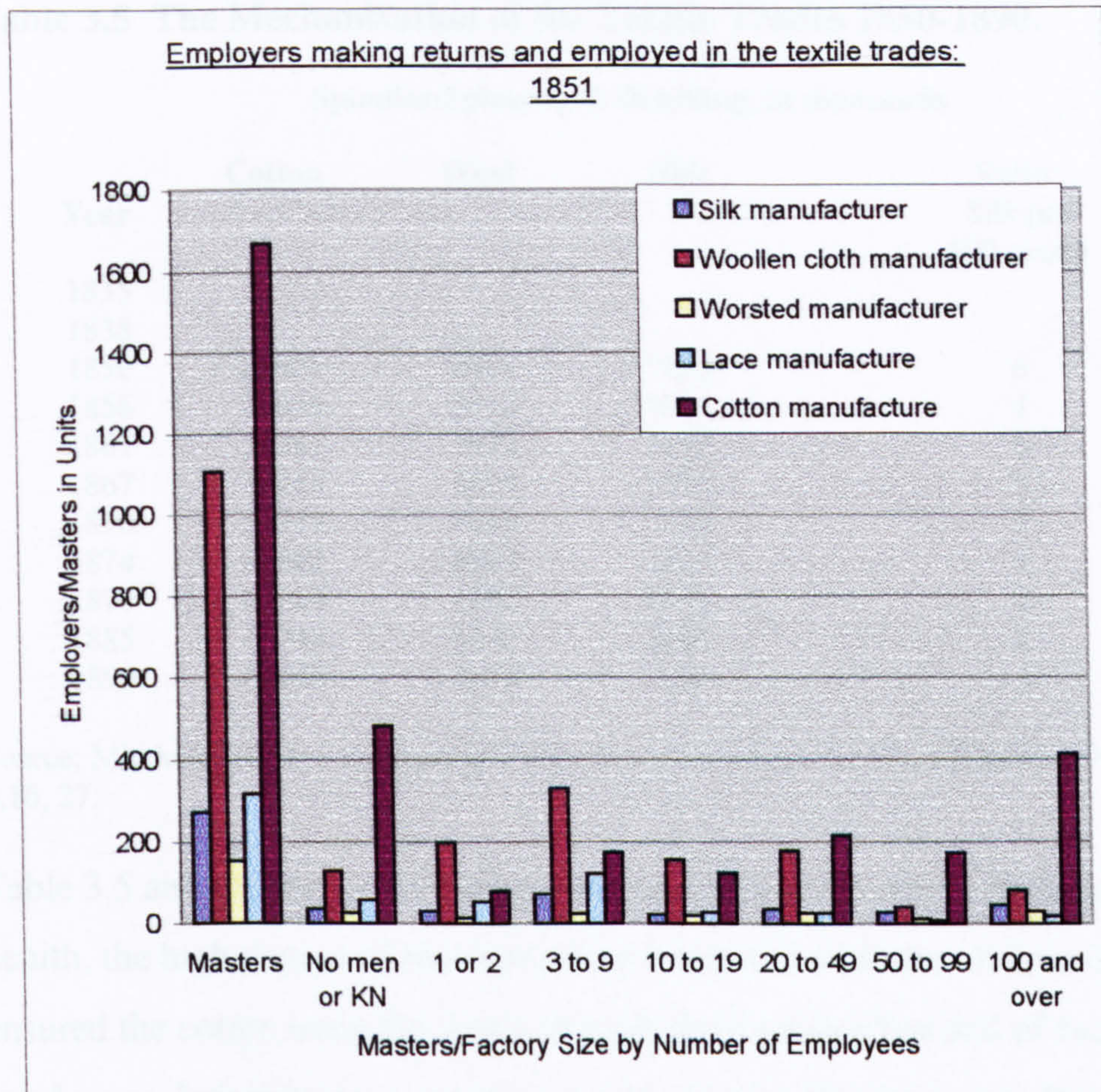
<sup>59</sup> See full table Appendix IV Table A1

period of highest employment for the industry in Hertfordshire, in what may be seen as one of many 'marginal areas' of the dispersed silk manufactory. The Spitalfields acts of 1792 and 1801 that ensured the wages of silk workers in London, Westminster and Middlesex, had done little more than encourage the movement of manufacturers into neighbouring counties (quite possibly influencing movement into Hertfordshire) and their repeal in the 1820s did not help wages in or outside London. Although the weaving of silks and wools on the hand-loom remained profitable long after mechanisation of the cotton industry, these textiles too were gradually becoming factory products, as indeed the process of silk throwing had already become.

### **Factory Production**

From the returns of employers illustrated in Chart 3.4 it is clear that as late as 1851 few silk mills, (46) employed more than 100 workers. (three were to be found in Hertfordshire.) A significant number of masters in each of the textile manufactures were either working alone or employing only minimal labour. In the silk industry the hand-loom weaver not only survived into the third quarter of the nineteenth century, but was part of an industry in which, at its peak, only one third of those involved actually worked in factories. The factory system associated with the industrial revolution therefore co-existed alongside cottage industry, the individual craftsman, or small-scale producer.

**Chart 3.4 Number of Factories and Factory Size 1851**



Source : (figures) Peter Mathias *The First Industrial Nation* p.240

Despite a high proportion of individual cotton masters working alone, 25% of cotton mills each employed more than 100 workers, as against 17% of silk mills. The throwing mill was the earliest and most highly mechanised branch of the silk industry, but Table 3.5 shows that by 1850 the cotton manufacture had 100 spindles for every 6 operating in silk manufacture.

**Table 3.5 The Mechanisation of the Textile Trades 1850-1890.**

Year	Spindles:Spinning & Doubling, in thousands				
	Cotton	Wool	Silk	Ratio: Silk per 100 cotton	Ratio: Wool per 100 cotton
1835					
1838					
1850	20977	2471	1226	6	12
1856	28010	3112	1094	4	11
1861	30387	3472	1339	4	11
1867	34215	6976	1160	3	20
1870	37719	4958	1130	3	13
1874	41882	6008	1337	3	14
1878	44207	6302	1019	2	14
1885	44348	6144	1063	2	14
1890	44505	6575	1030	2	15

Source: Mitchell & Deane *Abstract of British Historical Statistics* Ch. VII p185,198, 210 Tables 6,16, 27.

Table 3.5 and Charts 3.5-3.7 show that even before the cotton trade had reached its zenith, the high degree of mechanisation compared with the other textile industries ensured the cotton trade the lion's share both of production and of factory-based employees. Information on wages contained in the Parliamentary Papers for 1834 suggest wage differentials of between one and three shillings per week in favour of girls and women employed in cotton rather than silk factories.<sup>60</sup> Nevertheless, 31,000 people were employed in the silk industry in 1835, a figure which rose to a peak of 56,000, (of whom 39,000 were female) in 1856 before commencing a long, and at first almost imperceptible, decline as shown in Charts 3.5-3.7.<sup>61</sup>

<sup>60</sup> Coleman, *Myth, History and the Industrial Revolution*. p.102

<sup>61</sup> Mitchell and Deane, *Abstract of British Historical Statistics* A demonstration at the Great Exhibition of 1851 showed how several machines could be managed by a single operative, thus reducing the ratio of employees to output. *Illustrated London News* April 1851



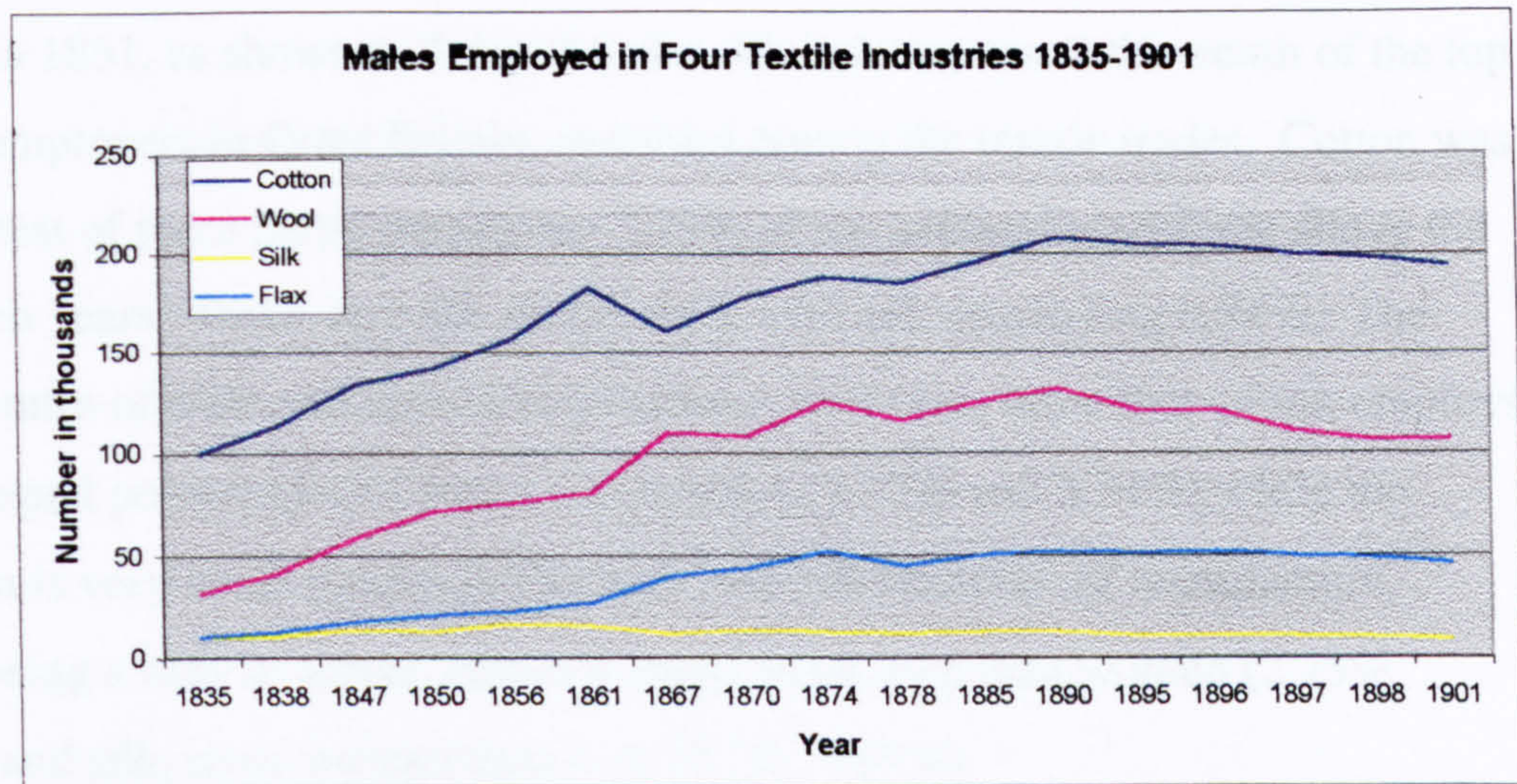


Chart 3.5

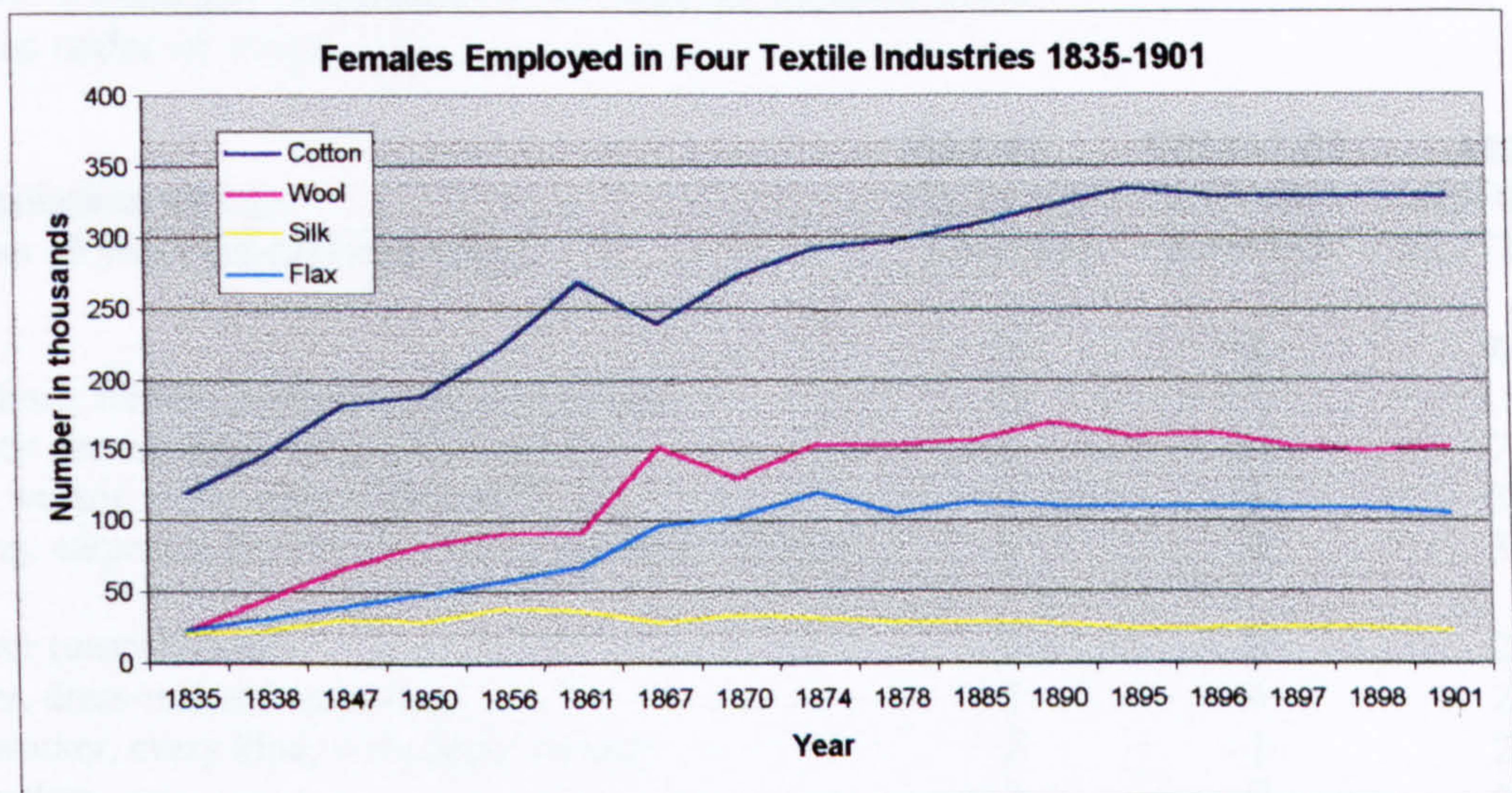


Chart 3.6

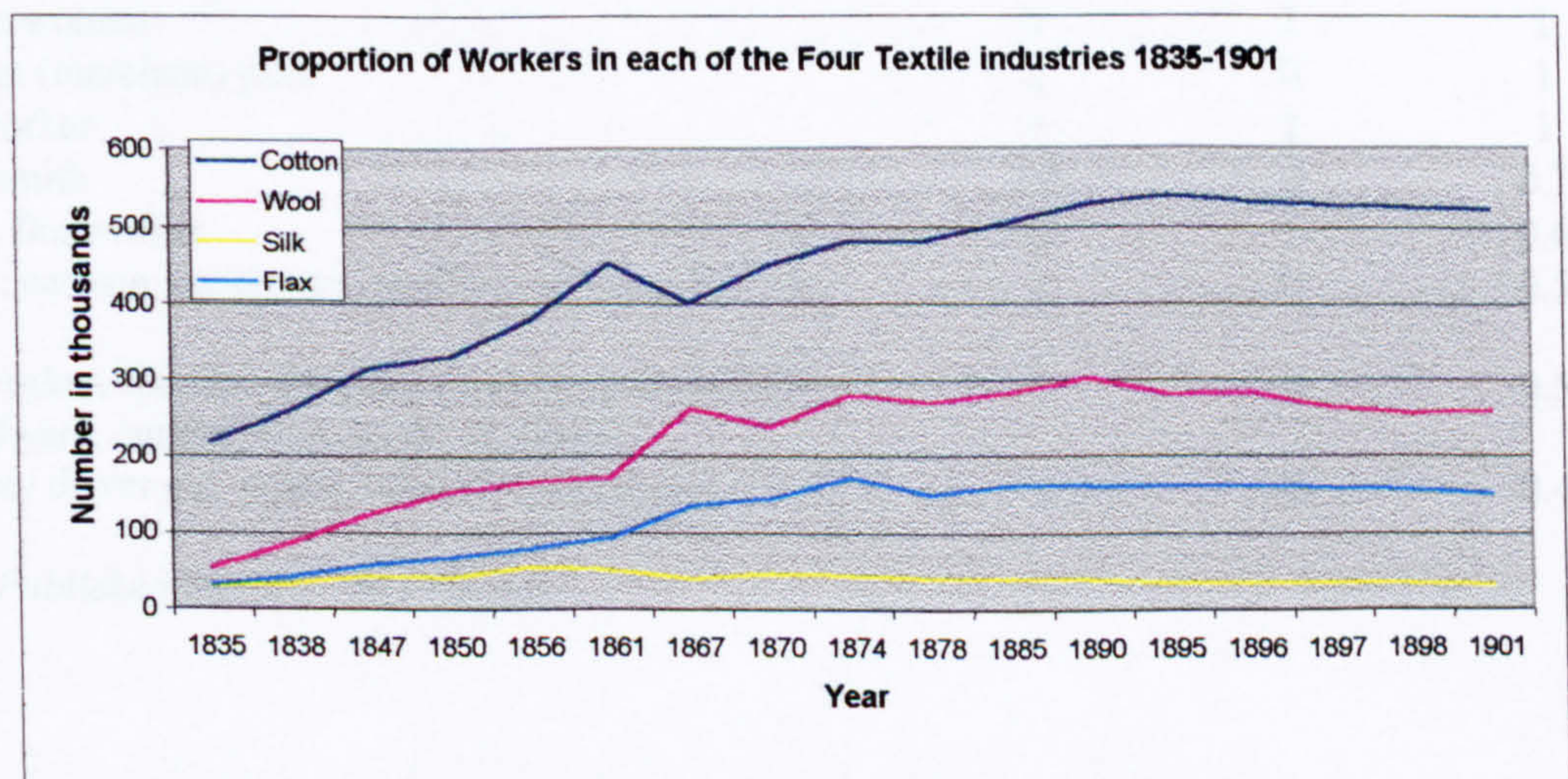


Chart 3.7

Source: Mitchell and Deane (1962) pp188,199,211

In 1851, as shown in Table 3.6, the silk industry stood thirteenth of the top twenty employers in Great Britain, and third among the textile trades. Cotton was the greatest of these latter, employing 3.34% of the national workforce above the age of ten years. Wool, at 1.8% stands next, with silk employing 0.84%. The relative rates of male and female employment, however, show that cotton employs almost equal percentages of males and females (3.35% and 3.34%) while the variation is very much greater in the wool and silk branches of manufacture. Wool, being a heavier fabric, employs many more men than women (2.25%, 1.39%) and silk, more women than men (0.7%, 0.98%).

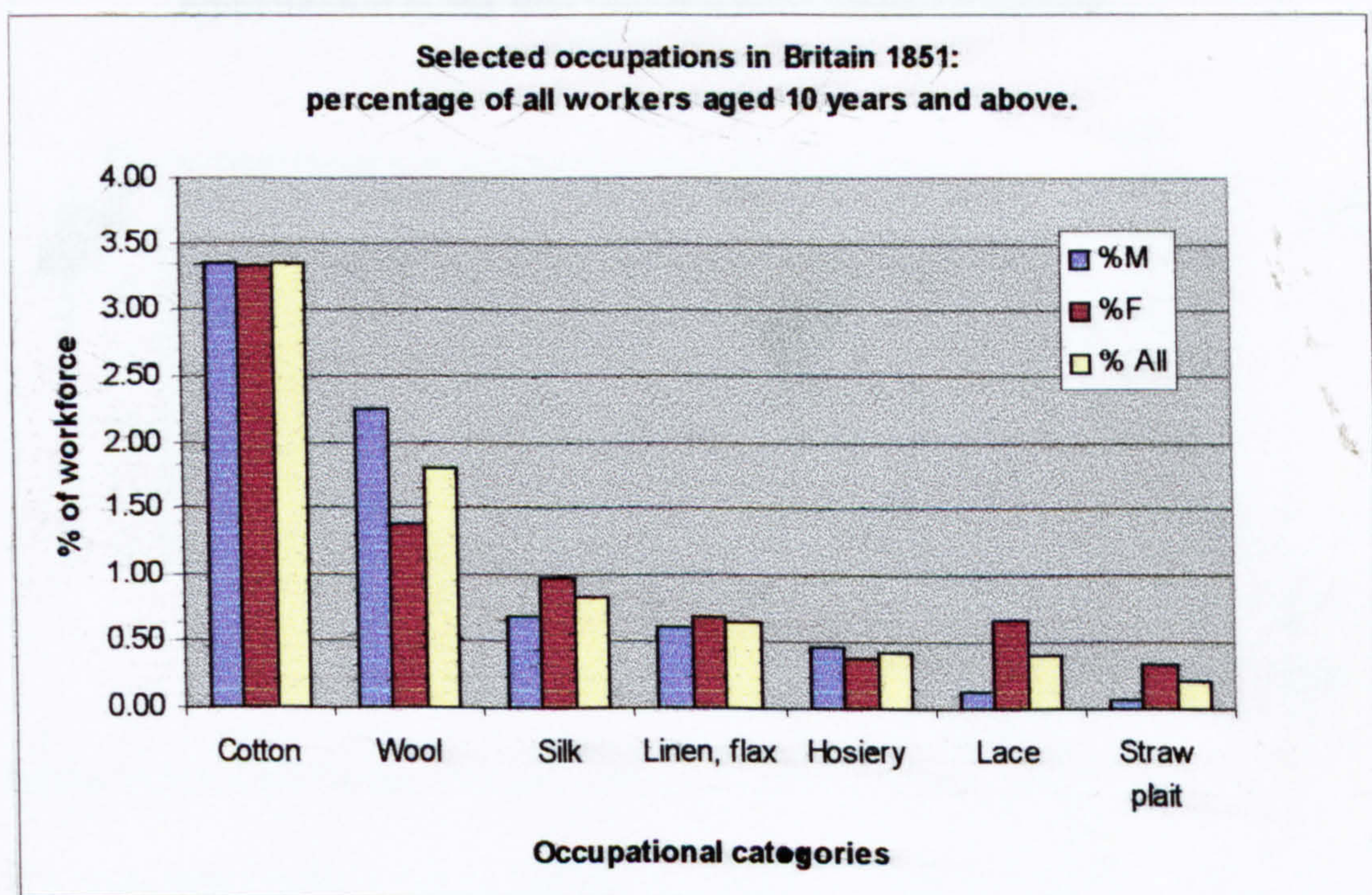
**Table 3.6 Principal Occupation Groups in Britain 1851**  
(in order of size)

	MALES	FEMALES	ALL
<b>Total Population: all ages</b>	10,224,600	10,736,000	20,960,000
<b>Population 10 years old and upwards</b>	7,616,000	8,155,000	15,771,000
	%	%	%
1. Agriculture: farmer, grazier, labourer, servant	21	3	11
2. Domestic service (excluding farm service)	2	11	7
3. Cotton worker, every kind, with printer, dyer	3	3	3
4. Building: carpenter, bricklayer, mason, plasterer, plumber etc.	6	0	3
5. Labourer (unspecified)	5	0	2
6. Milliner, dress-maker, seamstress	0	4	2
7. Wool worker, every kind, with carpet-weaver	2	1	2
8. Shoe-maker	3	0	2
9. Coal-miner	3	0	1
10. Tailor	2	0	1
11. Washerwoman	0	2	1
12. Seaman (merchant) pilot	2	0	1
13. Silk worker	1	1	1
14. Blacksmith	1.5	0	0.7
15. Linen, flaxworker	2	1	0.6
16. Carter, carman, coachman, postboy, cabman, busman etc.	1	0	0.5
17. Iron worker, founder, moulder (excluding iron-mining, nails, hardware, cutlery, files, tools, machines)	1	0	0.5
18. Railway driver etc, porter, labourer, platelayer	1	0	0.4

Source: *Published Reports 1851 Census*

Chart 3.8 demonstrates the mid-nineteenth century position of silk among the textile industries, together with the highly localised and regional industries of the lace and straw plait trades. Although the straw plait appears to employ a considerably lower percentage of the workforce, it should be noted that these figures are for workers aged ten years and above. This age group has been chosen for a national comparison across the textile trades, rather than that of 15 years old and above as selected in later chapters with reference to Hertfordshire, in order to capture the greater involvement of young children in the mills and factories of the north and midlands, and the very great involvement of young children in the straw plait industry.

**Chart 3.8. Selected Occupations: Britain 1851**

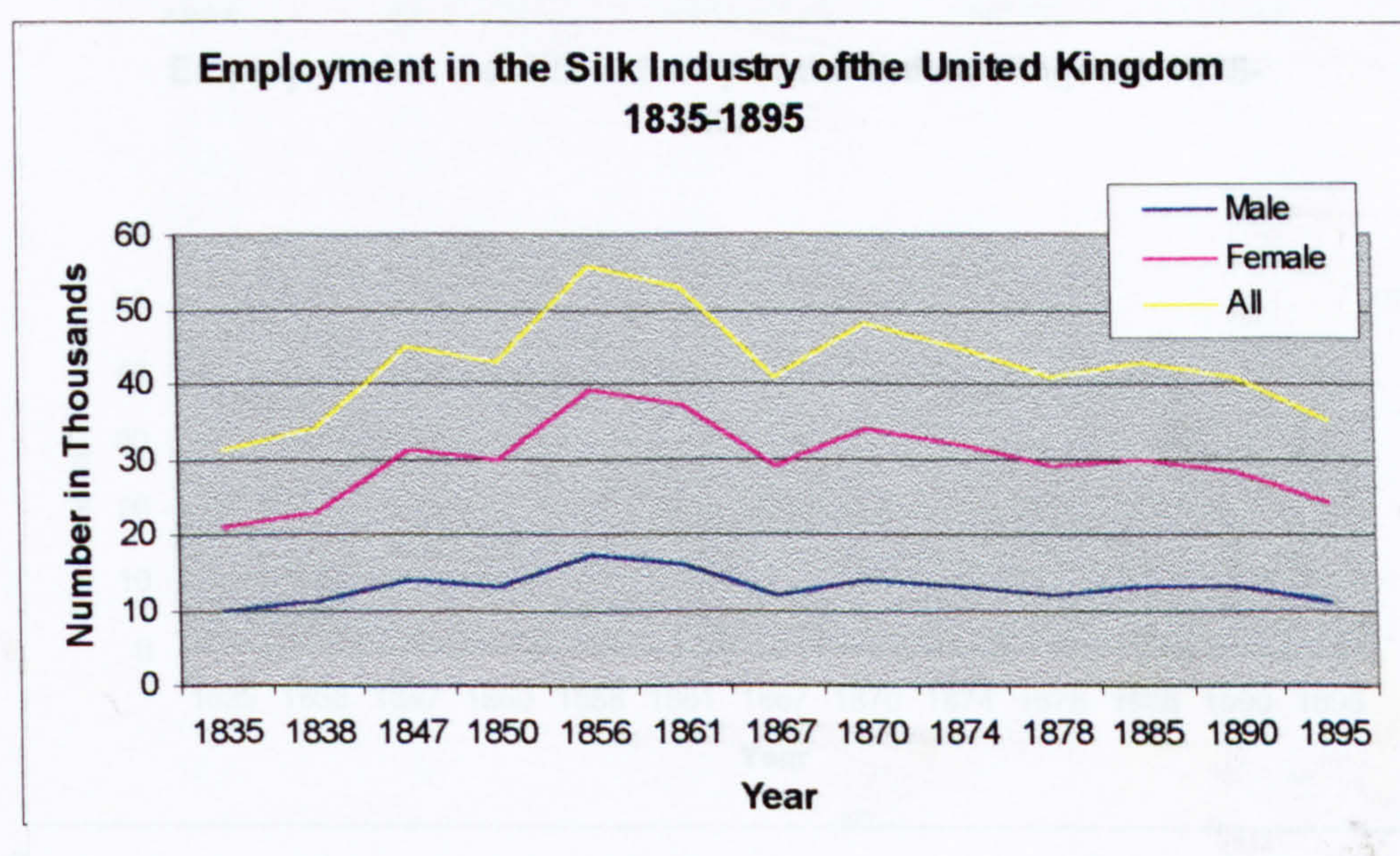


Source: *Published Reports 1851 Census. Occupations of the People*

By 1851 the employment of children in factories was subject to regulation. The anomaly lay in the production of bone or bobbin lace, and straw plait. These two last were cottage industries, involving home work not covered under the

factory and workshop acts, and children of both sexes as young as three years old were engaged in the straw plait industries of Buckinghamshire, Bedfordshire, Hertfordshire, and (to a lesser degree) Essex, while girls of a similar age in other parts of Buckinghamshire and Bedfordshire began the even more intricate business of lace making. Under the Act of 1844, the silk industry was no longer legally permitted to employ children of six or seven, and there is evidence that those employers using pauper apprentices were asking now for comparatively older children (preferably girls) of eleven, twelve, and thirteen years old.<sup>62</sup>

**Chart 3.9: Employment in the Silk Industry of the United Kingdom 1835-1895.**



Source: Mitchell and Deane. *Abstract of British Historical Statistics* p.211

National employment trends for the nineteenth century silk industry show high levels of female employment, fluctuating more sharply than the lower, comparatively less volatile trace of male employment. 1856 marks the high point

<sup>62</sup> *Minutes of the Proceedings of the Governors of the Poor 1846-7* Letter dated 14 April 1847 p.150 CWA E5216 Henry Rowbottom, manager of the mill at Tring wrote :

... I learnt you had a Number of Girls under your Care suitable for me as apprentices to the "Silk Throwing Trade".

I have a vacancy for 25 Girls from 11 to 13 Years of Age

See also Chapter 7 'Children and the Poor.' p.255, below.

of employment for both sexes and 1867 a depression, but the differential between the sexes is actually widest in 1870, when employment is increasing, but at a faster rate for females than males, and where the sex ratio stands at 41. The differential is closest before mid-century, in 1835 and 1838, at 48. At no time during this period therefore, does the sex ratio for overall national employment in the silk industry rise above 50.

**Table 3.7 Sex ratio of workers in four textile trades in the United Kingdom 1835-1901**  
(Males per 100 females)

Year	Cotton	Wool	Silk	Linen
1835	84	139	48	43
1838	77	93	48	42
1847	74	89	45	45
1850	75	88	43	44
1856	71	84	44	40
1861	68	88	43	40
1867	67	72	41	42
1870	65	83	41	43
1874	64	81	41	43
1878	62	75	41	43
1885	64	79	43	44
1890	65	78	46	47
1895	61	75	46	46
1896	62	74	44	47
1897	61	72	42	46
1898	60	71	40	45
1901	59	70	39	44

Source: Calculated from Mitchell & Deane: *Abstract of British Historical Statistics* p.211

Comparison with the other textile industries reveals that only the linen trade has such consistently low figures of male involvement, and that although the wool manufacture employed more men than women in 1835, this state of affairs did not last beyond the end of the decade. Cotton manufacture consistently employed more men than that of either silk or linen, but all textile industries substantially

increased the proportion of their female workforce between 1835 and the end of the nineteenth century.

**Table 3.8 Sex Ratio of child workers in the Silk Industry 1835-1901**

Year	Children Under 13	Year	Children Under 13	Year	Children Under 13
1835	61	1867	36	1895	
1838	65	1870	49	1896	
1847	62	1874	58	1897	
1850	50	1878		1898	
1856	50	1885		1901	
1861	43	1890			

Source: Calculated from Mitchell & Deane: *Abstract of British Historical Statistics* p.211

Children in the silk industry under the age of thirteen show a greater variation, the sex ratio ranging between 65 in 1838 and 36 in 1867, indicating a preference for female labour even among juveniles. 1867 marks a general fall both in adult and in child employment in the silk industry, but there does appear to be a correlation between sex ratio and the state of the silk trade. At national level, female employment in the silk trade decreased by one quarter between 1856 and 1867, while male employment decreased by almost one-third over the same period. In Hertfordshire, silk employment levels for women remained generally high, and comparatively stable, until the 1870's, although male employment in the silk trade began to decline from the 1850s.<sup>63</sup>

### **Geographical Distribution of the Silk Industry**

As Rawlley noted in 1919, 'the outstanding feature of the British silk industry is its scattered character, which distinguishes it, firstly, from the other textile industries of Great Britain, and secondly, from the silk industries of other countries.'<sup>64</sup> This comment holds equally true for the silk industry of the

<sup>63</sup> See Chart 4.3. Chapter 4: Hertfordshire Silk p.115, below.

<sup>64</sup> Rawlley, *Economics of the Silk Industry, a study in industrial organisation.* p.215

eighteenth and nineteenth centuries, during which time it played a powerful role in regional development. Salter Whiter strongly advocated the centralisation of the industry, deeming dispersal to have weakened the trade<sup>65</sup> but the longevity and sustainability of the trade in Hertfordshire demonstrates the strength of dispersal and the advantages of a flexible labour source.

Despite its overall scattered character, there were areas in the midlands and north west of England where whole towns, such as Leek, Congleton, Macclesfield, and even Coventry, became virtually dependent on the various branches of the silk industry. Macclesfield, for example, recorded in 1763-4, when the population numbered approximately 6,000, 'that during good times seven large firms alone had employed 2,470 workers and another twelve smaller firms employed 1,000 between them.'<sup>66</sup> The numbers and percentage of inhabitants employed are certainly high, but this is only the beginning of the story: in such a town, almost all other trades become dependent upon the prosperity of the silk manufacture, without which, the populace have no means to purchase goods. Trades associated with the use of silk, hat and shoe-making, gravitated towards Macclesfield, and the importance of the silk masters ensured that in the sixty years between 1775 and 1835, the office of Mayor was held on thirty-five occasions by silk or cotton manufacturers, and on others, by those financially engaged in the textile trades.<sup>67</sup> Once granted parliamentary representation, the two leading silk masters, Ryle (Tory) and Brocklehurst (Whig) became the newly elected members for parliament, demonstrating, as Malmgreen notes, that Macclesfield voted for silk and economics, rather than any particular party.<sup>68</sup> Such dependency on a single

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<sup>65</sup> 'Manufacturers have hitherto sought to get away from each other, and have established their factories all over the country, thus weakening the trade. There shall be three factories in different towns, each possessing an excellence of its own, yet each lacking the superior qualities of the other two; bring them together, and the workers mixing with each other will improve the whole.' Whiter *The Silk Industry of Britain and its Revival*. p.40

<sup>66</sup> Malmgreen, *Silk Town : industry and culture in Macclesfield 1750 - 1835*. p.23

<sup>67</sup> Malmgreen, *Silk Town : industry and culture in Macclesfield 1750 - 1835*. p.108

<sup>68</sup> Malmgreen, *Silk Town : industry and culture in Macclesfield 1750 - 1835*. p.114

commodity renders the entire labour force, and indeed all citizens, vulnerable to every vicissitude of the trade. In bad times, not only is there no alternative form of employment, but there are so many sufferers that, if there were an alternative, no other trade could absorb the numbers.

Where silk production had to compete with other manufactories the influence of the industry on local development could be equally strong, if rather more subtle in operation. In areas such as Buckinghamshire and Hertfordshire, where mills were less concentrated and a mixed economy prevailed, workers and mill owners were still subject to the highs and lows of the market, but if hands were discharged, there was the possibility of other employment, and the certainty that comparatively few other silkworkers would be seeking it. In December of 1825, when problems were approaching crisis levels, and Silk Masters had held meetings in London 'to take into consideration the present state of the trade ..... and also to consider of an application to his Majesty's Government, for the postponement of the intended admission of foreign wrought silks in July next',<sup>69</sup> *The Times* reported that Silk throwsters in Hertfordshire had already begun to discharge their hands, 'an example to be followed, unless ministers stop short in their speculative career',<sup>70</sup> Vestry minutes of the Hertfordshire silk towns, Watford, Rickmansworth and St Albans, do not, however, show a sudden rush of petitions from erstwhile silkworkers.

While the close proximity and allied industries of the midland silk towns did not result in the formation of a single homogenous unit, since these towns and their districts were certainly subject to different pressures and consequently reacted to change in different ways,<sup>71</sup> each was, nevertheless, sufficiently able to capitalise on their closeness to other textile manufacturing districts to benefit from technical innovation, and to attract an overspill of redundant cotton weavers in times when the silk industry was buoyant, and the cotton, depressed. Much of this

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<sup>69</sup> *The Times*. 4 Oct 1825 p.3i

<sup>70</sup> *The Times*. 23 Dec 1825 p.2iii

<sup>71</sup> Wilde, 'Contrasting Features in the Evolution of the Silk Industry in the Towns of the South-West Pennines'.



advantage was lost to the silk masters in the southern counties, but contact was maintained with the prime centres, advertisements for skilled hands and sale particulars appearing in the newspapers of Coventry, Manchester, and Macclesfield.

### **The Silk industry and the Industrial Revolution**

The textile industries having become almost synonymous with the 'industrial revolution' it becomes appropriate to assess those contributions made by the silk industry. Academic studies have tended to focus upon the high-growth new industries of the late eighteenth and early nineteenth centuries, of which cotton manufacture in the north of England is the most striking, and upon innovative technological introductions to old industries. Nevertheless, a strong case has been made for industrial evolution rather than revolution,<sup>72</sup> and it is into this pattern that the silk industry most easily fits.

While accepting that there was a fundamental movement of labour away from primary products and towards manufactured goods, a number of historians question the speed at which resources were deployed away from agriculture. However, a majority still centre the concept firmly upon the eighteenth and nineteenth centuries. Wrigley breaks away from this mould to emphasise the importance of changes in English agriculture and commerce between the sixteenth and nineteenth centuries, particularly the increase in productivity, that permitted a rise in real incomes, and consequently in population.<sup>73</sup> He stresses that this rise in real incomes, which in 1800 gave England the highest standard of living in Europe,<sup>74</sup> fuelled the drive towards urbanisation and industrial production.

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<sup>72</sup> Coleman, *Myth, History and the Industrial Revolution*.p.93

<sup>73</sup> Wrigley, *Continuity, Chance and Change. the Character of the Industrial Revolution in England*.pp.8-9

<sup>74</sup> Wrigley, *Continuity, Chance and Change. the Character of the Industrial Revolution in England*.p.13

Crafts questions figures given by Deane that estimate the agricultural sector of the labour force as standing between 60 and 70% in 1750, suggesting 48% as a more realistic figure, thereby lessening the impact of the subsequent fall to 35.9% in 1801. In sum, this proposes a period of more gradual change spanning 1760-1830,<sup>75</sup> which was in fact Toynbee's original time frame. This reading is compatible to some extent with that of Wrigley, since both appear to recognise that industrial prosperity is built upon agricultural prosperity, in terms of the additional capacity to feed and support a large number of non-agricultural workers. Describing the cycle of growth which favours industrial development, Wrigley follows Adam Smith in concluding that the 'vigorous, new urban centres were ... the fruits of an advanced organic economy, not the heralds of a new and different regime.'

Cheap food and raw materials provided an initial foothold for local manufacture. The development of manufacture, by offering 'conveniences' to local farmers, spurred them on to greater efficiency and larger volumes of production which in turn offered a further stimulus to manufacturing growth...<sup>76</sup>

Coleman makes little reference to agricultural contribution, but in affirming that slow economic growth took place before 1830, promotes the mid-century to the point at which structural change assumes real significance. He also makes the point, however questionable or contentious, that the manifestations of the industrial revolution remained largely confined to localised areas ... Lancashire, Yorkshire, the West Midlands... into the 1830s, while 'regions which had once enjoyed pre-industrialized prosperity, but which remained largely unaffected by the new industrialisation, often experienced stagnation and poverty.'<sup>77</sup> East Anglia is suggested as the classic example. The collapse of the wool trade left a vacuum to be at least partially filled by the silk industry, either in the production of silk and wool mixed fibres, or in pure silk.

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<sup>75</sup> Crafts, *British Economic Growth during the Industrial Revolution*. Table 2.1 p.13

<sup>76</sup> Wrigley, *Continuity, Chance and Change. the Character of the Industrial Revolution in England*. p.46

<sup>77</sup> Coleman, *Myth, History and the Industrial Revolution*. p.93

Maxine Berg, largely in agreement with these latter points, prefers to view the industrial revolution from the perspective of the 'Machinery Question', setting the period between 1815 and 1848, and emphasising the discontinuity between the economy of the eighteenth and nineteenth centuries

For contemporaries the Industrial Revolution meant steam power and rapid mechanisation in the cotton textile industry. Yet in reality such mechanisation directly affected only a small number of industries and regions, and even in these its permanence might be questioned. For rapid technological change was not the universal experience of the Industrial Revolution : elsewhere it appeared rather as an expansion on the basis of traditionally organised trades and manual labour.<sup>78</sup>

This view is certainly supported by the small degree to which, by the 1830's, mechanisation had spread outside the textile trade. Within that trade the number of power looms increased erratically depending upon the textile. The cotton trade recorded an increase from 110,000 in 1835 to 250,000 in 1850. The real impact and speed of this increase becomes apparent only when considered against the number of power looms serving the silk industry over the same period; the 2,000 recorded in 1835 had increased to just 6,000 by 1850.<sup>79</sup> The figures for the other textile industries of wool [5,000 increased to 42,000] and linens [0.3 thousand to 4,000] encompassing the same period, demonstrate similar difficulties in making the commitment to mechanisation. A decade before Berg, Landes follows the traditional interpretation, succinctly stating the requirements for an industrial revolution :

..... it required machines which not only replaced hand labour but compelled the concentration of production in factories -- in other words, machines whose appetite for energy was too large for domestic sources of power and whose mechanical superiority was sufficient to break down the resistance of the older forms of hand production. On the other hand, it required a big industry producing a commodity of wide and elastic demand, such that (1) the mechanisation of any one of its processes of manufacture would create serious strains in the others, and (2) the impact of

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<sup>78</sup> Berg, *The Machinery Question and the making of political economy 1815 - 1848*.p.1

<sup>79</sup> Mitchell and Deane, *Abstract of British Historical Statistics*. pp.185, 198, 203, 210.

improvements in this industry would be felt throughout the economy.<sup>80</sup>

In stark contrast to the evolutionary and regional approach, his is national, all encompassing, and ruthlessly edits from the picture any mechanical improvements to cottage industries. While this may be valid in relation to such items as the plait mill and straw plaiting, it has less legitimacy when applied to the introduction of machine looms into the upper-storey workshops of Coventry weavers.

Any contribution of the silk industry must therefore be considered from both the technological and economic standpoint. At first glance, the fact that the first successful English factory, built in 1717 by Sir Thomas Lombe, was to house silk throwing machines at Derby, would appear to have enormous potential influence with regard to both aspects. However, the impressive machinery was of Italian design origin, the result of industrial espionage by John Lombe, and innovative only in Britain. Although Lombe himself made a fortune, it gave the British silk industry as a whole no advantages in an international market. Indeed, the silk industry could fulfil only partially the conditions demanded by Landes, and failed to serve then or later as the catalyst to any industrial revolution. The silk throwing process, by which the imported raw silk was spun into thread, was well suited to mechanisation, and as Mantoux remarks in reference to this particular factory

..... here we already have a modern factory, with its automatic tools, its continuous and unlimited production, and the narrowly specialized functions of its operatives.<sup>81</sup>

Further processes, including dying, warping, weaving, and finishing, were not so adaptable, nor was there a large mass market eagerly awaiting an increased output of finished goods. Silk, raw or finished, was a high-priced luxury commodity with a narrow and inelastic market both at home and abroad. Comparatively small changes in patterns of import and export could impact upon the home producer with

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<sup>80</sup> Landes, *The Unbound Prometheus*. p.81

<sup>81</sup> Mantoux, *The Industrial Revolution in the Eighteenth Century*. p.195

devastating effect. In evidence to the Select Committee on Handloom Weavers, it was stated that in 1831,

France, deprived of her usual channels to export to America and other places, poured into this country a large portion of her silk manufacture. One-third of the looms of Spitalfields in consequence were standing for more than nine months, and wages were deplorably low. What I now pay 7d. for, and some others 6d., fell to 4d., and in some instances as low as 3d.<sup>82</sup>

Expansion of the domestic market brought few advantages to the silkworkers, since it was achieved by a reduction in the price of silk goods, achieved in turn by a reduction of wages paid. In evidence to the same committee taken at various times during 1834 and 1835, witnesses attributed the sorry plight of the workers less to direct foreign competition, than to internal competition among domestic manufacturers ... the accumulative effects of 'one manufacturer under-paying, and consequently under-selling his neighbour.' John Boyd itemised the fall in price of a single type and grade of silk: from 1792, when jaconet fetched 2s 10d per ell, the price had fallen by 1835 to 3<sup>7</sup>/<sub>8</sub>d per ell.<sup>83</sup>

Developing markets in the New World would actually shrink as the American silk industry developed to full potential. In 1828 commercial interests in New York were already petitioning Congress, to adjust tariffs to encourage both the

<sup>82</sup> Evidence of John Ballance, 16 June 1834 PP Report from Select Committee on Hand-loom weavers. Questions with the minutes of evidence. Part II. Causes of distress. Section 3 Competition p.16

<sup>83</sup> Evidence of John Boyd 3 April 1835 PP1835 Vol. XIII *Report from Select Committee on Hand-loom weavers*. Questions with the minutes of evidence. Part II. Causes of distress. Section 3 Competition p.14

<i>Year</i>	<i>Price per ell (46 inches)</i>	<i>Year</i>	<i>Price per ell (46 inches)</i>
1792	2s 10d	1818	1s <sup>3</sup> / <sub>4</sub> d
1802	2s 8 <sup>1</sup> / <sub>2</sub> d	1820	10 <sup>3</sup> / <sub>8</sub> d
1810	1s 8 <sup>1</sup> / <sub>4</sub> d	1826	6d
1812	1s 6d	1835	3 <sup>7</sup> / <sub>8</sub> d

export and internal sale of domestic silk products rather than that of finished European goods.<sup>84</sup>

Claim and counter-claim that free markets and open competition would kill or encourage commercial trade notwithstanding, the fate of those mill owners made bankrupt, and forced to sell modern machinery at a fraction of its cost, was constantly before the public. In 1829 John Ballance was citing examples of modernised mills standing empty and untenanted.<sup>85</sup> John Badnall, passionate advocate of Free Trade, was not immune. At the sale of his effects, a patent organizing machine valued at £500 was sold for £7, and broken up for its metal content.<sup>86</sup>

There was therefore little market incentive to encourage capital investment in the development of new machinery, with prices fallen so low, and markets so uncertain. Consequently, a number of manually operated silk winding and throwing mills persisted in addition to both water and steam powered mills. Power looms were not generally installed until the 1830's, and then only for the weaving of simple fabrics. The Jacquard loom developed in France in 1801, used a system of punch cards to regulate the pattern, and was the height of technological skill. In 1825, *The Times* reported the invention of a new silk loom in Lyons, 'and the mechanism, which is very simple, allows one man to weave five pieces at the same time' Improvements had been suggested by M. Jacquard, 'inventor of the sort now in use' and the inventor, M. Lebrun, expected to save four-fifths of the expenses of labour.<sup>87</sup> In 1841 a Swiss, Henry Gref, developed a new machine for spinning and twisting silk 'It is expected that by this new machine silk thread may be

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<sup>84</sup> Bryan, *On Silk Printing*. pp.1-6 Early growth of the American industry was no more than moderate, posing little threat to the English trade: in 1850 the output of the United States silk industry was valued at only 1.8 million dollars, with a workforce of 1.7 thousand employees, but from this point growth proved rapid. By 1900 the value of production had increased to 107.3m dollars, and the industry employed 65.4 thousand people Margrave, *The Emigration of Silk Workers from England to the United States in the Nineteenth Century*. p.125

<sup>85</sup> Balance, *Remarks on Some of the Important Errors contained in Mr Badnall's Pamphlet entitled A View of the silk Trade*. p.35

<sup>86</sup> Prout, *A Practicle View of the Silk Trade*. p.58 note

<sup>87</sup> *The Times* 13 Oct 1825 p.2iv

manufactured by a single operation, and without the application of spindles.’<sup>88</sup> The technological initiative seemed always to lie out of England. The already established silk centres of France and Italy could produce cheaper and better quality silks that found their way into England via smuggling routes, or through Ireland thanks to a loophole in customs law, thus avoiding the protective tariff. Manufacturers railed at the cheapness of foreign imported goods and the easy facility afforded to smuggling; at the lower level of French labour costs; at the advanced state of machinery in France.<sup>89</sup> In England, not every voice supported the manufacture of silk at all, with or without protective duties.

There is a common tendency amongst all classes of people, to overrate the importance of the profession or trade they are engaged in, and to judge of public measures more with reference to the immediate interests of *their particular body*, than by their general operation on the *public welfare*.<sup>90</sup>

So wrote ‘a Consumer’ in 1833, attacking both those that demanded protection for the silk industry, and those persuaded that the industry could prosper under free trade agreements. Comparing the silk industry to that of wine, and declaring them both impractical propositions, he continues:

..... *the whole* of the labour which has been denominated *unproductive is a useless consumption of capital*, and, moral considerations apart, the proportion of *capital* which is expended in its support *would be as beneficially applied to the maintenance of paupers*.

Nothing can be more fallacious than the pretence that such *waste of labour*, which only differs *in degree* from that of *digging holes and filling them up* again, gives encouragement to labouring industry; nor can there be a more irrational opinion than that the importation of foreign goods *diminishes the demand for home labour*.

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<sup>88</sup> *The Times* 8 Sept 1841 p.5iii

<sup>89</sup> *The Times* 14 Oct 1825 p.4i Letter from ‘A Constant Reader’. Similar sentiments were expressed on 3 Dec 1825 p.2iv, in a paragraph reprinted from the *Macclesfield Herald*.

<sup>90</sup> *Hints on the Practical Effects of Commercial Restriction on production, consumption, and National Wealth with remarks on the claims of the Silk Trade by a Consumer*. 1833

His argument is that effort would be better directed toward the exploitation of natural domestic advantages, and the production of goods which, without protection, would yield a greater return on investment, whether of capital or labour.

### A Lost Opportunity

The one remaining gap in the sphere of silk, a niche market that could have widened demand and exploited a British technological advantage, was the utilisation of waste silk. Between 1831 and 1843 imports of raw and waste silk together rose by approximately one-fifth;<sup>91</sup> between 1857 and 1914 the imports, re-exports and retained quantities of waste silk all rose, while those of raw silk all declined. Quantities of waste silk re-exported remained very low: from 5,000 hundredweight, approximately one-sixth of imports in 1875-79, waste silk re-exports reached their highest level in 1885-89, at 8,000 hundredweight, approximately one-ninth of imports. Thrown silk imports also rose, exports falling to less than one-fifth of re-exports as recorded for 1857-64.<sup>92</sup> This pattern argues increased production of lower priced articles, allied to a greater concentration upon the home market. The figures in Table 3.9 also reflect the decline of the throwing mills, where the quantities of raw silk both imported and exported, fall substantially after 1880. Despite increased proportions retained after 1880, the absolute quantity of raw silk available for throwing purposes declines steadily, a period coinciding with the decline of the marginal regions of silk production. By 1889, of all the Hertfordshire silk mills, only two, at St Albans and Redbourn, were still in commercial use, and both these would prolong their viability by the production of artificial silk.

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<sup>91</sup> *The Economist* 15 Feb 1845 Vol. III. No.7 p.154.

<sup>92</sup> Rawley, *Economics of the Silk Industry, a study in industrial organisation.* p.277



**Table 3.9 The import and retention of Raw Silk 1857-1914**

	Imports million lbs	Retained million lbs	Retained %		Imports million lbs	Retained million lbs	Retained %
<b>1857-64</b>	8.9	5.6	63.0	<b>1890-95</b>	1.9	1.8	93.2
<b>1865-74</b>	6.7	3.8	56.0	<b>1895-99</b>	1.9	1.8	93.7
<b>1875-79</b>	4.6	2.5	54.6	<b>1900-04</b>	1.3	1.1	85.3
<b>1880-84</b>	3.5	2.8	79.3	<b>1905-09</b>	1.1	1.0	91.9
<b>1885-89</b>	2.6	2.3	87.7	<b>1910-14</b>	1.1	1.0	89.0

Source: Percentages calculated from Rawley: *Economics of the Silk Industry* p.277

In the 1820's Peter Fairbairn of Leeds had initiated development of a processing machine to utilise waste and inferior tow in the linen industry, which produced a yarn almost as good as that obtained from better quality flax or hemp. As development progressed, Fairbairn adapted his flax machines to process waste silk, a commodity that was truly 'waste' as little or no use had been discovered for the crushed, torn, or otherwise ruined cocoons from which the silk could not be reeled:

.....material which hitherto had been offered in vain at  $\frac{1}{2}$ d a pound and had been refused as manure because farmers found it would not rot.<sup>93</sup>

The export of tools and machinery used in the cotton, wool, and silk industries had been prohibited under legislation enacted between 1750 and 1785, except under discretionary licence from the Board of Trade. The export, or attempted export, of textile, metalworking, clock-making, leather-working, paper-making or glass manufacturing equipment, was punishable by 'a two hundred pound fine, forfeiture of equipment and twelve months' imprisonment.<sup>94</sup> Fairbairn's tow-dressing machines were far in advance of any continental rival, and consequently in great demand abroad, to such an extent that the Board of Trade became alarmed at the number of export licence requests and in 1835 ceased to grant licences. As Heaton notes, by 1837 companies were ordering Fairbairn's

<sup>93</sup> Heaton, 'A Yorkshire Mechanic Abroad' p.284

<sup>94</sup> Jeremy, 'Damning the Flood: British Government Efforts to Check the Outflow of Technicians and Machinery, 1780-1843'. p.2 In the case of textile printing tools and machinery, the fine was £500 and forfeiture.

machines 'for dressing and cleaning refuse and waste silk' and since the waste silk industry possessed no strong protesting voice the Board readily granted licences.<sup>95</sup> Thus protection for the silk industry was carried only so far, and concentrated on the regulation of imports of thrown and finished silk rather than in the exploitation and maximising of a real domestic advantage.<sup>96</sup> Although the yarn produced from waste silk was inferior in quality to the thrown product, it was also considerably cheaper, could be equally as bright, was quite adequately durable, and could have made silk goods accessible to a much broader spectrum of the population. Indeed, the presence of carding engines in a secondary spinning mill on the Abbey Mills site at St Albans in 1856 indicates divergence into the processing of waste silk, and may go some way to explain the longevity of that mill, and the expense of the new mill at Redbourn in 1857.<sup>97</sup>

The ease with which these machines were exported opened a way for British manufacturers to avoid continental protective tariffs by establishing factories abroad. Furthermore, since skilled mechanics were required to operate, maintain, or teach others to use the machines, there was a small but significant exodus of skilled labour. Emigration often proved short-term since once the skills had been taught, there was no guarantee that the terms of contract would be kept, or renewed at an equitable sum. Laws dating from 1715 and 1750 preventing the emigration of skilled artisans were repealed in 1824, up to which time an anomaly had existed, since export of machinery was selective, but the prohibition against release of the artificer to service that machinery was absolute.<sup>98</sup> Textile manufacturers were as opposed to the repeal of exportation prohibitions, as to the repeal of import tariffs, fearing loss of export markets in the long term. Therefore, despite the inescapable fact that free emigration of the artisan now made nonsense

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<sup>95</sup> Heaton, 'A Yorkshire Mechanic Abroad' p.285

<sup>96</sup> Others also saw the potential of waste silk, and in 1859 Lister successfully adapted his wool-combing machine to the treatment of Indian waste silk.

<sup>97</sup> Insurance Document *Phoenix Assurance : Policy No.1124493* Dated 25 July 1856  
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of the restrictions on machine exports, the prohibitions remained in force under the licensing system.<sup>99</sup>

If, as Landes states,

by revolution we mean a transformation of the organization as well as the means of production. In particular, we mean the assemblage of large bodies of workers in one place, there to accomplish their tasks under supervision and discipline; we mean, in short, what has come to be known as the factory system.<sup>100</sup>

then the silk industry made an initial contribution by example, and a further contribution in the employment of very young children that continued uninterrupted longer than in any of the other textile trades: the exemption of silk factories from the 1833 Factory Act, prohibiting the employment of children under the age of 9, and those between the ages of nine and twelve for more than eight hours per day, was justified on the grounds of special need. James Pattison, a silk manufacturer at Congleton, in Cheshire, in response to the question 'Why do you take the children so young?' told the Select Committee on the State of Children in Manufactories in 1816,

The motive of taking the children so young is partly to oblige their parents; in a great degree to relieve the town-ship; and also, because at that early age their fingers are more supple, and they are more easily led into the habit of performing the duties of their situation.<sup>101</sup>

In the climate of the time this was broadly acceptable, the Factory Act of 1844 reducing the overall legal age of employment to eight, with the caveat of shorter

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<sup>98</sup> Except in a few exceptional cases, for example, the request of the Swedish Government for maintenance operatives. The penalty was forfeiture of nationality and property, but the problem of enforcement lay in detection and identification of the 'skilled workman'.

<sup>99</sup> Jeremy, 'Damning the Flood: British Government Efforts to Check the Outflow of Technicians and Machinery, 1780-1843'.p.20 Prohibitions were flouted, and numerous textile machine, including those used in processing silk, found their way to all parts of the Globe 1825-35.

<sup>100</sup> Landes, *The Unbound Prometheus*. p.114

<sup>101</sup> BPP *Report of the Minutes of Evidence taken before Select Committee on the State of the Children Employed in the Manufactories of the United Kingdom*. 25 April-18 June 1816. Evidence of James Pattison, Esq. p.76

working hours in all factories, but this increased rather than decreased the number of child workers, since it did not outlaw the 'relay' system, operating like shift work, that pertained in a number of silk factories. Sir Frank Warner, silk manufacturer and President of the Silk Association could write in 1921,

.... mechanical silk winding at its best, falls little short of perfection. Large factories are organised and devoted to this work alone, and an immense number of workers, especially women and children, are employed in it.<sup>102</sup>

## Conclusion

In sum, comparisons with the cotton industry are inevitable and inescapable ~ both were built upon imported raw materials that could not, under any circumstances be supplied from domestic sources. The initial difference lay in the price and source of the raw material. Cotton was a strong, tractable thread lending itself readily to the mechanised process, making a cheap product cheaper still. Its very cheapness increased demand for the all-purpose product, and expansion of the industry financed the growth of large urban areas in Lancashire. Not only were the factory workers dependent upon the manufacture, but also a wide range of trades and commercial enterprises that served the mill and its workers. The manufacture of cotton fulfils all three of Landes principal conditions by which to judge an Industrial Revolution. The silk industry never wielded such influence over the national economy as the cotton trade, but to varying degrees, Coventry, Macclesfield, and even Watford, Rickmansworth, St Albans and Tring, owed part of their late eighteenth and early nineteenth century localised prosperity and development to the silk industry. Parts of Essex and East Anglia pinned to it their hopes of regeneration following the collapse of the wool trade. It thus had great local importance in an age of industrialisation that is increasingly perceived in the literature as a collection of regional phenomena, rather than as a national

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<sup>102</sup> Warner, *The Silk Industry of the United Kingdom*. p.443

movement.<sup>103</sup> It is arguable that for its size, the industry may have had a proportionately greater impact upon local employment opportunities than the advent of more highly developed trades, since it carried a higher ratio of workers to machinery ... silk masters in Essex were telling the Select Committee on the Silk Trade in 1832 that their greatest problems were in obtaining sufficient labour, and those of Hertfordshire had need to import labour both from the London parishes, and those of neighbouring counties.

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<sup>103</sup> 'What took place was a series of events, in a certain span of time, in known localities, which subsequent historians found convenient to bless with a name.' Mokyr, ed. *The British Industrial Revolution : An Economic Perspective* p.2

## CHAPTER 4. HERTFORDSHIRE SILK

The Manufactures of the county of Hertford are not important; at Tring, Watford, St Albans and Tittenhanger (collectively) about 180 Males, Twenty years old, are employed in spinning and winding Silk and Cotton, and in making Ribbands; at Hemel-Hempstead are 49 Machine-makers; Wire-floors for Malting and Sacking are mentioned as made at Royston.<sup>1</sup>

*1831 Census Report*

Thus are the manufactures of Hertfordshire dismissed. The focus of attention on males twenty years old might argue an analysis of adult male employment only, an impression fuelled by omission from the paragraph of the overwhelmingly female dominated straw hat and plait trade. The paper manufacturing industry employed a similar number of workers to the silk industry and a significantly higher proportion of adult males, yet is also excluded. Such presentation, even misrepresentation, of data diminishes the importance of all these industries to the local economy. At this time there existed three principle silk throwing mills in south-west Hertfordshire, at Oxhey in Watford, St Albans, and Tring, and at least three lesser mills, at Watford, Rickmansworth and Hatfield, while approximately a dozen paper mills were concentrated in this region.<sup>2</sup> By 1841, however, it was acknowledged that silk mills produced the second most important manufacture of the county:

The principal Manufactures of the County are as follow, *vis.*, the Straw-plait, employing (bleachers and cleaners included) 4,751 persons, of whom 1,814 are under 20years of age; the Silk, employing 500 persons, of whom 344 are under 20 years of age; and the Paper, employing 256 persons, of whom 34 are under 20

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<sup>1</sup> 1831 *Census Report: Abstract of Answers & Returns under the Population Act, Geo. IV. C. 30 County of Hertfordshire* pp.250-251 (HRO open shelves)

<sup>2</sup> Women were prominent amongst the employees of both concerns, and it should not be assumed that because wives of the eighteenth and nineteenth century had little individual existence in law ...the married women's property act was not passed until 1882... that they and their children did not make a considerable contribution both to the local economy and to the family income.

years of age. The Malt trade employs 221 persons, of whom 20 are under 20 years of age.<sup>3</sup>

The principle focus of this study is nineteenth century, but the story of Hertfordshire silk really begins with the Spitalfields Acts of 1766 and 1773. The powers given to magistrates and the Lord Mayor of London in regard to the regulation of prices and the number of apprentices employed encouraged silk merchants to seek premises outside London. The spread of silk weaving to areas of Essex, Norfolk, and Suffolk, where it offered a welcome alternative to the declining wool trade, was matched by an exodus of silk throwing manufactories such that by 1822 'Verax' writing in his 'Review of the Statements in Mr. Hales' Appeal to the Public on the Spitalfields Act' could assert:

There was formerly many mills for throwing silk in Spitalfields; and though there was never an 'Act' referring to that department of trade, to 'fetter the masters and their workpeople with absurd regulations and books of 'Prices'; and though of course the amplest liberty existed for the masters to subdue the workmen to whatever rate of low prices they might have found attainable; yet the whole of these extensive concerns have left Spitalfields; the rival establishments 'have carried them all away.'<sup>4</sup>

'Weavers', and 'silk weavers' are comparatively rare in the Hertfordshire districts, although there were a small number listed in the Bushey and Watford census returns for 1841 and 1851, while a larger number of 'weavers', 'hand loomers' and 'hand loom weavers' are recorded in Sarratt 1851.<sup>5</sup> All the silk mills in Hertfordshire were throwing mills, the greater number established in the

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<sup>3</sup> 1841 *Census*: Abstract of Answers and Returns under the Population Act, 3 & 4 Victoria, C. 99. County of Hertfordshire p.55 PP 1844 Vol.XXVII

<sup>4</sup> 'Verax': 'Review of the Statements in Mr. Hales' Appeal to the Public on the Spitalfields Act' *The Spitalfields Acts : Seven pamphlets 1818 – 1828* ed. Carpenter,

<sup>5</sup> Some of these Sarratt weavers have been designated as silk weavers in the 1861 Census, but of those a number have been annotated in a different hand; the material with which they work is therefore not proven.

immediate aftermath of the Spitalfields Acts.<sup>6</sup> Only that of Redbourn commenced production later than the first quarter of the nineteenth century.<sup>7</sup> So general an exodus during the late eighteenth and early nineteenth centuries, and the subsequent lack of throwing mills in London, could therefore have had considerable influence on the original location and continued viability of the Hertfordshire mills. Few of the early proprietors were local men, but the majority had close connections to London.<sup>8</sup>

The requirements for a silk throwing mill were simple and comparatively few: a suitable power source, an adequate supply of labour, and good transport facilities to forward the spun yarn either to weaving centres, or for export. Transport was certainly less of a problem than for the paper manufacturers, since the thrown silk was neither excessively weighty nor bulky, but the existence of a good road network between London and the principal Hertfordshire towns was a decided asset. Roads were kept in reasonable repair for the convenience of the passenger coaches, which ran regularly from London to St Albans, Watford, and Tring.

It has been suggested that in the national context,

Silk manufacture seldom took place at 'least cost' locations: in the booms profits were so high that cost was of little relevance, and in the slumps manufacture was located not where conventional costs were at a minimum but rather where silk's comparative advantage, in terms of reduced competition for labour, power, and factory space from stronger industries, was greatest.<sup>9</sup>

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<sup>6</sup> The earliest real evidence of silk weaving in Hertfordshire appears to be an Apprentice Indenture to a silk weaver dated 1595, but neither weaver nor apprentice came from any Hertfordshire district associated with the silk industry of the eighteenth or nineteenth century.

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<sup>7</sup> Lionel Munby lists silk mills as existing between 1771 and the 1820's at Watford, Rickmansworth, St Albans, Hatfield, Hitchin, Tring and Redbourn. Munby, *The Hertfordshire Landscape* p196 This is not quite accurate, Redbourn, an oddity in several respects, being built in 1857.

<sup>8</sup> See Chapter 7: Mills and Mill Owners, p. 225 below.

<sup>9</sup> Wilde, *Growth, Decline and Locational Change in the English Silk Industry of the Nineteenth Century: A Study in Historical Geography*. pp.11-12



Therefore it is worth examining Wilde's statement regarding locational considerations in the light of conditions in Hertfordshire, and questioning as to whether Hertfordshire, and south west Hertfordshire in particular, could indeed offer any of the 'conventional' least-cost options, or requisite conditions of comparative advantage. Watford was a small country town lying close to the Middlesex border and situated less than a mile from the Grand Junction Canal. It offered, in addition to a site with the possibility of an endless supply of cheap water power from the river Colne, plentiful and cheap labour, as indicated in this advertisement placed in the *Manchester Mercury* of Aug. 2<sup>nd</sup> 1768:

To be Let, and enter'd upon immediately,  
*At Watford in Hertfordshire, with about fifteen Acres of Land*

A Silk Shop, or Throwstery, in extreme good Repair, being but lately built, containing twelve double Engines, to wind both long and short Silk, and ten Pair of Mills to throw the same, all of them worked by Water, in the same Manner as the Mills at *Derby, Macclesfield, Stockport*, etc with many improvements.

*Watford* is a very agreeable Market Town, fifteen Miles from *London*, very populous, and in it great Numbers of Hands, that work at very reasonable Rates, and who have for some Years been employed in the Silk Manufactory, and many of them in the above Shop.

Further Particulars may be had of Mr *Deacon*, in *Watford*, or of Mr *Greenweller's* in *Clifford's Inn, London*.<sup>10</sup>

This was the Rookery silk mill built by Thomas Deacon of Wiggshall, and may very well have been the Hertfordshire Mill referred to by Wilde as being one of only seven mills in the country capable of throwing Organzine in 1765.<sup>11</sup>

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<sup>10</sup> *Manchester Mercury* 2 Aug 1768 p.3iii

<sup>11</sup> Wilde, *Growth, Decline and Locational Change in the English Silk Industry of the Nineteenth Century: A Study in Historical Geography*. p.19-20. Wilde states that this mill 'opened in Watford in 1768' (p.20) but the above advertisement clearly states that the workforce 'have for some Years been employed in the Silk Manufactory, and many of them in the above Shop.'

Watford was not a 'plait' district, so waged employment for women and children was less universal than in the western regions. Paper mills were few at this time, although a strong correlation in the distribution of silk and paper mills becomes discernible, since their general requirements were similar. Alfred Shorter, concerned with the distribution of paper mills in the eighteenth century, comments :

There was clear and constant water in the districts of Hertfordshire in which paper mills were established during this period; several of these mills were placed at or near the junction of the chalk and the London clays where, although the water is hard, it is clean and free from the 'colour' which is often found in surface water that has travelled long distances.<sup>12</sup>

The advertisement for the Rookery mill refers to the 'reasonable rates' payable to employees, and these were assuredly lower than those of London, and the increasingly competitive North of England. In Hertfordshire, wages would compete not with the London trades, or other factory concerns, but primarily with agriculture. During 1760-69 agricultural wages in the south-east counties, including Hertfordshire, averaged 13d per day for a six day week, rising to 16<sup>1</sup>/<sub>2</sub>d by 1781,<sup>13</sup> at which time the Watford Vestry, finding itself burdened with a large number of unemployed men, ruled that the poor should be employed by farmers 'one, two or more Days according to their Rents, at one shilling p[er] Day'.<sup>14</sup>

Thus it appears that all three conditions of comparative advantage were initially met, to the extent of attracting several other silk mills to locations in and around the town. However, there is also evidence that failure of the industry to expand further in Hertfordshire during the nineteenth century was in part due to lack of labour.

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<sup>12</sup> Shorter, *Paper Mills and Paper Makers in England 1495-1800*. p.75

<sup>13</sup> Clark, 'Farm Wages and Living Standards in the Industrial Revolution: England, 1670-1869'. p.485 Table 4. Winter wages. Not until 1810 would agricultural wage averages be consistently higher in northern and midland counties.

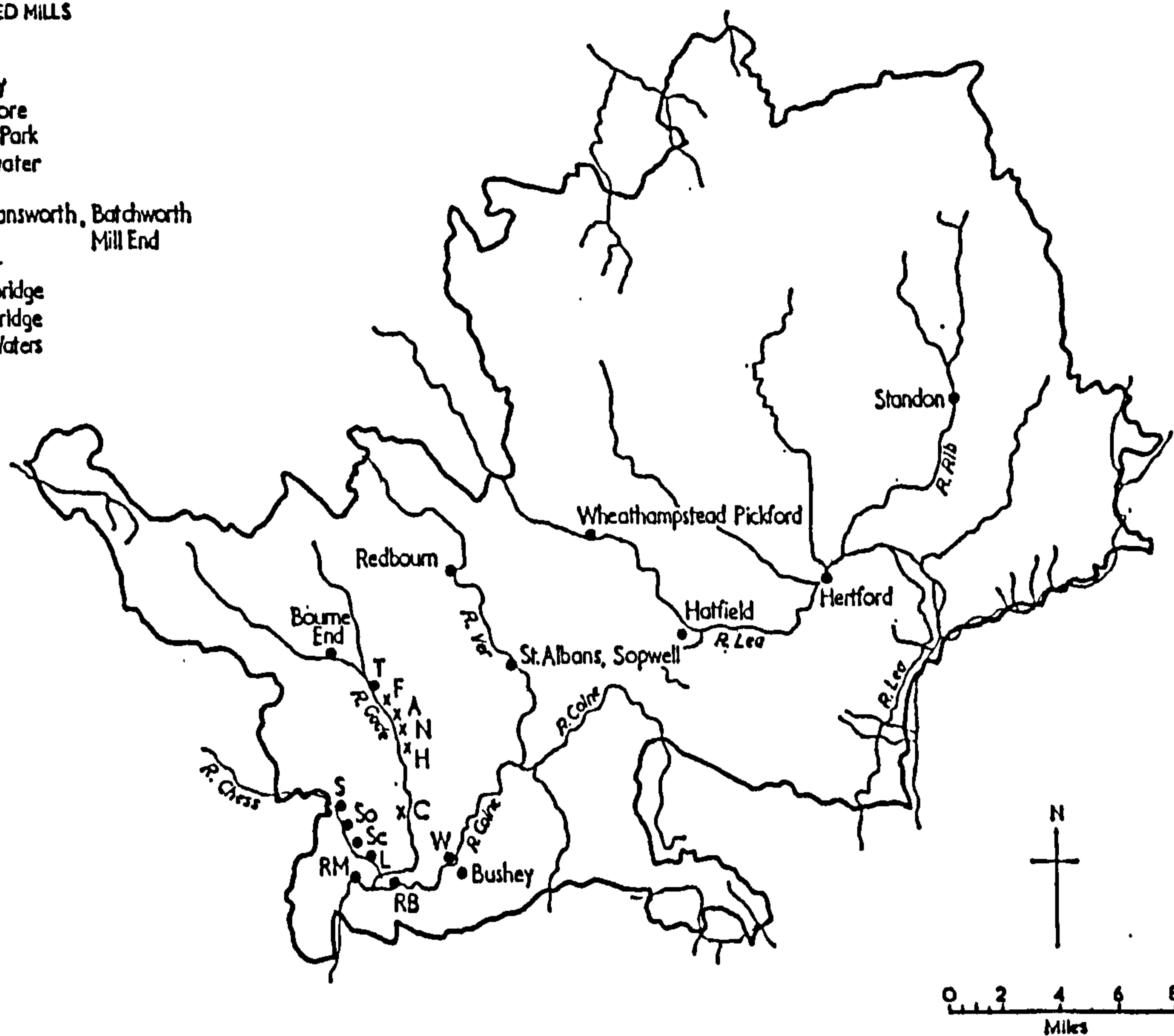
<sup>14</sup> *Watford Vestry Minutes* 18 April 1781 HRO D/P117/8/1

## The Competitive Industries

### 1. Paper

- x MILLS IN USE
- DISUSED MILLS

- A Apsley
- C Croxley
- F Frogmore
- H Home Park
- L Loudwater
- N Nash
- RB Rickmansworth, Batchworth  
Mill End
- RM
- S Sarratt
- Sc Scotsbridge
- So Solesbridge
- T Two Waters



Paper mill sites in Hertfordshire 1495-1970

As early as 1495 there was a paper mill at Hertford, but by 1601 this had disappeared, the only recorded mill being at Sopwell. The greatest proliferation of paper mills broadly coincided with the advent of the silk mills; the three paper mills recorded between 1726 and 1750, at Hatfield, Standon and Sarratt being augmented after 1751 by more than a dozen further mills, including six mills in

and around Rickmansworth alone. By 1800 only three of the Hertfordshire Mills lay outside the southern regions.<sup>15</sup>

Many of the paper mills were in fact converted corn mills, in the same way that corn mills were converted to accommodate silk throwing. These two industries, each equally slow to establish itself as a major force in the county, competed for sites, buildings and labour. They were also compatible, in as much that paper mills sited in close proximity to textile mills frequently found a ready market for their products. Packaging, cardboard boxes and labelling are among the more obvious paper products that a factory might use. In the cotton towns of the North there would be a reciprocal advantage in the supply of rags and cotton waste. Indeed, there was a cotton mill at Rickmansworth, owned by Mr Joseph Strutt, and employing pauper apprentices from St James, Picadilly, until at least the first decade of the nineteenth century.<sup>16</sup> When John Dickinson began to produce his 'silk thread paper' at Nash Mills in 1829<sup>17</sup> he had several comparatively local throwing mills from which he could obtain the necessary thread. Dickinsons even developed connections to the plait trade: as increasing costs and diminishing supply of rags prompted a search for substitutes, John Evans took out a patent in 1854 for manufacturing brown paper using the waste from the Brazilian grass of the Luton and St Albans hat and plait trade.<sup>18</sup>

As the secret of silk came from the east, so too did the art of making paper. From China via Arabia, knowledge of the process travelled to Europe, where the use of paper is recorded in Italy from the twelfth century. Reportedly the first

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<sup>15</sup> Shorter, *Paper Mills and Paper Makers in England 1495-1800*. pp.173-178

<sup>16</sup> *Vestry Minutes*, St James Picadilly. Dec 1791 WAC Ref :D1873

<sup>17</sup> This silk-thread paper was used from about 1829 for Exchequer Bonds and other Government documents, and in an improved form, approved in 1840 for use in pre-paid envelopes.(p.77) It was made behind locked doors on two machines watched by excisemen. 'The threads had to be laid at an equal distance from each other, and mended when they broke: a task entrusted to two trustworthy women.' Evans, *The Endless Web: John Dickinson and Co., Ltd. 1804-1954*. p.71 Here again, women had proved themselves more dexterous than their male counterparts.

<sup>18</sup> Evans, *The Endless Web: John Dickinson and Co., Ltd. 1804-1954*.p.110 Patent No.964, 28 April 1854 The supply of Brazilian grass being small and uncertain, by 1861 Evans was considering esparto as the better option. p.111

paper mill in England was at work in Hertfordshire in 1495,<sup>19</sup> Lewis Evans, in his study of the Dickinson mills, confirming that this was Sele Mill at Hertford.<sup>20</sup> It was not, however, until the seventeenth century that the paper industry was well established in England.<sup>21</sup> Similarities between the advent of the paper and of the silk industries extend beyond their place of origin and time of arrival in Europe. Like the water powered silk mills of Bologna, water powered devices for preparation of the raw material for paper-making were in use in Europe during the twelfth century, and until the introduction of paper-making machinery during the nineteenth century, the process was dominated by water power and hand labour in the making and finishing processes.<sup>22</sup> Paper manufacture, like much of the silk trade, was traditionally in the hands of Huguenot refugees,<sup>23</sup> and certainly there were a number of skilled paper-makers among the refugees fleeing the continent in 1685. From the total output of the mills, assessed at 3,600 tons in 1721, Lewis Evans calculates that the majority of mills (less than 100 in all England) at that time were small one-vat concerns. He is also more than a little self-satisfied, as he adds that this was less than half the output of the Croxley mill alone (in 1896), and that by 1800 'the make of all England was just about the same as that of Croxley now is, or about 8,000 tons a year.'<sup>24</sup>

Despite the noted similarities, Coleman makes an important point in remarking the great difference between the early paper industry and the production of textiles :

The combination of skilled labour, water-power, and the need for some minimum of buildings in which to carry on the processes of manufacture precluded any possibility of the industry assuming the well-known shape of the 'domestic system'. The techniques of cloth-making were ideally suited to a division of

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<sup>19</sup> Coleman, *The British Paper Industry 1495-1860*. p.4

<sup>20</sup> Lewis Evans was great-nephew to John Dickinson, and became a director of the Dickinson Company. Evans quotes as his source the 'De Proprietatibus Rerum' printed in 1495 by Wynken de Worde. Evans, *The Firm of John Dickinson and Company Limited*. p54

<sup>21</sup> *The Harmsworth Encyclopaedia* p.4562

<sup>22</sup> Coleman, *The British Paper Industry 1495-1860*. p.26

<sup>23</sup> Dagnall, *John Dickinson and his Silk-Thread Paper*. p.1

<sup>24</sup> Evans, *The Firm of John Dickinson and Company Limited*. p.56

labour which allowed the `putting-out' or `domestic' system to flourish; those of paper-making demanded centralized work.<sup>25</sup>

Paper-making had never been a cottage industry in the way that silk weaving, and even silk throwing, had once been.<sup>26</sup> Although it was not impossible for two persons to operate a small paper mill alone, it was intensive labour, and required not only a certain outlay of capital, but also space to accommodate the various processes. Nor could the paper industry absorb large numbers of semi-skilled, or unskilled labourers, being instead reliant upon a cadre of skilled labour. Nevertheless, such was the specialisation, and even secrecy attached to particular processes as developed by individual companies, that John Dickinson preferred to engage unskilled or semi-skilled labour, and to train his own employees. Dickinson became the most influential and prosperous of the Hertfordshire paper manufacturers, and in the Select Committee report of 1861, John Evans, then a senior partner in the company, spoke of Dickinsons as `one of the oldest of the paper houses'.<sup>27</sup> It had been in existence for 52 years, little more than half the period during which the Rookery silk mill had been in production, yet by 1852 Dickinson had acquired five mills, four in Hertfordshire and the fifth in Manchester where cotton-mill sweepings were pulped. In 1851 his Hertfordshire mills alone contained 46 beating engines, while the remaining six paper mills in the county had only thirty between them.<sup>28</sup> Dickinson was not only an innovative and efficient manufacturer, but also a shrewd businessman. The Fourdrinier brothers had sold their machines widely, reaping a short-term reward, but Dickinson sold very few of his improved design models, preferring to retain their advantages in his own production.

The highest grades of paper were made from linen and cotton, although small quantities of other fibres such as wool could be added in the manufacture of

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<sup>25</sup> Coleman, *The British Paper Industry 1495-1860*. p.39

<sup>26</sup> Silk weaving in particular retained a core of domestic `cottage' workers into the twentieth century.

<sup>27</sup> Coleman, *The British Paper Industry 1495-1860*. p.237

<sup>28</sup> PP 1852, Vol LI. pp 554-5

Apsley : 10 Croxley : 11 & 2 silent Home Park : 12 Nash : 11

cheaper papers.<sup>29</sup> This preliminary phase of the paper process ~ rag collecting, sorting, and cutting ~ was that which most nearly resembled the textile industries in the employment of unskilled female and child labour.<sup>30</sup>

In paper-making the first process to which rags are subjected is sorting, or separation into different grades. In this great care must be exercised, the subsequent processes depending on the efficiency with which the work is done. Linens are separated from cottons, and each may be subdivided into various grades. After the rags have been sorted, cut, and dry-cleaned, they are conveyed to a boiler, where they are treated with an alkali and boiled by means of steam under pressure for a period varying with the quality of the rags, the strength of the alkali, and the pressure.<sup>31</sup>

## 2. The straw plait

The dominance of arable farming and wheat production in the West of the county,<sup>32</sup> led to heavy involvement in the straw plait industry. Straw plaiters were few in the Watford districts, but found in abundance at St Albans, which had a thriving and extensive straw hat industry, and throughout the Berkhamsted region including Tring. Once widely accepted by social historians as a seasonal cottage

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<sup>29</sup> The raw material for early paper manufacture was rags rather than the wood pulp used in the bulk of modern paper production, and therefore gave rise to ancillary occupations such as rag collecting, sorting, and cutting. Businesses were founded on, and fortunes amassed from, the profits of the rag merchants. While the unskilled nature of the work offered employment to the poor, there was also the risk of disease spreading quickly and easily during times of plague. Contemporary knowledge may not have linked the plague to fleas transported with the cloth, but it was certainly well known that the clothes of a victim could harbour the disease. Rags for the paper mills were collected locally and delivered directly, but also sent from dealers further afield, including London, who bought from a multiplicity of rag gatherers. Awareness of such inherent dangers had caused the privy council to order the closure of paper mills in Middlesex and Buckinghamshire during an outbreak of plague in 1636-7. Coleman, *The British Paper Industry 1495-1860*. p.37

<sup>30</sup> By the end of the nineteenth century, although the principles of manufacture remained essentially the same, machinery had taken over some of the initial processes undergone by the rags and wood pulp.

<sup>31</sup> *The Harmsworth Encyclopaedia* p.4563

<sup>32</sup> Wheat was the greatest source of farming profit and the principal employer of agricultural hands until the 1870's. Agar, *Employment and Community in Beds and Herts in the Nineteenth Century*. p.4

industry, the validity of that assumption is now in doubt and undergoing revision.<sup>33</sup> Pamela Sharpe asserts that 'plait manufacture was a springtime activity, lasting for a maximum of three months'<sup>34</sup> although Pamela Horn qualifies her assessment that the trade was 'to some extent seasonal', noting the production of winter plait.<sup>35</sup> In 1864 J. E. White records both the continuance of plait schools through the winter months, 'All year round they come at 9am and leave at 8pm...'<sup>36</sup> and the sale of plait throughout the year. Problems of defining seasonal work are compounded when multiple occupations are involved, and there was seasonal specialisation within the straw industry itself. In 1843 it was noted that fancy straw weaving at St Albans was 'only carried for about two months in the year at this season (May); the people are paid by the piece, and as the season is brief, and called by the women their harvest, they work very hard and earn good wages. ....the rest of the year they work at the straw plait.'<sup>37</sup> Equally in 1864, a witness stated 'Sewing work will not sell in summer.'<sup>38</sup>

It is not disputed that prices were lower for winter plait than for spring and summer plait, in consequence of which some women may have found it

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<sup>33</sup> Goose, *St Albans and its Region*. pp 86-7 questions the strict seasonality of the straw plait trade, and quotes Tansley 'plait is made all year round, except during the interruption of harvest time.' (A. J. Tansley 'On the Straw Plait Trade' p.71)

<sup>34</sup> Sharpe, *Adapting to Capitalism, Working Women in the English Economy, 1700-1850*.p.60 She also comments, in reference to the contradictions of high and low pay within the plait trade: 'It is also a feature of the seasonality of the straw-plait trade and its dependence on fashion, *neither of which are strongly represented in the literature.*' This very lack of representation in the literature may support the view that straw plaiting was less seasonal than hitherto supposed.

<sup>35</sup> Horn, 'Child Workers in the Pillow Lace and Straw Plait Trades of Victorian Buckinghamshire and Bedfordshire'.pp. 789, 792.

<sup>36</sup> PP 1864 *Reports of Commissioners* Vol. XX. 'Evidence upon the straw Plait and Bonnet Manufactures and some Miscellaneous Employments collected by Mr. J. E. White.' p.200 'Plait, however, sells all the year round at some price, and in busy times many women and big girls will sit up at it all night.' p.204

<sup>37</sup> PP 1843 Vol. XIV *Childrens Employment Commission* Appendix to the Second report of the Commissioners. Trades and Manufactures p.A13 No.111

<sup>38</sup> PP 1864 *Reports of Commissioners* Vol. XX. 'Evidence upon the straw Plait and Bonnet Manufactures and some Miscellaneous Employments collected by Mr. J. E. White.' p.204



uneconomic to continue winter plaiting during low return years. Illustrating how precarious was the living to be made by the straw plaiters, Sharpe refers to the letter of a Halstead woman, Susannah Rising, addressed to the Chelmsford overseers in August 1824. 'Braiding is of no use For it Fetches nothing when tis Done Worth Speaking on' she complains, having already asserted in the previous February that 'Wheare no money Can Be Earnt no Living Cannot Be Had'.<sup>39</sup> In Hertfordshire and Buckinghamshire the straw plait was similarly recognised to furnish a precarious living: in March of 1832 Hannah Grant wrote to Lady Bridgewater at Ashridge, appealing for help on behalf of Widow Whitehead, whose daughter, between ten and thirteen years of age and hitherto a straw plaiter, desired to be apprenticed to a dressmaker. The response was supportive of the family, although not of the proposed apprenticeship. Lady Bridgewater favoured service in a respectable household once the girl was old enough, 'where her morals would be attended to' adding 'The girls knowledge of making Straw plat, might be of use to her if placed in a small family; and service would be less precarious as I conceive than that employment alone.'<sup>40</sup>

The 1864 Report states that nationally 92.8% of those engaged in straw plait manufacture and 90.7% of those in straw hat and bonnet making were female, but ventures little more than an estimate of the number of children involved.<sup>41</sup> In Hertfordshire the average for female workers between 1841-1891 was 92%,<sup>42</sup> but

<sup>39</sup> Sharpe, 'The Women's Harvest : Straw-Plaiting and the Representation of Labouring Women's Employment, c.1793-1885'. p.133

<sup>40</sup> Appeal from Hannah Grant. Reply on behalf of Lady Bridgewater signed R. Clarke. Letter 22 March 1832 HRO A42432

<sup>41</sup> PP 1864 *Reports of Commissioners* Vol. XX. 'Evidence upon the straw Plait and Bonnet Manufactures and some Miscellaneous Employments collected by Mr. J. E. White.' p.198 Children aged 5-13 are estimated at approximately 6,000.

<sup>42</sup> The Straw Plait :

Year	% Female Workers	Source: Census Reports
1841	91	1841-91.
1851	87	The 1851 Report combines
1861	93	male straw plait workers with
1871	94	thatchers and basket weavers,
1881	96	inflating the figures and
1891	92	lowering the % of females.

as Goose notes, male participation in the urban parishes of St Albans in 1851 was as high as 18%.<sup>43</sup> At St Albans the straw industry provided the raw material for sophisticated factories peopled by older, and possibly more specialised or skilled workers engaged (most notably) in hat making. Here, as in the silk trade, fashion played an important role.<sup>44</sup>

### 3. Rus in urbe : 'The country in town'

Agriculture was the dominant industry in Hertfordshire, and in the south west overwhelmingly male in character, (outside the straw plait) therefore appearing to have been less competitive, than compatible with the textile mills. Certainly it had a significant impact upon the labour pool from which industrial workers were drawn, pervading all but the most urban districts. As indicated above, agricultural wages in Hertfordshire, at 9s-10s a week between 1851-61, were lower than those of a Watford labourer, but this was still higher by one or two shillings than the amounts given for Essex, Suffolk and Norfolk at the same period.<sup>45</sup> Bedfordshire figures are comparable to those for Hertfordshire, but Buckinghamshire, Cambridge and Berkshire were again lower. Caird, in his survey of English Agriculture in 1850-1851, gives 9s as the weekly wage for Hertfordshire, with only Sussex, at 10s 6d a week, higher among the Southern counties. The averages he quotes are 11s 6d for northern counties, 8s 5d for southern, and 9s 6d over England as a whole, thus Hertfordshire wages may be accounted as generally above the southern average.<sup>46</sup> A. Wilson Fox, placing

<sup>43</sup> Goose, *St Albans and its Region*.p.72 This high male involvement was due to the presence of the hat factories rather than any urban bias.

<sup>44</sup> *The St Albans Times and Herts Advertiser* for 4 Aug 1855 p.8 ii reported jubilantly that the workers in Brazilian straw had, during the previous two months, been unable to supply the requirements of the wholesale houses, and that the St Albans 'Bonny Brown' had been the hit of the season. Not that the 'Bonny Brown' was the only style produced in St Albans, where the 'Mushroom', 'Annie Laurie', 'Eugene', and 'Sun Shade' vied for popular attention.

<sup>45</sup> Orwin and Felton, 'A Century of Wages and Earnings in Agriculture'. p.238

<sup>46</sup> Caird, *English Agriculture in 1850-51*. p.512

Hertfordshire among the Midland counties, gives the figure of 7s as the *lowest* rates of weekly wages in 1853,<sup>47</sup> but notes also that weekly wages were supplemented by other payments, to a greater extent in counties where cash wage rates were low, than where they were high<sup>48</sup>. For Cambridge in 1851, he calculated the excess of earnings over wages to be as high as 25%.<sup>49</sup>

**Table 4.1 Wages: Midland Counties**

	Weekly Rates of Wages		Weekly Earnings		Excess of Earnings over Wages		Per cent
	s.	d.	s.	d.	s.	d.	
1851	9	9 <sup>1</sup> / <sub>4</sub>	12	2 <sup>3</sup> / <sub>4</sub>	2	5 <sup>1</sup> / <sub>2</sub>	25.3
1861	11	11 <sup>1</sup> / <sub>4</sub>	14	4 <sup>1</sup> / <sub>4</sub>	2	5	20.3
1871	13	1 <sup>1</sup> / <sub>4</sub>	15	6 <sup>3</sup> / <sub>4</sub>	2	5 <sup>1</sup> / <sub>2</sub>	18.8
1881	14	7 <sup>3</sup> / <sub>4</sub>	17	4 <sup>3</sup> / <sub>4</sub>	2	9	18.8

*Source: A Wilson Fox p.138*

Orwin and Felton follow Caird, suggesting 9s a week for Hertfordshire and 8s for Essex, where in 1862 it was recorded that:

The wages of a male agricultural labourer sometimes sink to 8s a week, and on this 8s he has to support a wife and family; while the wages of a female factory hand range from 7s to 10s.<sup>50</sup>

Table 4.2 clearly shows a depression in agricultural wages in Hertfordshire between 1833 and the late 1860's. Despite regional variation in the timing of wage rise and fall, the overall trend follows the same pattern in both counties: wages were at their lowest in 1850-51, and at their peak in 1879-81 ~ an almost complete inversion of the state of employment in the silk mills. Thus although Hertfordshire was by no means a high wage region when compared to the northern

<sup>47</sup> Fox, 'Agricultural Wages in England and Wales during the Last Fifty Years' p.131

<sup>48</sup> Fox, 'Agricultural Wages in England and Wales during the Last Fifty Years' p.132

<sup>49</sup> Fox, 'Agricultural Wages in England and Wales during the Last Fifty Years' p.138

<sup>50</sup> Merryweather, *Experience of Factory Life: being a record of fourteen years' work at MrCourtauld's Silk Mill at Halstead, in Essex*. The writer was Bessie R. Parkes, in the preface to the book recounting the experiences of Mary Merryweather, teacher to the factory girls employed in the Halstead silk mill of Samuel Courtauld.

counties (Derbyshire 11s-12s, Cumberland and Lancashire 13s-13s 6d, Yorks 11s-14s),<sup>51</sup> wage rates stood higher than average, and among the highest of the southern and south-western counties.<sup>52</sup>

**Table 4.2 Weekly Cash Wages in Agriculture 1824-1898**

Year	Hertfordshire		Essex	
	s.	d.	s	d
1824	9	0	9	4
1833 <sup>53</sup>	11	0	10	3
1837	9	6	10	4
1850-51	9	0	8	0
1860-61	10	0	11	9
1867-71	12	7	11	5
1879-81	13	6	12	6
1892-93	11	6	11	6
1898	12	11	12	7

Source: Orwin and Felton 1931 p.238

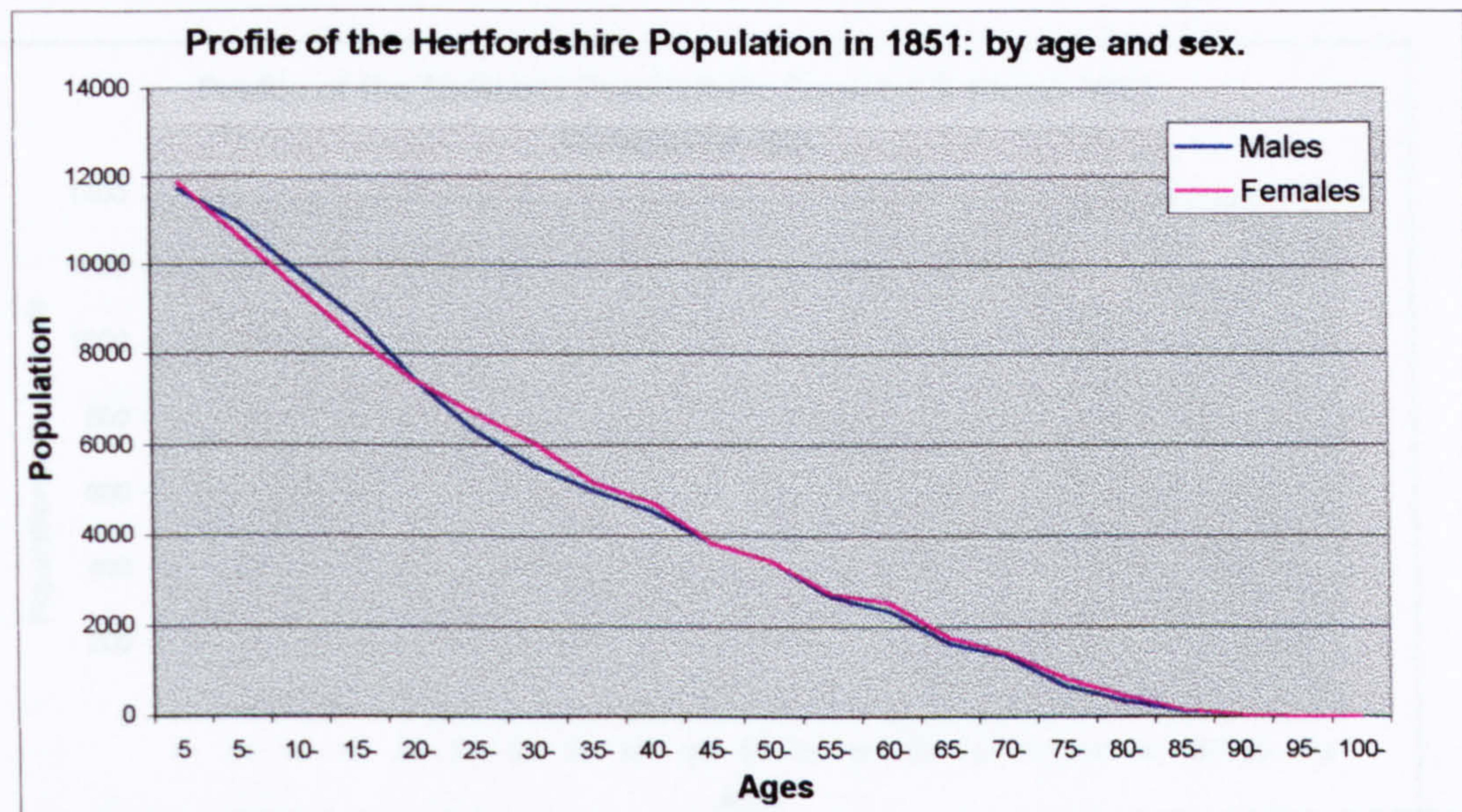
### Population and the Labour Source

Although at first sight competition from other industries would thus appear to have been slight, was there in reality a large available pool of under-used labour in Hertfordshire? Taking 1851 as an approximate mid-point in the period during which the silk mills exercised greatest influence over the local economy, and utilising the information contained in what was most certainly the first reliable census of the century, it is possible to construct a profile of the Hertfordshire population.

<sup>51</sup> Orwin and Felton, 'A Century of Wages and Earnings in Agriculture'. pp.236-237

<sup>52</sup> Snell notes that Essex, Cambridgeshire, and Buckinghamshire, in 1850 all recorded wages within 6d of their 1767-70 level, however, at 9s-10s per week Hertfordshire wages show a much greater differential from the averaged 7s 6d of the southern counties in 1767. Snell *Annals of the Labouring Poor : Social Change and Agrarian England, 1660-1900*. p.25 (Note) and Clark, 'Farm Wages and Living Standards in the Industrial Revolution: England, 1670-1869'.p.485 Table 4.

<sup>53</sup> Wages varied not only over time, but within comparatively short distances. In 1834 agricultural wages were recorded in Watford as 12s – 14s in summer, and 10s – 12s in winter, while in St Albans they were only 10s – 11s in summer and 8s – 9s in winter. *PP 1834 Vol.XXX Report of the Commission on the Poor Laws*. Appendix (13 1) Answers to Rural Queries Part 1. pp 224, 226.

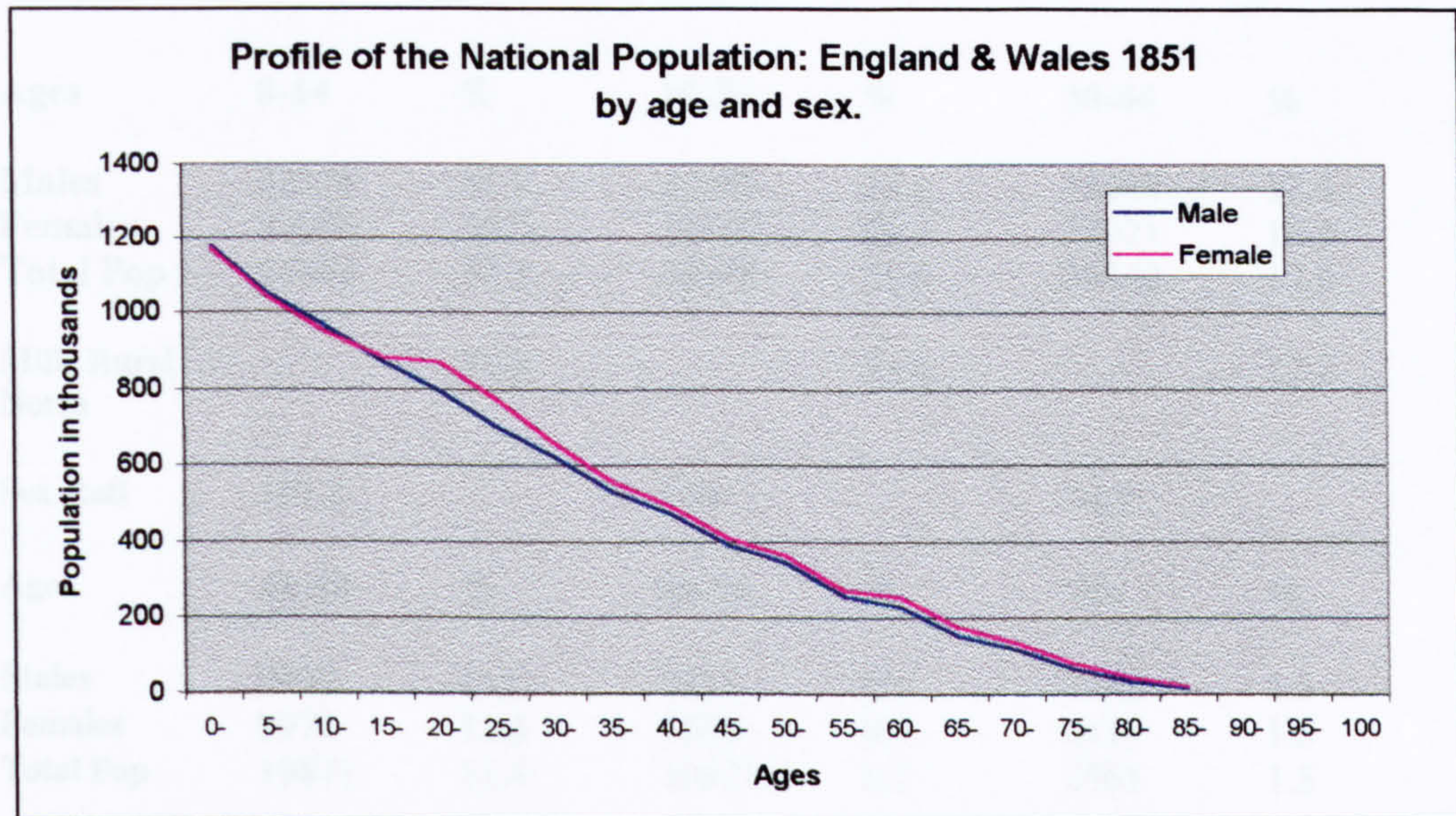
**Chart 4.1 : The Hertfordshire Population 1851**

Source: PP 1852-3 :1851 *Census Report, Population Tables II Ages of the People p.139*

Chart 4.1 reveals the main points of variation between the male and female age profiles in mid-nineteenth century Hertfordshire. It is here apparent that other than during the years of extreme youth and early adulthood, females significantly exceed males at all ages. Comparison with Chart 4.2 confirms that this is a national phenomenon, females outnumbered males by a similar proportion in every census 1801-1851.<sup>54</sup> In both 1801 and 1851 the sex ratio is 97, comparable to the rural districts of Watford. National and Hertfordshire profiles differ materially at the stage at which females begin to outnumber males. In Hertfordshire, females dominate from age 20, but nationally, females outnumber males by age 15.

<sup>54</sup> PP 1852-53 Vol. LXXXV *Census Report 1851 Population Tales I Numbers of the Inhabitants p.xxvii.*

## Chart 4.2 The National Population 1851.



Source, Mitchell and Deane. *Abstract of British Historical Statistics* p.12

Two elements influence the variations : firstly, the age distribution of each sex, and secondly, the sex ratio itself. Broken down into age cohorts the profile yields the following table:

Although the population of the county grew between 1801 and 1851 from 101,892 to 173,963, an increase of 71%.<sup>1</sup> Herfordshire was, at both periods,

<sup>1</sup> Nineteenth-century Herfordshire had a high birth rate, but a high death rate, and the natural increase.

<sup>2</sup> Report of Table 1.4 taken from *PP 1852-1* vol. 12, 1852, p. 10. The appendix to Report Table 3, Increase of Population, gives:

According to the Census 1851 Summary Table (only England, p. 27) and 6. 4 year Table III (total population for Heres was as follows: 1801, 101,892; 1851, 173,963, an increase of 71%, most particularly between 1811 and 1821. *Herfordshire*, p. 10.

**Table 4.3 All Hertfordshire : Age Cohorts and Sex Ratio. 1851**

Ages	0-14	%	15-29	%	30-44	%	
Males	32576	37.7	22589	26.1	15048	17.4	
Females	32086	36.7	22489	25.7	15921	18.2	
Total Pop	64662	37.2	45078	25.9	30969	17.8	
Mills Rural Norm		36.6		25.4		17.2	
Sex Rati	101.5		100		94.5		
Ages	45-59	%	60-74	%	75+	%	All
Males	9899	11.5	5211	6.0	1142	1.3	86465
Females	9972	11.4	5610	6.4	1419	1.6	87497
Total Pop	19871	11.4	10821	6.2	2561	1.5	173962
Mills Rural Norm		11.8		6.9		1.7	
Sex Ratio	99		93		80.5		99

Source: Figures from published Reports 1851 Census. PP 1852-3 Vol.LXXXV Ages of the People. Division III South Midland Counties p.139

The percentage distribution of males and females correlate closely after age 45, although males outnumber females under the age of thirty, and females outnumber males in the 29-44 age group. The indication therefore, in Chart 4.1 and Table 4.3, is that males have migrated, most probably from the necessity of seeking work, while females find employment locally<sup>55</sup>. In the context of the mills, traditionally seeking to employ women and children the profile is favourable.

Although the population of the county grew between 1801 and 1851 from 101,892 to 173,963, an increase of 71%,<sup>56</sup> Hertfordshire was, at both periods,

<sup>55</sup> Nineteenth-century Hertfordshire has a higher proportion of working women than the national average.

<sup>56</sup> Figures as Table 3.4 taken from :*PP 1852-3 Vol. LXXXV Census Report 1851 Appendix to Report: Table 5. Increase of Population* p.xcii  
According to the Census 1851 Summary Tables for the Counties of England & Wales Table III p.clxviii, population for Herts was as follows: 97,393 in 1801 to 167,298 in 1851, an increase of 72%, most spectacularly between 1811 and 1821, from 111,225 to 129,731.

among the ten counties of lowest population in England. Judging by density of population, the balance changes somewhat, and on a rising scale (lowest density to highest) of 44 counties<sup>57</sup>, Hertfordshire in 1851 was 28<sup>th</sup>, or approximately 1/3 of the way down a density league table of English counties. (Table 4.4) While the average national density stood at 332 persons per square mile or 10 persons to 19 acres, Hertfordshire averaged 274 persons to the square mile, or 10 persons to 23 acres. Therefore, although a rural county, where only 24% of the population was resident in towns,<sup>58</sup> Hertfordshire was by no means under-populated in relation to its size, nor, as shall be shown, depopulated by out-migration.

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<sup>57</sup> Includes the City of York as a separate entity

<sup>58</sup> PP 1851-2 Vol. LXXXV Reports of 1851 Census Table XXVIII 'Proportion per cent of Town and of Rural Population in the Divisions and Registration Counties of England and Wales' p.50



Table 4.4 Population and Inhabited houses to the square mile : 1851

Counties	Persons Per square mile	Inhab Houses	Acres Per person	Inhab House	Counties	Persons Per square mile	Inhab Houses	Acres Per person	Inhab House
Westmorland	77	15	8.3	43.3	Norfolk	209	44	3.1	14.5
York, N. Riding	102	21	6.3	30.4	Essex	222	44	2.9	14.4
Cumberland	125	23	5.1	27.2	Hertford	274	53	2.3	12.0
Hereford	138	29	4.6	22.4	Leics	287	61	2.2	10.5
Lincs	146	29	4.4	21.8	Derby	288	58	2.2	11.1
Northumberland	154	24	4.1	26.2	Notts	329	67	1.9	9.6
Rutland	154	31	4.2	20.9	England	332	60	1.9	10.6
Hunts	178	37	3.6	17.4	Gloucester	364	69	1.8	9.3
Salop	178	35	3.6	18.1	Kent	375	66	1.7	9.7
York, E. Riding	182	37	3.5	17.3	Worcs	375	75	1.7	8.5
Dorset	186	37	3.4	17.5	Durham	399	67	1.6	9.6
Wilts	188	38	3.4	16.7	Cheshire	412	77	1.6	8.3
Norfolk	209	44	3.1	14.5	York, W. Riding	496	99	1.3	6.5
Northants	216	45	3.0	14.3	Staffs	535	102	1.2	6.3
Devon	218	38	2.9	16.8	Warks	539	110	1.2	5.8
Essex	222	44	2.9	14.4	Surrey	910	145	0.7	4.4
Bucks	224	46	2.9	14.1	Lancs	1064	184	0.6	3.5
Cambs	226	45	2.8	14.1	Middx	6683	850	0.1	0.8
Suffolk	228	47	2.8	13.7	York City	8542	1665	0.7	0.4
Sussex	230	40	2.8	15.9					

Source: Census Report 1851 Population

It is evident from Table 4.5 that the main northern industrial areas closely associated with the textile trade; Cheshire, Staffordshire and Lancashire are far more densely populated than the national average, running second only to the metropolitan districts of Middx and York. By contrast, Derbyshire, where much of the silk production began, has a population density close to that of Hertfordshire, and a correspondingly similar allocation of inhabited houses to the acre. The population of Derby had been close to twice that of Hertfordshire in 1801, and that differential was largely maintained

**Table 4.5 Population: the numerical and percentage increase of selected English counties 1801-51.**

**Divisions and  
Registration Counties:**

	1801	1851	Increase	% Increase
Derby	140998	260693	119695	84.9
Herts	101892	173962	72070	70.7
Cheshire	189411	423526	234115	123.6
Lancs	683252	2067301	1384049	202.6
Staffs	254084	630545	376461	148.2
Warks	216135	480120	263985	122.1
Bucks	95827	143670	47843	49.9
Beds	66176	129789	63613	96.1
Eng & Wales	8892536	17882314	8989778	101.1

*Source: Report s 1851 Census PP 1852-3 Vol. LXXXV Appendix to Report: Populations of Counties / Principal Towns Table 5. Increase of Population p.xcii*

The national increase of 101% over the same half-century<sup>59</sup> was more nearly reflected in the urban districts of the county, yet still only four Hertfordshire towns counted more than 5000 inhabitants.<sup>60</sup> As aligned with its neighbours,

<sup>59</sup> Population figures for England and Wales vary within the Census Reports: those given in Table VII of the Report and Summary Tables p.xxix PP 1852-3 Vol. LXXXV are 1801 : 9,139,704 and 1851 : 18,004,551 A national increase of 97%.

<sup>60</sup> Bishop Stortford, 5280, Hertford 6605, Hitchin 5258, St Albans 7000

Hertfordshire retained its numerical superiority over the less populated counties of Buckinghamshire and Bedfordshire, population of the former increasing by 50% and the latter by 96%.

The 1851 population of Hertfordshire, amounting to 173962, drew 30% of its inhabitants from the other English counties; of these, 35% were of comparatively recent arrival, being under twenty years old in 1851, and 65% being twenty years old or over. Incomers in fact accounted for 22.5% of the total population under the age of twenty, and 37% of the population aged twenty years and above. Natives of Cambridgeshire made up 6.46% of the Hertfordshire population, followed by 4.87% born in Essex, 4.07% born in Middlesex and 3.04% born in Buckinghamshire.<sup>61</sup>

Bordering Cambridge, Essex, Bedfordshire, Buckinghamshire, and Middlesex, Hertfordshire exhibits localised characteristics (sectors of employment and production) in common with all of these, and cross border migration of inhabitants is therefore understandably common. The South West region of Hertfordshire attracted the bulk of its migrants from Buckinghamshire and Bedfordshire, with the towns of St Albans and Hatfield also absorbing a smaller but still substantial number of persons from Essex. Of these only Essex had any substantial connection to the silk industry, and therefore this in-migration was unlikely to contribute other than minimally to the growth or expansion of any silk manufacturing enterprise, despite the prosperous presence of the Abbey Mills in St Albans. Tenuous links remained between the silk mills at Tring and Aylesbury, but there is little evidence of silk workers moving to Tring from the Aylesbury district, other than groups of pauper apprentices during the 1830's.<sup>62</sup>

As compared to its immediate southern and western neighbours, 69.86% of the Hertfordshire population was native born, of which 36.53% was under twenty years of age, while Buckinghamshire counted 78.85%. Since the census for 1851 was taken in late March, before the summer season for temporary migrant

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<sup>61</sup> Figures calculated from PP Census Report 1851 England & Wales Appendix to Report: Populations of Counties / Principal Towns Table 5. Increase of Population p.xcii

agricultural workers, it is logical to assume that the majority of these migrants were permanent residents, and that Hertfordshire as a whole was therefore sufficiently prosperous both to attract additional, and to retain a large proportion of the native population.<sup>63</sup>

If prosperity may be at all calculated from housing provision, then Hertfordshire stood well amongst its neighbours, only the sub-district of Hertford showing that the number of families or occupiers of dwellings exceeded the number of inhabited houses by more than 10%.<sup>64</sup> This figure does not however take into account the size, (capacity) type or condition of housing in the shire.

### Occupational competition

The principal industries listed above changed little during the course of the nineteenth century.<sup>65</sup> What was the labour force sought by the silk mill proprietors? Traditionally it has been assumed that mill-owners sought to employ women and children. From whence therefore, came competition for this labour? Agriculture was chiefly the occupation of men and boys; women became domestic servants, straw plaiters, or worked in the rag factories serving the paper mills.

Straw plaiting claims the highest number of working women, but it is impossible to tell if they were full or part-time plaiters, although as previously stated, it is now hotly disputed that the plait trade was as seasonal as formerly believed. Nevertheless the returns give a figure of 8,753 females engaged in the plait manufacture, and a further 1,671 in making straw hats and bonnets, while as shown in Table 4.6, 6,074 are employed in domestic service, and milliners account

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<sup>62</sup> Aylesbury Guardians Minute Books 1838, 1839. BRO Ref: G2/3

<sup>63</sup> Bald population percentages can mislead: Buckinghamshire had a higher percentage of native residents, but initial population levels and growth rate were both less than Hertfordshire. The lower percentage of native residents in Hertfordshire must be set against an in-migration and natural population increase of 71% between 1801 and 1851. See Table 4.9

<sup>64</sup> *Census 1851* Appendix to Report, Table 11 p.xcvii

<sup>65</sup> Brewing became more important in Watford, as in the neighbouring district of Stanmore in Middx.

for a further 1,585.

Indoor farm servants number 1005, and although as noted above, men dominated agricultural occupations, 21,645 farm labourers and 1,663 farmers, there are some 300 female 'Agricultural labourers (outdoor)'.<sup>66</sup> Men tended to have the wider choice of occupation, and consequently a greater range of male-orientated occupations appears in the census reports. Not that women were excluded from most forms of trade: female cabinet makers and butchers, dealers and workers in coal, shoemakers and shopkeepers of all descriptions are represented in the Female Occupation Tables for Hertfordshire. In total, 32.46% of females in the county were recorded as working in paid employment.<sup>67</sup>

**Table 4.6 Working women in Hertfordshire 1851 : Selected occupations**

**Working Females in Hertfordshire, all ages.**

	No.	%
All Females	87497	100
Total Working Females	28495	32.5
Straw Plait	8753	10.0
Straw Hats/Bonnets	1671	1.9
Domestic	6074	6.9
Washerwomen	1036	1.2
Milliners	1585	1.8
Farmers wives/dau etc.	2012	2.3
Farm Servants (indoor)	1005	1.1
Farm Labourers	300	0.3
Silk	616	0.7

**Working Females aged 15 years and above.**

	No.	%
All Females	55501	100.0
Total Working Females	25261	45.5
Straw Plait	6606	11.9
Straw Hats/Bonnets	1334	2.4
Domestic	5699	10.3
Silk	180	0.6

Source: *Census Report 1851 : Occupations of the People Div.III South Midland Counties; Hertfordshire, Females p.165-167*

<sup>66</sup> PP 1852-3 Vol. LXXXV 1851 *Census Report. Occupations of the People Div.III South Midland Counties; Hertfordshire, Males pp162-164 Females pp.165-167*

<sup>67</sup> A figure calculated inclusive of farmers' wives, daughters, sisters etc., but exclusive of 'proprietors of land', those of independent means, or annuitants.

It is not denied that in some cases the interpretation of the returns may have been generously wide, nevertheless it does illustrate that women in Hertfordshire were not forced into factory or mill work for lack of opportunity elsewhere. Nor does it indicate the existence of a large pool of untapped labour. In the south west regions of Hertfordshire, the figure for working women is, as in Berkhamsted and St Albans, often considerably higher than that for the county overall, before adding mill work to the equation. That more than 45% of women over the age of 15 worked, compared to less than 26% nationally,<sup>68</sup> is a reflection both of the strength of the straw plait industry which claimed 10% of all females, and the high requirements for domestic service ... a typical country estate might employ upwards of a hundred servants, male and female. In addition, the low wages for male agricultural workers (Table 4.2) was a powerful incentive to female labour:

I walked by the side of a poor woman whose husband worked for the neighbouring squire. He did not earn 9s a week, and there were several in family; I remember asking her about the price of bread and bacon, and how much went for house-rent, and how much for clothes and shoes; and wondering to myself how this family kept life together. And they did *not*, at least not on 9s per week. There was the Union ready to receive them; but on the 9s a week it was evident that the whole family did not, could not, exist.<sup>69</sup>

As Table 4.7 shows, female employment remained high, showing a tendency to increase rather than decrease. In 1871, 34% of all females and 48.5% of females above the age of 15 were recorded as engaged in paid employment. There was little change in the type of employment open to them, although the straw industry and domestic service had increased their market share while farm service had shrunk to insignificant levels.

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<sup>68</sup> Best, *Mid-Victorian Britain 1851-75*.p.119 National figures for working women aged 15 years and above: 1851: 25.7%; 1861: 26.3%; 1871: 26.8%; 1881:25.4%

<sup>69</sup> Merryweather, *Experience of Factory Life: being a record of fourteen years' work at MrCourtauld's Silk Mill at Halstead, in Essex*. p.5

**Table 4.7 Working women in Hertfordshire 1871 : Selected occupations****Working Females in Hertfordshire, all ages.**

	No.	%
All Females	99434	100.0
Total Working Females	34082	34.3
Straw	12089	12.2
Domestic Servants <sup>70</sup>	10119	10.2
Milliners	2021	2.0
Farm Servants (indoor)	41	Less than 0.1
Farm Labourers	159	0.2
Silk	606	0.6

**Working Females aged 15 years and above.**

	No.	%
All Females	63983	100
Total Working Females	31012	48.5
Straw	10150	15.9
Domestic Service	9414	14.7
Milliners	1987	3.1
Farm Servants (indoor)	38	0.1
Farm Labourers	148	0.2
Silk	345	0.5

Source: *Census Report 1871 : County of Hertford Table 12: Occupations of Females at different Periods of Age p.141*

The depression in the straw plait trade shown in Chart 4.5 now becomes most apparent, as from employing 12% of the female population in Hertfordshire in 1871, by 1891 less than 3% of all females are thus employed. The overall drop in female employment to 28% may owe much to this one circumstance. It is notable that despite an increase of approximately 25% in the female population of Hertfordshire, from 99434 to 110654, (Tables 4.7 and 4.8) numerically the female workforce has remained virtually the same as the adult (15+) female working population of 20 years before. Is this a result of young, and indeed older, children being removed from the workforce by the Education Acts, or the collapse of the straw plait?

<sup>70</sup> 'Domestic Service' does not here include Inn Servants, nor wives at home.

**Table 4.8 Working women in Hertfordshire 1891 : Selected occupations****Working Females in Hertfordshire, all ages.**

	No.	%
Total Females	110654	100
Working Females	31056	28.1
Straw	3133	2.8
Domestic Service	11954	10.8
Dom + Charwomen	13463	12.2
Milliners	2510	2.3
Farm Serv/Lab	133	0.1
Silk	396	0.4

*Source: 1891 Census Report : County of Hertford Table 7 : Occupations of Males and Females aged 10 years and upwards p.174 Total number of females taken from p.161*

Equally important perhaps to levels of female employment was the low pay for the greater number of those occupations considered suitable for a female. However unpleasant, or even dangerous the work in a throwing mill, the pay was relatively high and more regular than in other occupations subject to seasonal demand. Even allowing for higher wages in the northern districts, the fact that child labour depressed adult wages, and that wages in the silk trade 'had always been very unequal',<sup>71</sup> work in the mills could offer independence for the single girl and extra 'out of season' income to a family.

<sup>71</sup> Pinchbeck *Women Workers and the Industrial Revolution 1750-1850*. p176 More specifically, Hudson also notes '... the extent of child labour in the textile trades in particular was a major force in keeping female wages low.' Hudson, *The Industrial Revolution* p.163



### The Hertfordshire Workforce 1841-1891

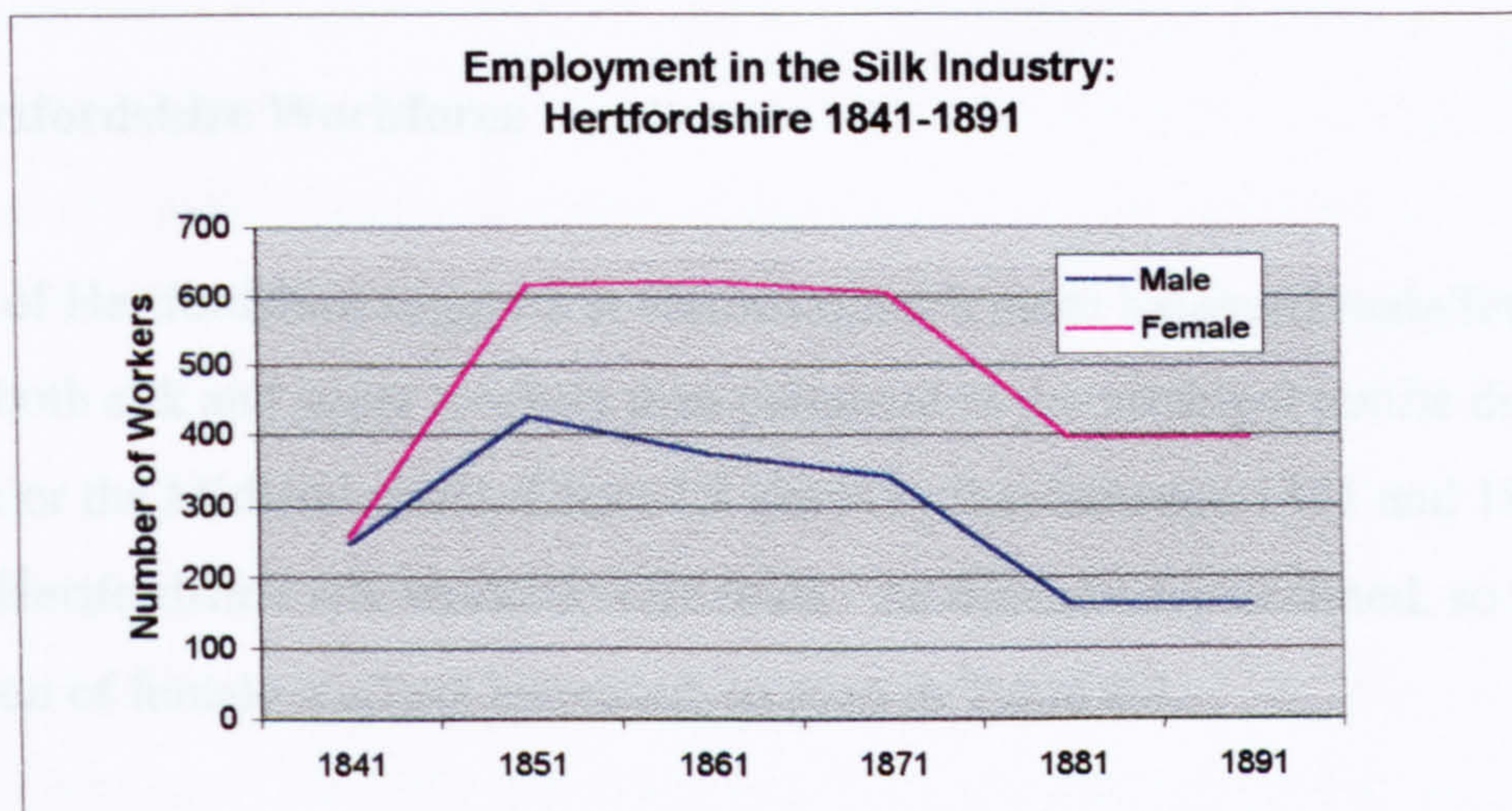


Chart 3a

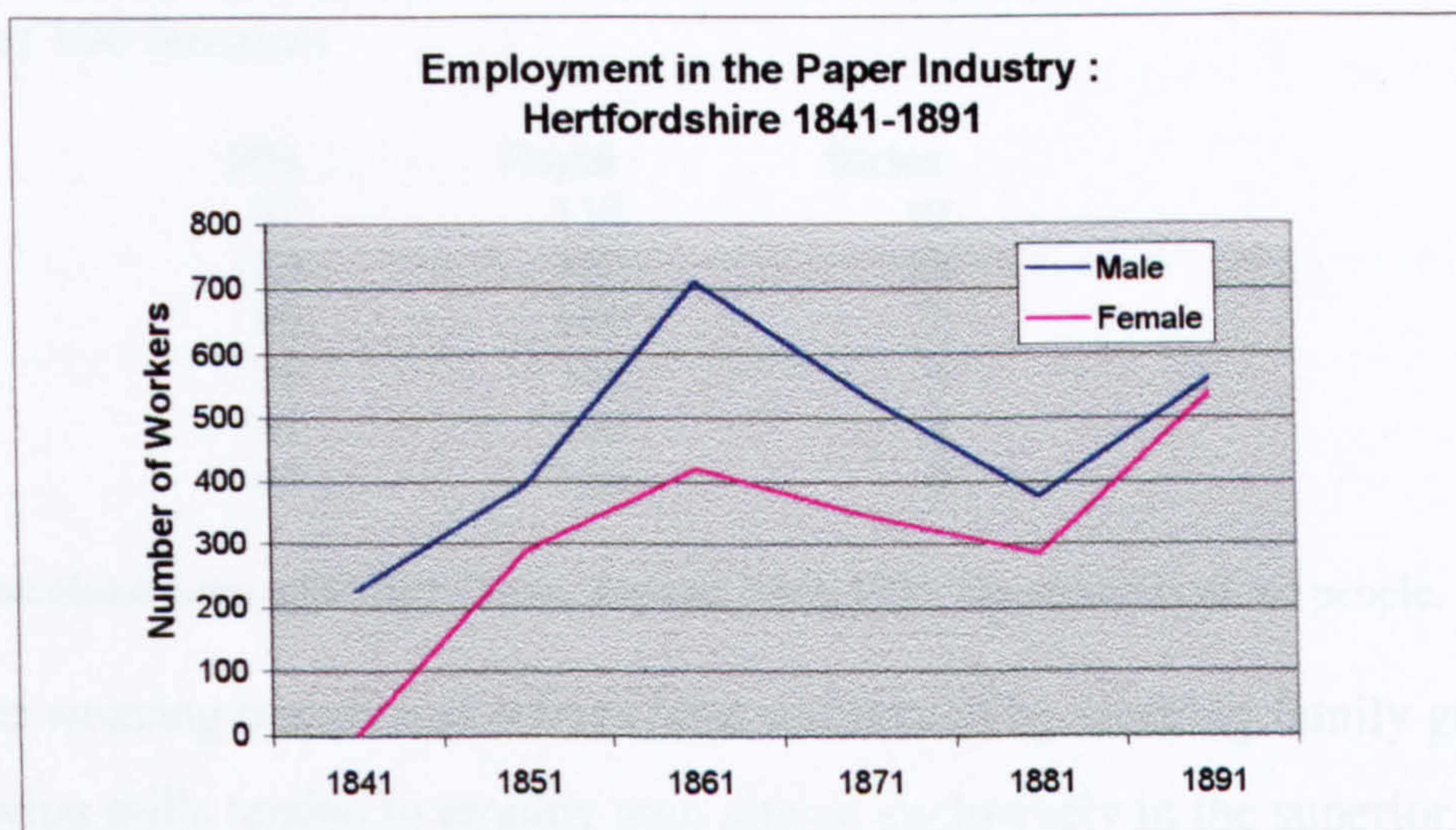


Chart 3b

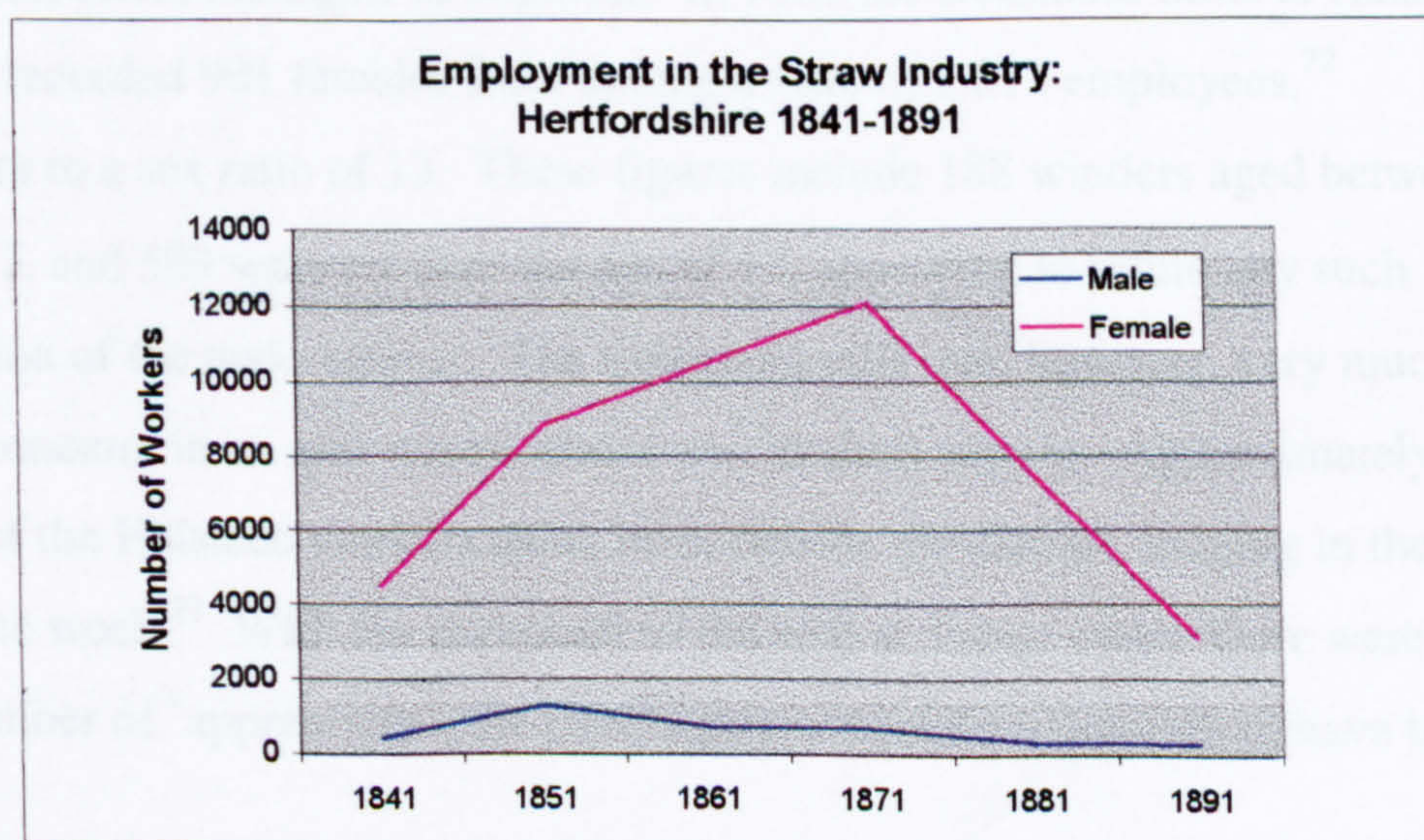


Chart 3c

Source: published Census Reports 1841-1891. Occupations of the people.

## The Hertfordshire Workforce

A study of Hertfordshire suggests at various times a more balanced male/female ratio of both silk and paper workers than pertained in the principal textile districts of Essex or the Midland shires, Chart 4.3 showing that between 1841 and 1851 40-50% of Hertfordshire silk workers were male. As the industry declined, so the proportion of female workers increased, as seen in Table 4.9.

**Table 4.9 Sex Ratios in Three Hertfordshire Industries :**  
(males per 100 females)

Year	Silk	Paper	Straw
1841	97	113	10
1851	69	137	15
1861	60	169	7
1871	56	155	6
1881	41	132	5
1891	41	104	9

Source: Calculated from published *Census Reports* 1841-1891 Occupations of the people.

While the weaving branch had always been dominated by working family groups, the throwing mills tended to employ men almost exclusively in the superior roles of overseer, clerk, manager, or engineer. In 1861 the Courtauld mills at Halstead in Essex recorded 901 females from among a total of 1,015 employees,<sup>72</sup> equivalent to a sex ratio of 13. These figures include 188 winders aged between 12 and 17, and 589 weavers over the age of 17, appearing to refute any such domination of the male weaver. The Courtauld mill was, however, very much a factory concern, in an area where labour was in short supply. Approximately one quarter of the Halstead workers came from outside the district, lodging in the town during the week.<sup>73</sup> With the exception of the mill at Tring, where there were a large number of 'apprentices', the Hertfordshire workforce appears to have been

<sup>72</sup> Adams, Bartley, et al. *'Under Control' Life in a Nineteenth Century Silk Factory*. p.17

<sup>73</sup> Adams, Bartley, et al. *'Under Control' Life in a Nineteenth Century Silk Factory*. p.5

drawn from the immediate vicinity.<sup>74</sup> But this may not always have been the case: all the Hertfordshire mills appear to have employed pauper apprentices, obtained from local or London Vestries, at some point in their history. By 1851 there is little evidence of either pauper apprentices or substantial numbers of migratory workers at any of the Hertfordshire mills other than Tring. More than 60% of the silk workers resident in the combined Oxhey and Watford districts gave their place of birth as Watford, 8.4% gave Bushey, 3% gave Rickmansworth, and 2.5% each coming from Abbots Langley, St Albans, and, furthest away of all, from Shepton Mallet in Somerset. Of these latter, all are adult, and only two are related.<sup>75</sup> Woollams of the Abbey Mills at St Albans also took pauper apprentices during the early days of production in 1803<sup>76</sup> and 1804<sup>77</sup> but thereafter both the Abbey Mills and the mill at Redbourn relied heavily upon local labour.

In contrast to the high proportion of female labour at Halstead, the South Midland Counties as a whole record the following figures for 1851:

Silkworkers: Male under 20 yrs	416	Over 20 yrs	702
Females under 20yrs	658	Over 20 yrs	711
Sex Ratio	63		99

The widest variation in terms of sex ratio are to be found in the 'under twenty' age bracket, where girls comprise 61% of the labour force, and boys only 39%. The surprising factor is the negligible difference between the sexes in employment at twenty years old and above. This was not typical of the Hertfordshire workforce until the age of 35 and above. At this age employment of both men and women had dropped to comparable levels (Chart 4.7), with a hiccup of elderly women employed between the ages of sixty and eighty. Whether these really worked

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<sup>74</sup> St Margaret Westminster: *Minutes of the Proceedings of the Governors of the Poor* 1850-51 CWA E5219

<sup>75</sup> Mary and Luke Goldsney: Sched 53 Oxhey 2b *Census* 1851 Hertfordshire

<sup>76</sup> St Martin in the Fields *Churchwardens' and Overseers' Minute Book*, 17 Aug 1803 p.362. CWA: F2075

<sup>77</sup> *Letters to Vestry*: St Margaret Westminster, Jan & Feb 1804 . CWA E3338

machinery, were retired silk workers stating past occupations, or cleaners and gleaners, is problematical.<sup>78</sup>

In a comparison of the three industries of silk, paper and straw plait manufacture (Charts 4.3 - 4.5) it is immediately obvious that the straw plait employed a higher number of workers, and enjoyed a peak period that stretched from 1851 to culminate at the apogee of 1871. The period in which the greatest number claimed employment in the straw plait industry, was not necessarily the period of greatest reward for the plaiter: Lucy Luck, born 1848 at Tring, began work in the silk mill at the age of eleven for 2s 6d per week, made up to 3s 6d by the Parish, and plaiting five yards of straw after work each evening.<sup>79</sup> In 1863 she travelled to Luton, intent on learning the straw hat trade. There, they would not pay her more than 2s a week, and an informal 'apprenticeship' to the trade, paid nothing at all other than bed and board.<sup>80</sup>

The decline of the plait trade was sharp and swift, by 1891 there were approximately one quarter the number of straw plait workers as in 1871. (Chart 4.6) The paper and silk industries have strikingly close profiles, following differing trends only in the higher profile of the silk mills to their peak in 1851, and their subsequent protracted decline, while the paper industry follows a slow rise until 1861, when it too declines gently. After a low point in 1881 an altogether stronger recovery is evident by 1891. For the silk and plait industries there is no such recovery: figures for silk workers in 1881 reflect the closure of the Rookery mill.

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<sup>78</sup> Several elderly women are recorded in the Oxhey district of Watford 1851, as silk throwster, silk mill labourer, and an eighty-year-old woman as 'pauper, silk throwster.'

<sup>79</sup> Luck, *A Little of my Life*. p.4 At age 13 she was sent to St Albans to work for a Mr and Mrs H~ who owned a shop and beerhouse near the Abbey, but she does not seem to have considered a return to silk work at the Abbey Mills.

<sup>80</sup> Luck, *A Little of my Life*. p.7

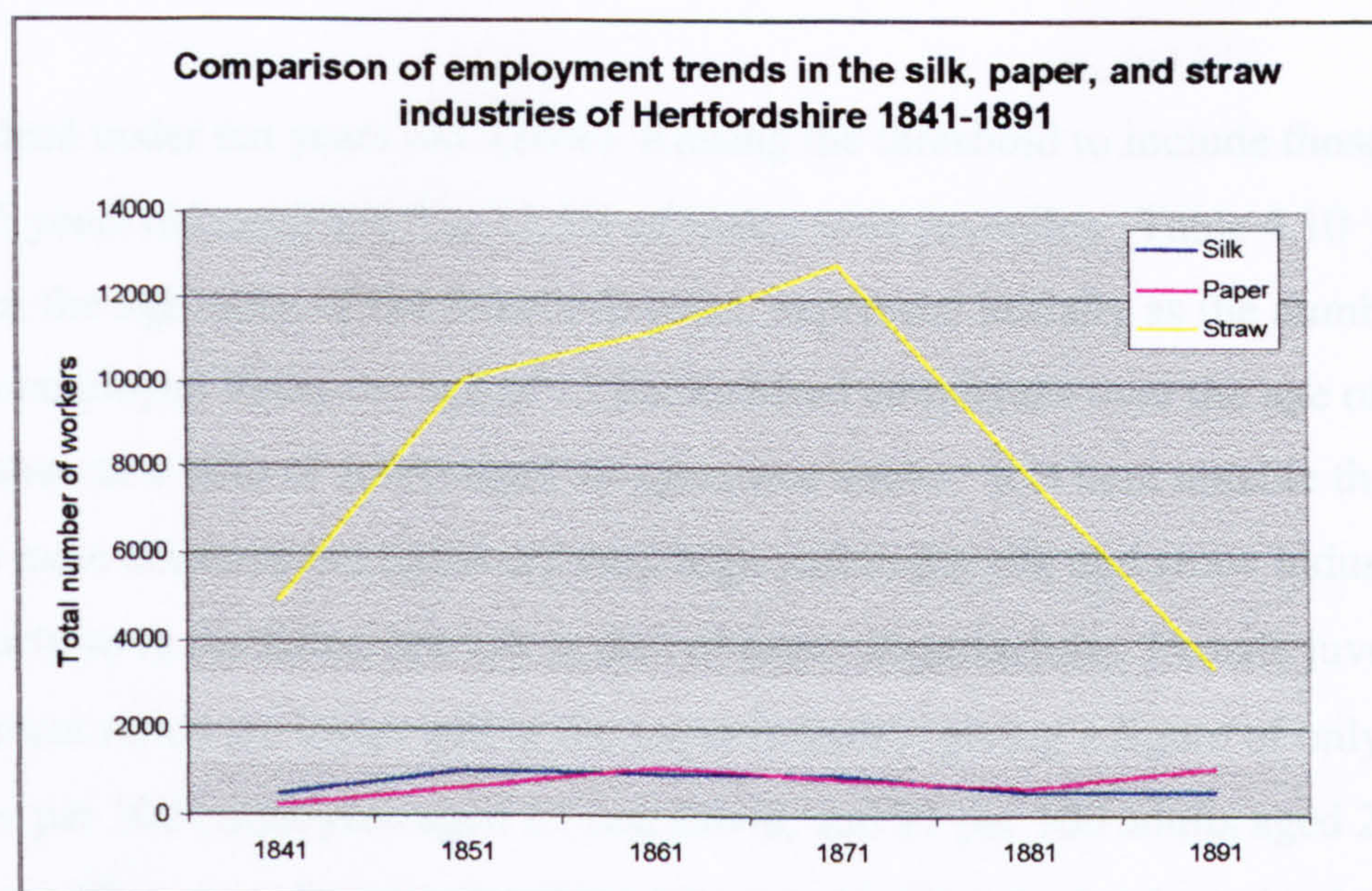


Chart 4.6

Source: *Census Reports 1841-1891*

Overall trends are reflected in the changing ratios of male and female employment within each industry. Charts 4.3, 4.4, and 4.5 demonstrate the differences and similarities. The peak times of each industry except the straw plait, is found to be also the peak time of male employment. As markets shrink and businesses contract, employment in each industry falls, and with it, the percentage of male employees. Increased female employment may have proved easier and more attractive after the closure of several silk mills ... in the Oxhey district of Watford, Hamper Mill, producing paper, and Rookery Mill, throwing silk, stood in close proximity. It is noticeable that the census returns frequently record siblings working one at each mill. Sons, though not invariably, tended to work at Hamper mill and daughters at Rookery Mill. The Rookery Mill finally closed in 1881, to reopen as a steam laundry employing a considerable number of women and girls.

The straw plait is unique among these three as male employment was never greater than 13%, (in the minor peak year of 1851) the majority of these being young boys, straw dealers or suppliers rather than actual plaiters. From Chart 4.7 it is seen that at this time of greatest male involvement, a high number of males

were indeed under ten years old. (26%) Raising the threshold to include those under 15 years old confirms that 52.5% of males were juveniles. Table 4.10 compares the age ratios of the three industries, expressed initially as the number of children employed under the age of 15 per hundred employees over the age of fifteen, then as a ratio of adults aged 20 years and above. It is here notable that juvenile male employment ratios are very high within the silk and straw industries, particularly so in the latter, but low in that of paper manufacture. Female juvenile employment ratios are lower still in the paper industry, giving a figure of only 16 juveniles per 100 employees aged 15 and above, and 21 per 100 adults aged 20 and above. The more direct comparison between two female dominated industries, the straw plait and silk, reveals a higher ratio of juveniles in the Hertfordshire silk mills than employed in the combined rural 'cottage' industry of plaiting, and the hat factories of the urban districts. Between 1851 and 1871 the ratio of juveniles to adults rose substantially, in contrast to both the paper and straw industries, where it fell: 'When textiles were booming, the proportion of children in the factories rose. When textiles were in depression, they were the first to be cast off.'<sup>81</sup> Nationally, employment figures for the silk industry had declined since 1856, but were nevertheless still higher than in 1851.<sup>82</sup> As seen in Chart 4.5 employment in the Hertfordshire mills continued to rise until the 1870's, and it is suggested that regional decline occurred some ten years after the commencement of national decline. Figures for 1891 calculated from the Census returns of the silk producing districts include auxiliary workers ~ watchmen at the mills, clerks, and cleaners ~ who specifically stated their place of occupation, and therefore do yield marginally higher figures for silk manufacture employees than do the tables given in the 1891 Census Report for England and Wales.<sup>83</sup> These were generally

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<sup>81</sup> Deane and Cole, *British Economic Growth*. p.211

<sup>82</sup> Mitchell and Deane, *Abstract of British Historical Statistics*.p.211. Table 28A

<sup>83</sup> *Census Report* England and Wales 1891. Division III South Midland Counties. Table7 Vol.3 pp. 174-181 -Occupations of Males and Females aged 10 Years and Upwards, in the Registration Division and Counties, and in each Urban sanitary District of which the Population exceeds 50,000 Persons.

adults<sup>84</sup> and overall figures may therefore reflect a lower proportion of juvenile employees than was actually the case among factory-floor operatives.

**Table 4.10 Age Ratios in Three Hertfordshire Industries.<sup>85</sup>**

Industry	Sex	% Aged 0-14					
		1841	1851	1861	1871	1881	1891
Silk	Male	*	41.9	50.7	47.8	34.0	28.8
	Female	*	29.2	39.4	43.6	26.8	20.3
	All	*	34.4	43.6	45.1	23.2	23.0
Paper	Male	*	20.5	27.6	18.0		
	Female	*	5.2	5.0	2.3		
	All	*	14.1	19.2	11.8		
Straw	Male	*	52.5	53.2	42.4		
	Female	*	24.4	18.0	16.0		
	All	*	28.1	20.4	17.5		

Industry	Sex	% Aged 20+					
		1841	1851	1861	1871	1881	1891
Silk	Male	28.9	35.8	31.9	33.4	37.1	26.1
	Female	33.5	50.6	28.4	28.5	31.0	33.8
	All	31.2	44.6	29.7	30.3	26.3	31.3
Paper	Male	88.8	65.3	53.7	64.4		
	Female	85.3	72.6	66.9	78.3		
	All	86.4	68.4	58.6	69.9		
Straw	Male	28.9	34.9	37.6	49.1		
	Female	64.3	57.1	64.6	69.3		
	All	61.8	54.2	62.8	68.2		

Source :published *Census Reports* 1841-91

The major 'exodus ages' for male and female in the silk industry differ by some ten years : men at twenty-five, women at thirty-five. Paper workers, if they do not leave between the ages of ten and twenty are more likely to remain into middle age. A second major exodus point comes at age 50, then again at 65.

<sup>84</sup> One exception was Charles Warwick (or Wallace) recorded as book keeper at Redbourn in 1861, who was the thirteen year old son of the manager. Census 1861 Redbourn District 9 Sched 102

Adult women appear to fade from the workforce less abruptly than in the silk mills through the ages of marriage and family responsibility, a significant proportion remaining employed at age 60. The straw plait also offers continued employment to the adult female, but even here, in an industry not confined to factory or mill, the majority of plaiters are under 20 years of age. (Chart 4.9)

All three industries concentrated employment upon the young, but as shown in Charts 4.7-4.9, it is in the age ranges for male and female employees that the subtle variations become apparent. These show the numerical spread of employees over five-year age groups. Charts 4.10-4.12 show the same data expressed as percentages of each entire age cohort.

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<sup>85</sup> See Chapter 7, Table 7.8 p.253 below, for the changing percentage of juvenile silkworkers at individual mills in Hertfordshire.



The Hertfordshire Workforce 1851: by age and gender

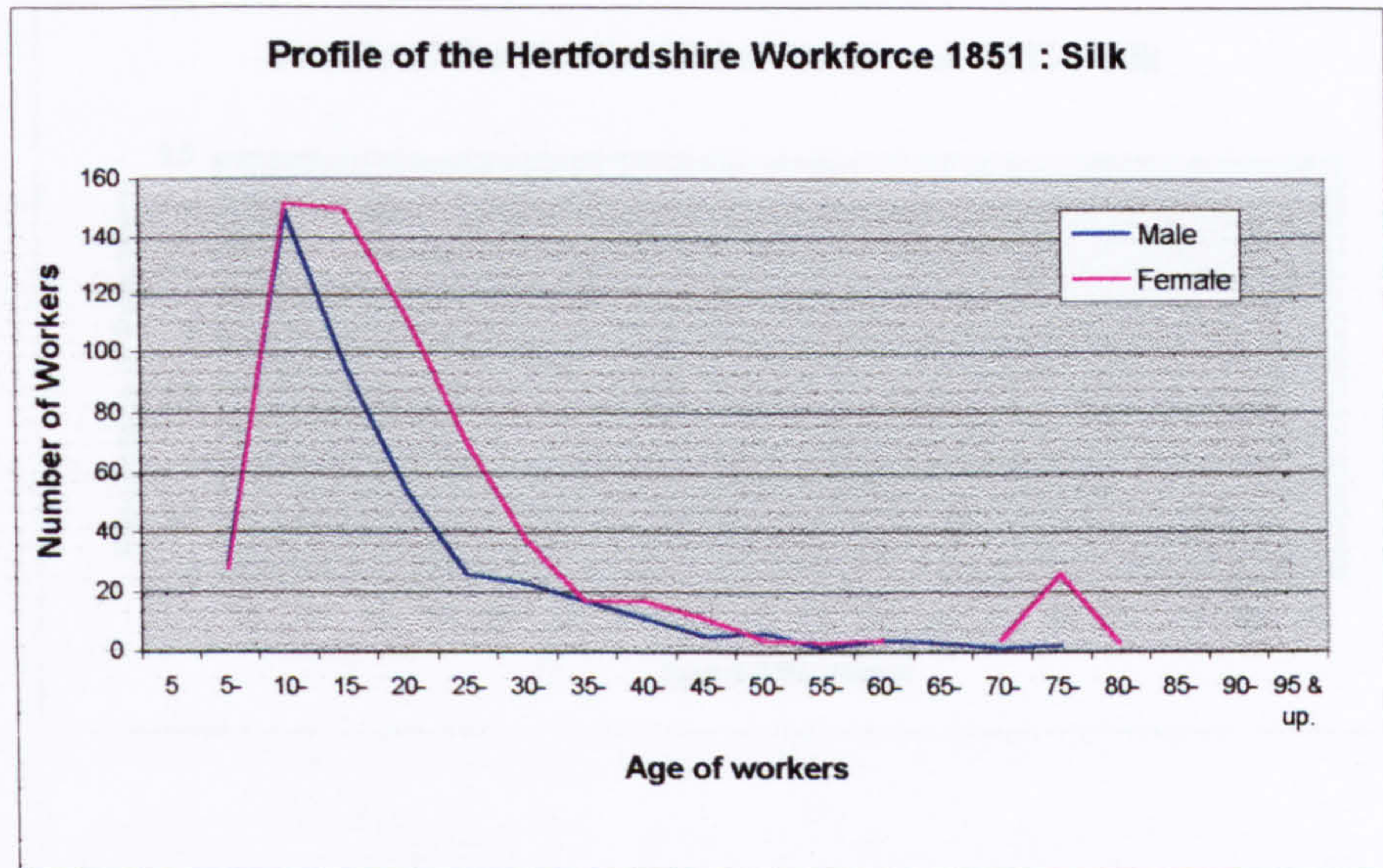


Chart 4.7

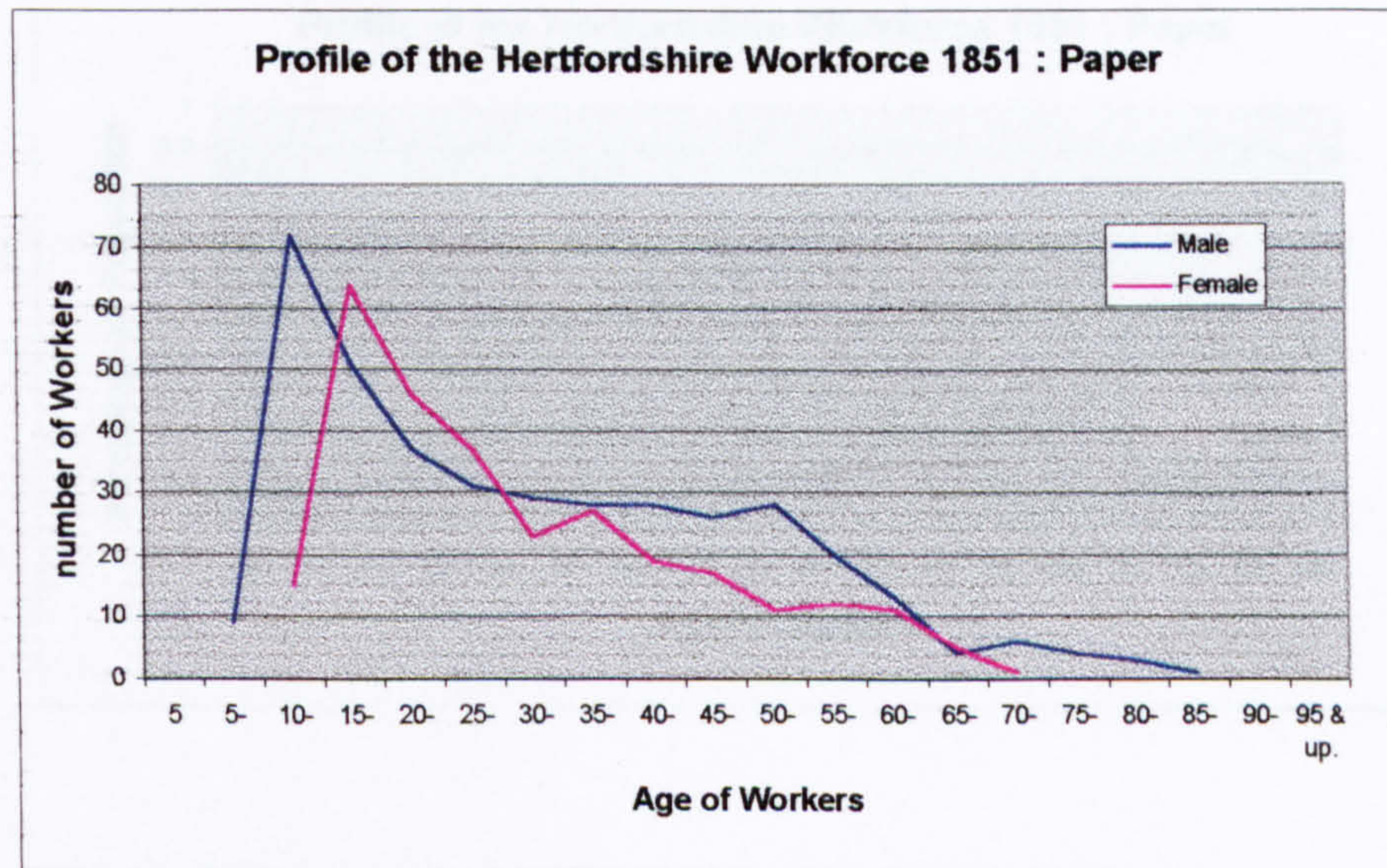


Chart 4.8

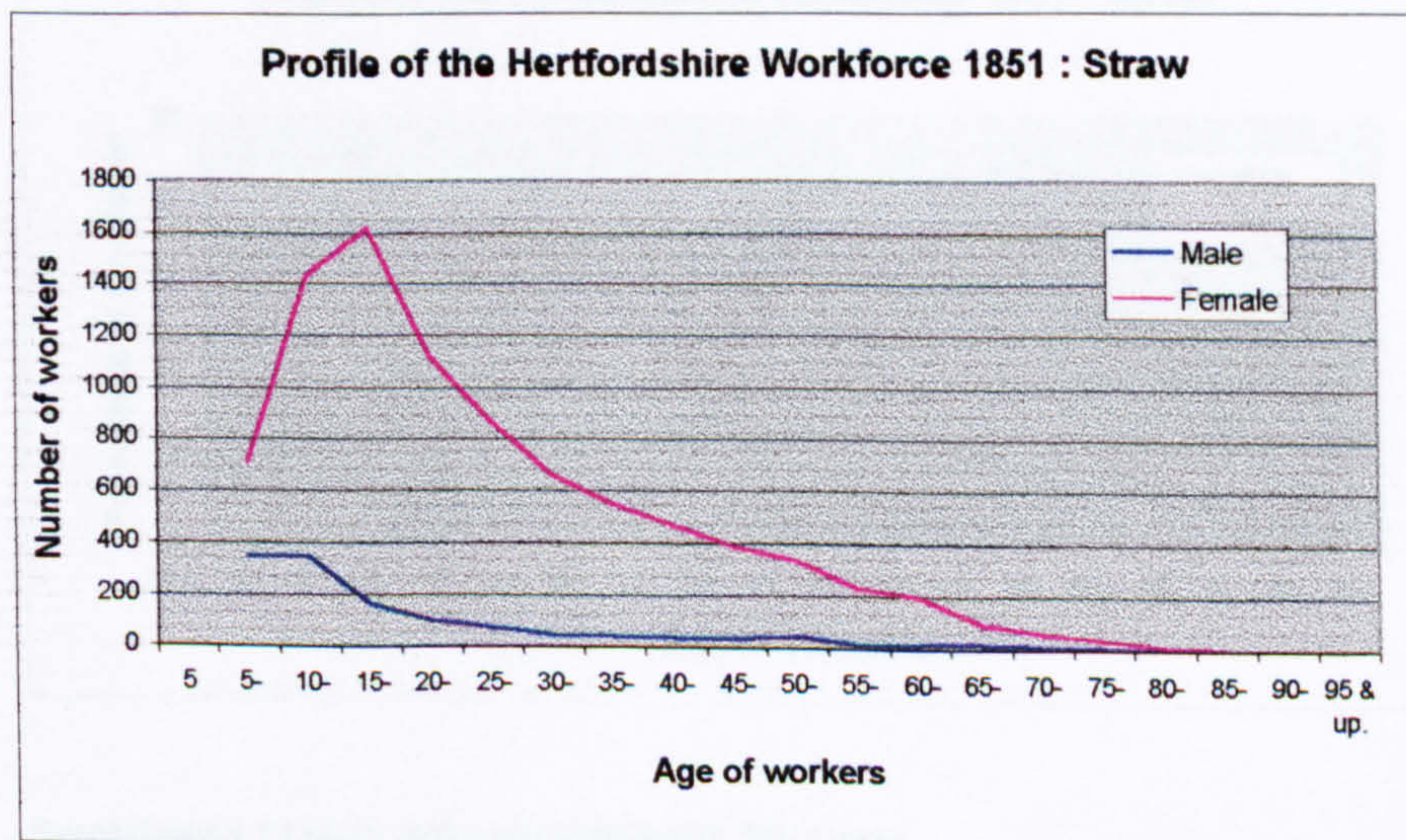


Chart 4.9

The Hertfordshire Workforce 1851: by age and gender

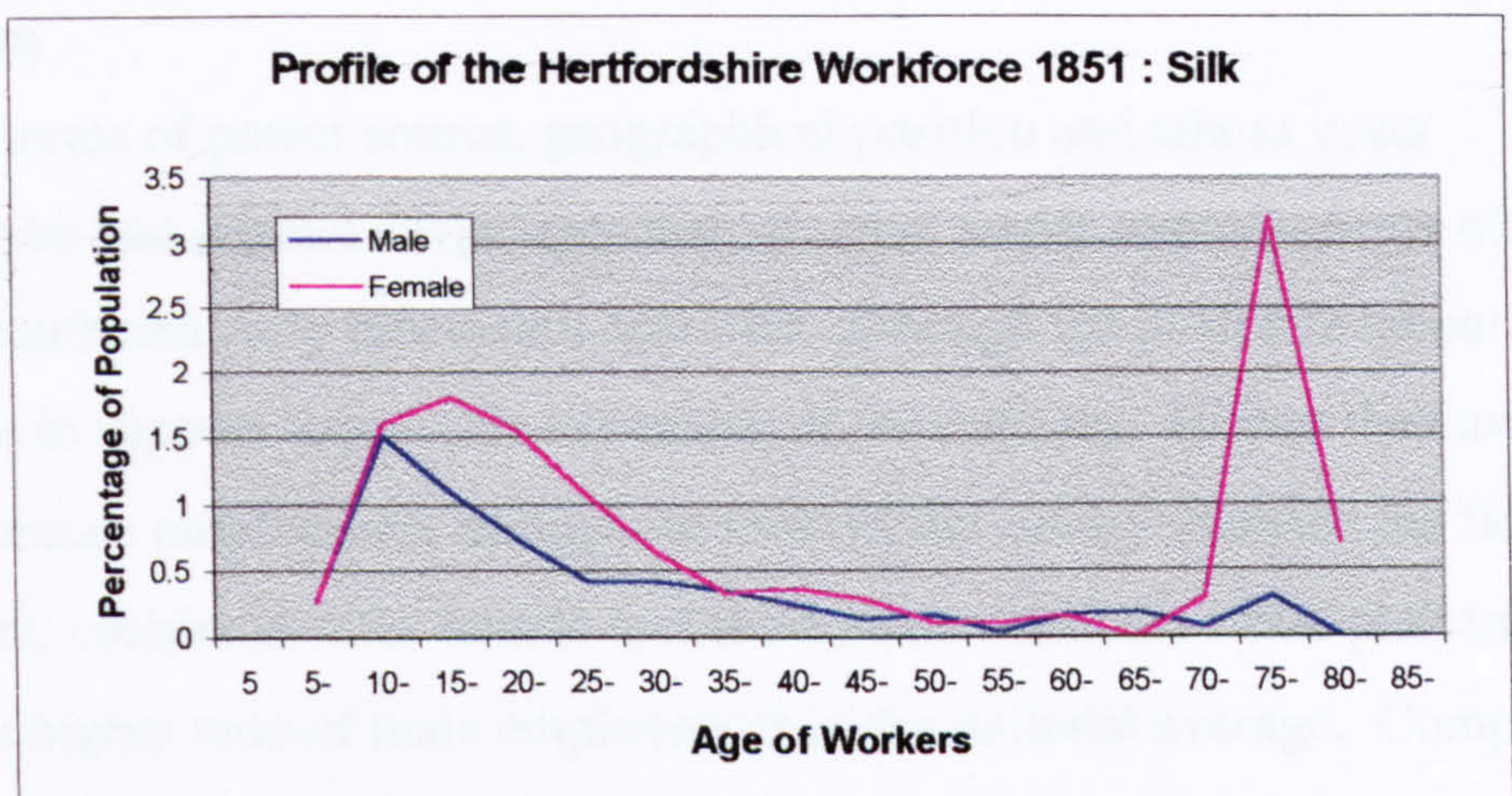


Chart 4.10

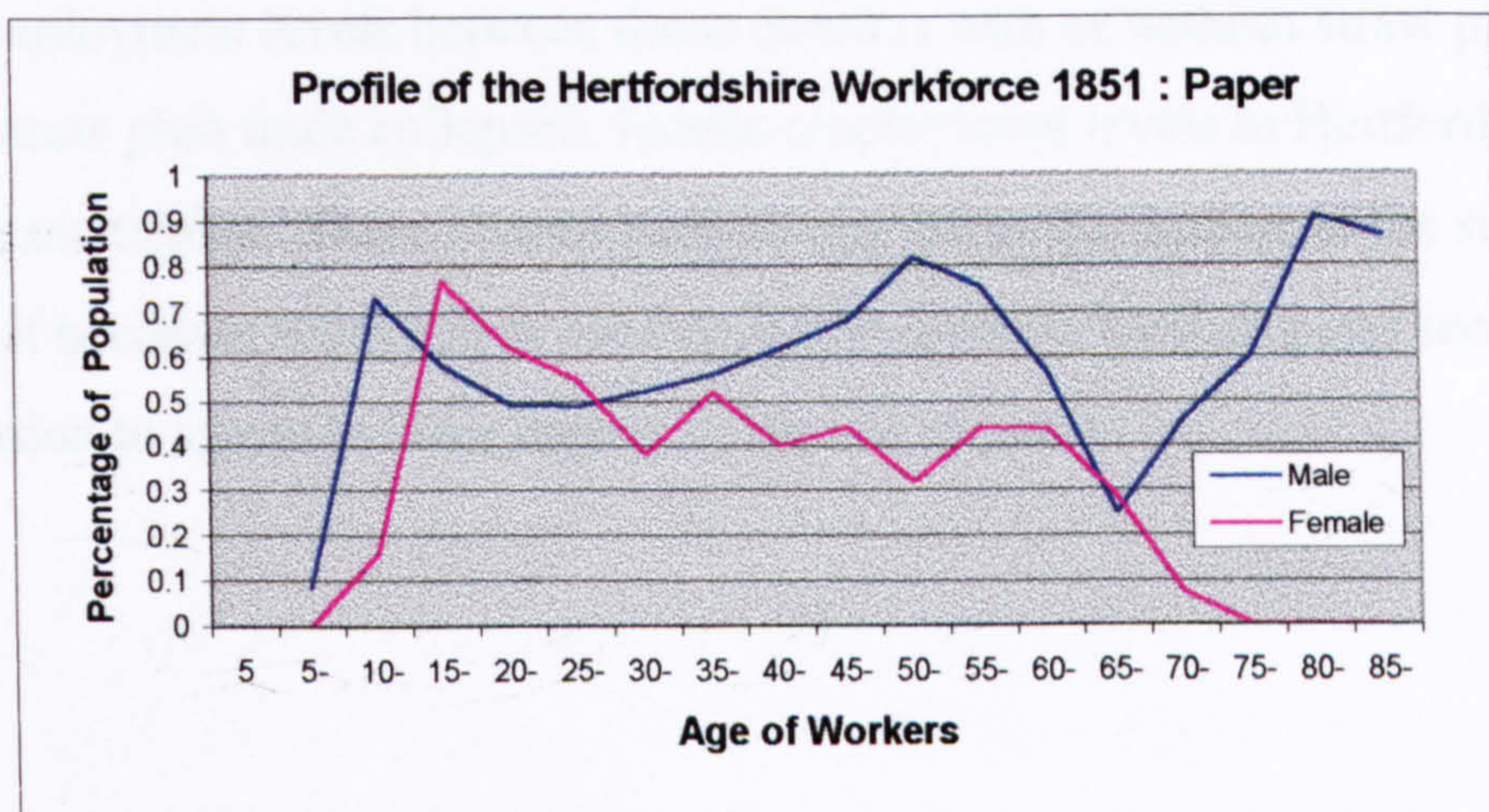


Chart 4.11

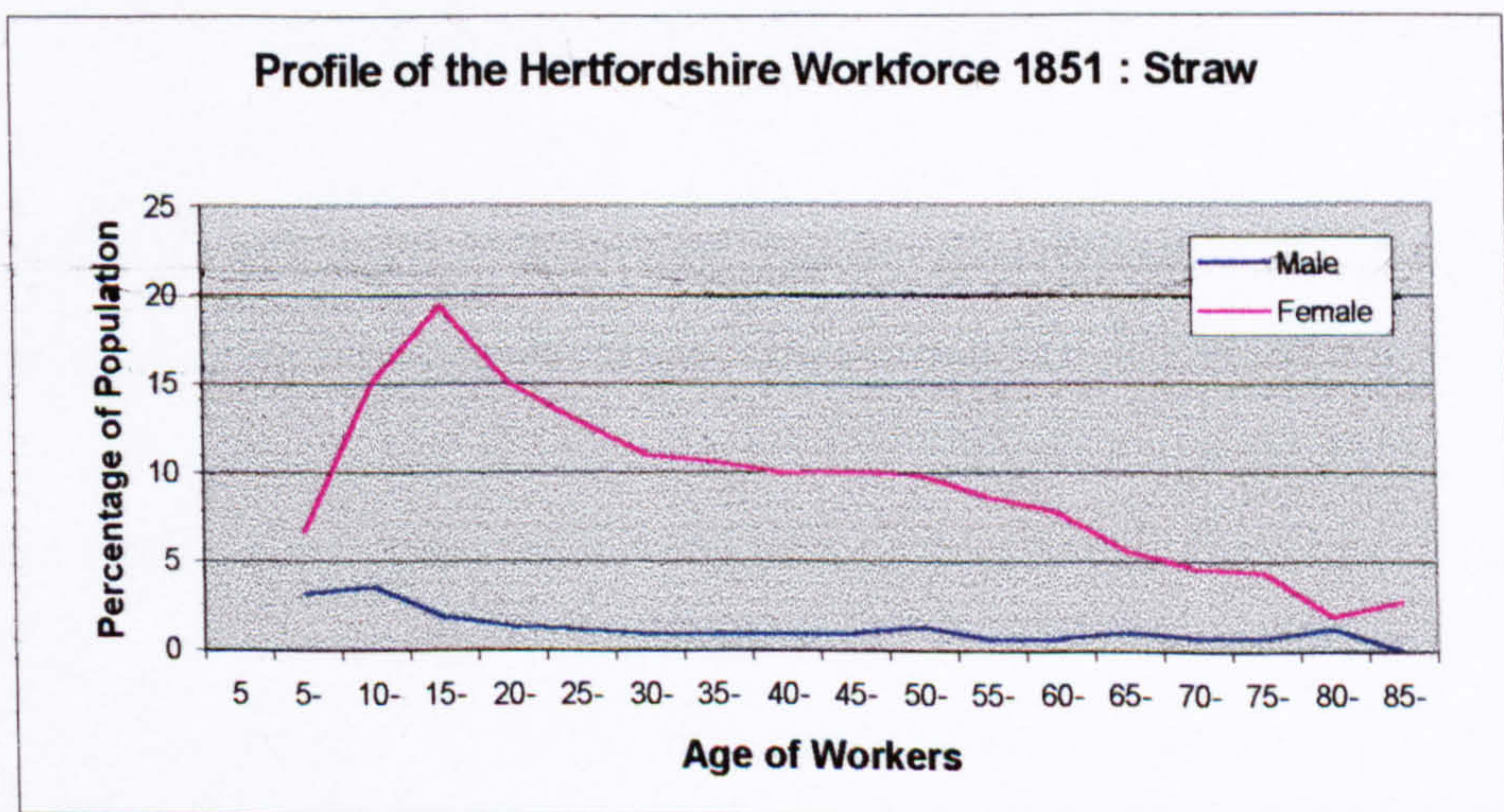


Chart 4.12

Source (Tables 4.7-4.12) PP 1852-3 Vol.LXXXV Reports 1851 Census Occupations of the People Table 7 pp 162-166

## Conclusion

In terms of power source, geographical position and labour costs Hertfordshire had distinct advantages that attracted textile manufacturers of the late eighteenth and early nineteenth centuries, although the available labour proved inadequate to support large-scale expansion of the industry. Higher than average levels of female employment throughout most of the county widened the field of recruitment, competition for female and child labour from the straw plait trade ensuring a higher ratio of male employees than the national average. Competition from the paper mills was less important and largely confined to the rag cutting and sorting at Batchworth.<sup>86</sup> There was a wide difference in overall female and juvenile employment levels between those districts with or without straw plaiting; when the straw plait trade collapsed, female employment levels in Hertfordshire dropped dramatically. There was no such abrupt fall at the demise of the silk mills, and it becomes necessary to look deeper at specific localities and sectors of the population to assess the true impact of the silk industry.

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<sup>86</sup> Batchworth Mill was acquired by Dickinson in 1818.

## CHAPTER 5.

### CASE STUDY: THE POPULATION OF THE WATFORD DISTRICTS IN THE MID-NINETEENTH CENTURY

The combined Watford and Rickmansworth parishes held important examples of both silk and paper industries from the end of the eighteenth century, and although this cannot be a fully comprehensive study, a detailed survey of the 1851 Watford Enumeration Districts will serve to illustrate and highlight the population sectors from which industrial workers were drawn. Clarkson has stressed the importance of social structure in influencing the geographical distribution of rural industry<sup>1</sup> and it was equally important here to the establishment and sustained viability of industrial development in the provincial market towns of Hertfordshire. The story of Watford contains a paradox ~ in the eighteenth century it seemed to have the potential to become another Derby or Coventry, yet the mills here were the first to fail. In 1851 Watford town was on the threshold of massive growth, the Hertfordshire silk industry was profitable ~ a new mill would be built at Redbourn in 1857 ~ and the first reliable and usefully informative census provides a vantage point from which to look both forward and back in succeeding chapters.<sup>2</sup> The Watford region differed in important ways from Berkhamsted and St Albans, but how did that affect the viability of the mills and the availability of labour?

By 1851 the principal silk mills in Watford and Rickmansworth towns, owned by Thomas Rock Shute, the paper mills owned by John Dickinson at Batchworth and Croxley, and by James Smith at Watford, were all well established. Rock Shute, aged 49, described merely as 'Silk Throwster Master' is

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<sup>1</sup> Clarkson, *Proto-Industrialization : The First Phase of Industrialization*.p.22

<sup>2</sup> In addition, there are a number of existing regional economic and social studies, utilising the 1851 Census, from which to draw comparisons, such as the two volumes of *Population, economy and family structure in Hertfordshire in 1851*, (Goose) and Anderson, *Family Structure in Nineteenth Century Lancashire*.

prosperous enough to keep a lady's maid, a housemaid, and a cook.<sup>3</sup> his near neighbour, James Smith of Hamper Mill, lists himself as 'Paper Manufacturer', with his son Joseph as 'Assistant Paper Manufacturer' but is also prosperous enough to list two servants, which in the absence of his wife, may be fewer than the complete household tally.<sup>4</sup> John Dickinson of Abbots Langley, however, possessing mills both within and outside the Watford districts, could describe himself as 'Paper Manufacturer employing 928 People', and his wife, Anna, is described as 'Magistrate and Land Proprietors' Wife', emphasising his importance in the community. His prosperity is underlined by the presence of seven indoor servants, including a butler, footman, and cook-housekeeper, plus two outdoor menservants, the coachman and groom.<sup>5</sup>

The 1851 Watford Enumeration Districts encompassed much of south west Hertfordshire: the parishes and hamlets of Aldenham, Bushey, Watford, Oxhey, Cashio, Leavesden, Sarratt, Rickmansworth, Mill End, Batchworth, Chorley Wood, Croxley, Abbots Langley and West Hyde. They varied widely both in acreage and in size of population, six hamlets or villages boasting more than 1000 inhabitants, while of the remaining eight, West Hyde counted less than half that number. Table 5.2 provides a comparison of population distribution across the Watford districts. Raising the division point to 2000 inhabitants shows the areas of highest population, although not necessarily of greatest density, occurring not only in the rapidly urbanising districts of Watford and Bushey but also in more rural Abbots Langley. The compiler of Kelly's Directory of Hertfordshire for 1850 already refers to Bushey as 'a suburb of Watford'<sup>6</sup>

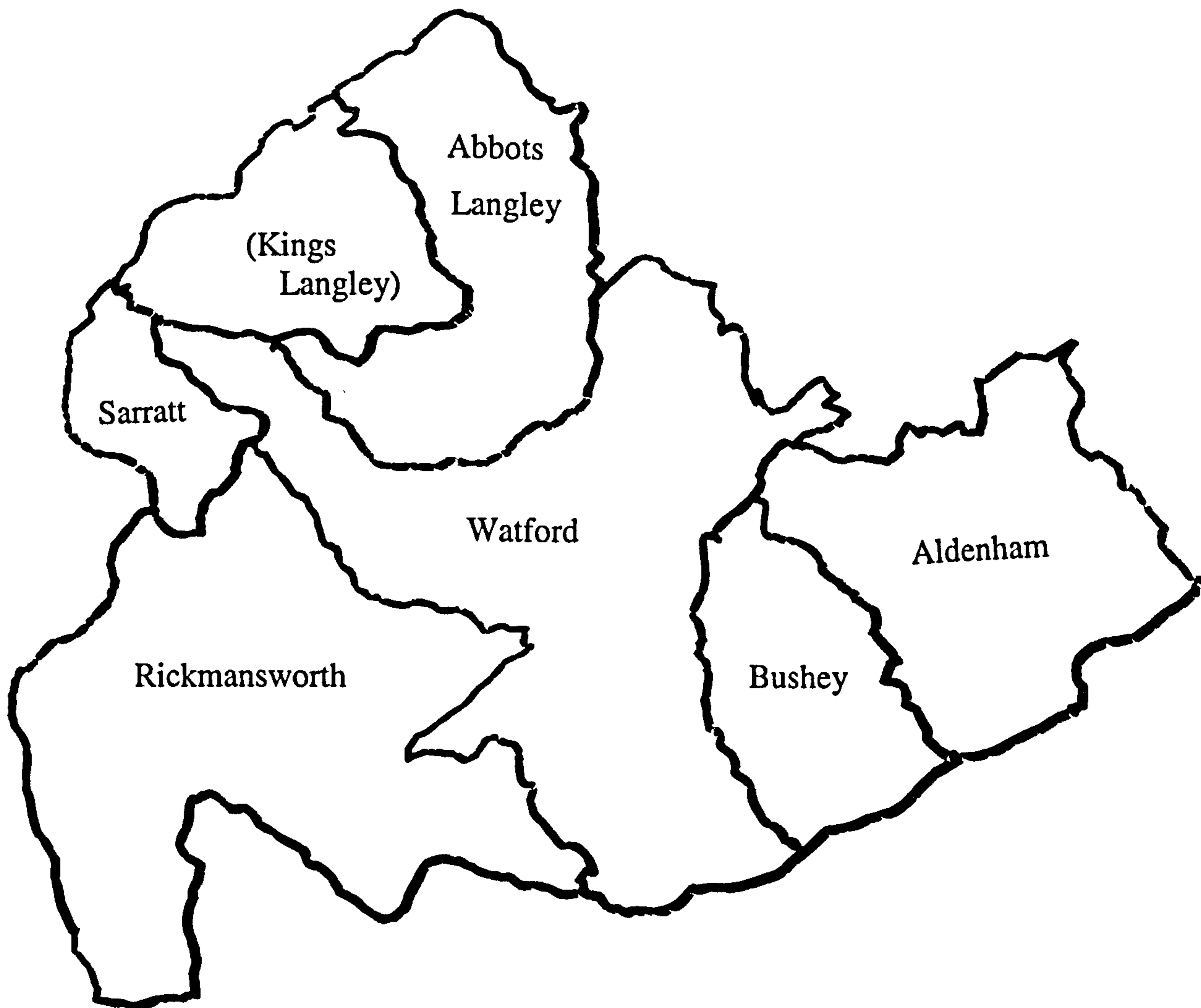
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<sup>3</sup> 1851 Census Oxhey 2b, Sched.13

<sup>4</sup> 1851 Census Oxhey 2b, Sched.157

<sup>5</sup> 1851 Census Abbots Langley 1c Sched.139

<sup>6</sup> Kelly's Hertfordshire 1850 p.231



The Watford Districts

Of the nine principal Hertfordshire towns listed in the 1851 Census Report, the Watford enumeration district contained only one ... Watford itself. Numerically it lay in sixth position in the county, behind St Albans, Hertford, Bishop Stortford, Hitchin, and Ware, but by 1871 this position had changed to third, with only St Albans and Hitchin ranked above.

**Table 5.1 Principal Towns in Hertfordshire 1851:  
Population and Housing Stock Increase 1851-1871**

	1851		1871		Increase No.		Increase %	
	Pop	Inhab. Houses	Pop	Inhab. Houses	Pop	Inhab. Houses	Pop	Inhab. Houses
Hemel H.	2727	509	5996	1278	3269	769	119.88	151.08
Gt Berkhamsted	2943	553	4083	857	1140	304	38.74	54.97
Tring	3218	610	4045	850	827	240	25.70	39.34
Watford	3800	790	7461	1475	3661	685	96.34	86.71
Ware	4882	993	4917	974	35	-19	0.72	-1.91
Hitchin	5258	982	7630	1596	2372	614	45.11	62.53
Bishop Stortford	5280	907	6250	1247	970	340	18.37	37.49
Hertford	6605	1150	6796	1257	191	107	2.89	9.30
St Albans	7000	1361	8298	1738	1298	377	18.54	27.70
<b>Total</b>	<b>41713</b>	<b>7855</b>	<b>55476</b>	<b>11272</b>	<b>13763</b>	<b>3417</b>	<b>32.99</b>	<b>43.50</b>

Source: *Census Reports 1851 & 1871*<sup>7</sup>

So meteoric a rise reflected a population increase of 96% spread over the two intervening decades, as compared with an overall collective increase across the nine towns of 33%. This latter figure disguises the extreme range between the low

<sup>7</sup> PP 1852-3 LXXXV *Census Report 1851 Summary Tables p.cciv-ccvii Table VII. 'Population and Inhabited Houses in 1851, in the Cities, Boroughs, and Principal Towns in England and Wales'. PP 1873 LXXI County of Hertford Census Report Abstract 1871 p.22 Table 9 Houses and Population of Local Board Districts, of Towns with Improvement Commissions, and of other Towns not being Boroughs.*

increase of Hertford (2.9%) and the almost insignificant rise in population of Ware (0.7) contrasted with the large increase of Hemel Hempstead (120%).

Watford Town<sup>8</sup> was definitely urban in character, and in 1849 'Watford Town Hamlet' had petitioned under the Public Health Act (11 and 12 Victoria) to establish a Local Board of Health. The urban area had already outgrown the original town hamlet, as George Thomas Clark, Superintending Inspector, recorded:

Although the petition proceeded only from the town hamlet, which forms, though by much the chief part, yet but a part of the town of Watford, I found it necessary to include the whole town in my examination.<sup>9</sup>

Reiterating the point in a later paragraph,

Watford has grown up gradually from a village into a town, and still retains its old village and manorial institutions. The parish is composed of the hamlets of Watford Town, (the hamlet petitioning,) Cashio, Oxhey, and Leavesden, the three former of

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<sup>8</sup> The figures represented in the tables or referred to in the text as Watford Town are those of the five combined 1851 Enumeration districts of Watford 1a-1e. For the purposes of the Watford Parish tables and analysis which follow, the major institution of the Union Workhouse, situated in Vicarage Road, Watford, has been omitted from all calculations unless specifically stated otherwise. Other institutions or quasi-institutions including smaller schools such as the Orphan Agricultural School at Kemprow in Aldenham, with seven pupils aged between ten and thirteen years, and lodging houses integral to the districts have not. While such an omission necessarily creates its own distortion, the decision to remove it has been taken in consideration of the inherent bias the institution displays towards the male gender, older age groups, and the widowed state. Inclusion of the Watford Union Workhouse makes a small but significant difference in the overall figures for the district, but it is an anomaly, differing dramatically in proportional composition from any of the regional communities, (although large enough to eclipse a small hamlet such as Puttenham in the Berkhamsted region) and will be considered as an individual 'special case' sub-district. 1851 Census figures for Watford 1a-1e differ very slightly from the 'City, Borough, or Town' figures given in the *1851 Census Report (1852-3) Summary Tables of the 'Boroughs, and Principal Towns in England and Wales'* (p.ccvii) where Watford is credited with 3800 inhabitants, some 245 more than the sum of districts 1a-1e. Watford at this time was neither a Parliamentary Borough nor a Corporate Town, but was listed as a Market Town having more than 2000 inhabitants. Bushey, although numbering more than 2000 inhabitants in the district, had neither market nor recognised identity as a 'town'

<sup>9</sup> *Report to the General Board of Health, on a Preliminary Inquiry into the Sewerage, drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Town of Watford* p.3 para.3.



which enter into the composition of the town, of which, however, the first constitutes by much the chief part.<sup>10</sup>

The case may therefore appear strong for designating the whole of Watford Parish as an 'urban' district, yet if a division of rural and urban districts is to be based on the percentage of male inhabitants working in agriculture, it becomes evident that Oxhey, despite industrial influences, becomes a doubtful candidate for inclusion as an urban area. Even separation of sub-districts 2a and 2b, from that one third of Oxhey not containing silk or paper workers, does not serve to sufficiently reduce the percentage of those dependent upon agriculture for their livelihoods. If a figure of 20% employment in agriculture for males over the age of 15, (approximating the national average for those in agriculture as recorded in the 1851 census report) is taken as representing the urban-rural divide, only Watford Town (11.2%), Rickmansworth (14.4%), and Bushey (16.8%), would meet the criteria. Extension to 30% working in agriculture, would allow the inclusion of Cashio (27.0%), but Oxhey (41.67%) and Leavesden (35.6%) must remain part of the rural district. Dropping the age level to include total population reduces the agricultural domination in Oxhey to 39.7%, but this is still indicative of a highly rural area. By contrast, a study of St Albans urban parishes records 7.7% of males employed in agriculture<sup>11</sup> and in the Berkhamsted region, Great Berkhamsted returns a figure of 12.9% while Tring parish, like Cashio, an area of mixed urban and rural character, returns 26.7%.<sup>12</sup>

Expectations that Watford, Rickmansworth and Bushey would form an urban area were found to be both too narrow, excluding the outskirts of Watford town, and too wide, including predominantly rural areas of Bushey. A trial allotting districts Watford Town (1a-1e), Rickmansworth Town (a-b), parts of

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<sup>10</sup> *Report to the General Board of Health, on a Preliminary Inquiry into the Sewerage, drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Town of Watford* p.4 para.9.

<sup>11</sup> Goose, *St Albans and its Region*. p.41

<sup>12</sup> Goose, *The Berkhamsted Region*. p 30

Bushey (2a, 2d, 2e, 2f), Cashio (3b) Oxhey (2b) and Leavesden (5) yielded figures very close to those of the remaining 'rural' districts, and it was therefore necessary to tighten the constraints, confining the urban designation to those areas in which adult (15 years old and above) male agricultural involvement remained *below* 15%. The resulting urban district is comprised of Watford and Rickmansworth Towns, as above, together with parts of Bushey (2d, 2e, 2f), and Cashio (3b).

These figures combined with those in the occupational tables<sup>13</sup> show that in 1851 the growth of Watford, and the presence of manufacturing enterprises in this region, had not yet eclipsed traditional employment on the land. Manufacturing was carried on in a semi-rural setting where industrial development and agricultural production drew labour from a common source.

### **The Labour Pool**

The Watford districts represented in Table 5.2 exhibit a general bias towards females. A sex ratio calculated upon the number of males per 100 females gives figures ranging between 88 for Mill End and 114 in West Hyde. While both of these hamlets are small, West Hyde being the smallest of this Watford sample where the ratio differential accounts for an excess of just 31 males, Batchworth, the next smallest district registers a sex ratio of 97, and a percentage variance of less than two points. This does not however match the overall balance for Hertfordshire as a whole, which has a differential of just 0.6 of a percentage point, and a sex ratio of 99. Proportional figures of 50.9% for the female population of the entire Watford enumeration district correlate closely to those of 51.1% recorded for the male population of Mills rural norm. Figures already calculated for the Berkhamsted region of Hertfordshire<sup>14</sup> also give a higher ratio of females, particularly noticeable in the urban districts of Tring and Great Berkhamsted,

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<sup>13</sup> See Table 5.10

<sup>14</sup> Goose, *The Berkhamsted Region*.p.27

where the former returns a sex ratio of 90. In Watford this is not always so. Mill End was by no means an urban area, and far from offering the opportunities of employment suggested by a market town or urban environment. Indeed, analysis reveals that little more than one third of the entire population (34.7%) claimed any employment, that figure encompassing 15% of the total female population, the lowest percentage of female employment in the entire Watford district.<sup>15</sup>

**Table 5.2 Total Population and Sex Ratio (Males per 100 Females)**

	Male		Female		Total No.	Sex Ratio
	No.	%	No.	%		
Abbots Langley	1177	49.5	1199	50.5	2376	98
Aldenham	821	49.7	832	50.3	1653	99
Batchworth	291	49.2	300	50.8	591	97
Bushey	1319	48.0	1431	52.0	2750	92
Cashio	424	52.2	389	47.9	813	109
Chorley Wood	479	51.1	459	48.9	938	104
Croxley	311	48.2	334	51.8	645	93
Leavesden	581	48.5	617	51.5	1198	94
Mill End	296	46.7	338	53.3	634	88
Oxhey	350	50.4	344	49.6	694	102
Rickmansworth	749	49.0	780	51.0	1529	96
Sarratt	295	48.1	318	51.9	613	93
Watford	1721	48.2	1847	51.8	3568	93
West Hyde	259	53.2	228	46.8	487	114
Urban	3179	48.6	3360	51.4	6539	95
Rural	5894	49.3	6056	50.7	11950	97
<b>TOTAL (1)</b>	<b>9073</b>	<b>49.1</b>	<b>9416</b>	<b>50.9</b>	<b>18489</b>	<b>96</b>
<b>Mills Rural Norm</b>		<b>51.1</b>		<b>48.9</b>	<b>18490</b>	<b>104</b>
Watford WH	156	60.9	100	39.1	256	156
<b>TOTAL (2)</b>	<b>9228</b>	<b>49.2</b>	<b>9514</b>	<b>50.8</b>	<b>18742</b>	<b>97</b>
Berkhamsted		47.4		52.6	11574	90
St Albans		47.8		52.2	17991	92
Hertfordshire	86465	49.7	87497	50.3	173962	99

Source: CEBs 1851

<sup>15</sup> Substitution of Bushey 3a-3c, with a higher proportion of agricultural workers, instead of Bushey 3d-3f, actually gives greater differential in sex ratio (93 Urban: 98 Rural)

## The Ages of Man

The tendency for individuals to round up or down their reported ages has been remarked in surveys of all kinds.<sup>16</sup> The old and the very young may exhibit a common desire to appear older than their years, while the working man or woman may wish to shed years for 'professional' reasons.<sup>17</sup> Equally, it has been suggested that the Factory Acts influenced, even encouraged, the over-estimation of children's ages, up to the legal age of employment. 'The recording of ages is without doubt one of the most problematic features of the manuscript census returns.'<sup>18</sup> So writes Higgs, recording that, in his own study of Llangefni in Anglesey, between 1851 and 1881:

Of the 39 observations of the ages of men between two censuses, 10 per cent were discrepant by more than two years. In the case of women, out of 44 observations, only 55 per cent showed a gap of exactly ten years, and 12 per cent showed discrepancies of more than two years.<sup>19</sup>

Changing dates of successive census nights can account for small apparent inaccuracies in age reporting, but by no means any substantial number. The 1841 Census was taken in June, but all others fell between the 30<sup>th</sup> March and the 7<sup>th</sup> April. Most studies of age reporting accept a discrepancy of up to two years as a common, but essentially negligible hazard, Anderson finding that although only 53% of Preston inhabitants reported their ages consistently between 1851 and 1861, only 4% were adrift by more than two years.<sup>20</sup>

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<sup>16</sup> The Births Marriages and Deaths Registration Act of 1836 probably had little effect regarding the accuracy of age reporting.

<sup>17</sup> Cases are cited of 'skilled workmen, clerks and shop assistants dying their hair black so as to look younger and brisker than they actually felt.' Best, *Mid-Victorian Britain 1851-75*. p.96

<sup>18</sup> Higgs, *A Clearer Sense of the Census*. p.78

<sup>19</sup> Higgs, *A Clearer Sense of the Census*. p.80

<sup>20</sup> Anderson, 'The Study of Family Structure' p.75 See also Mills and Schurer, Eds. *Local Communities in the Victorian Census Enumerators' Books* pp.74-77 on the accuracy of age reporting.

Since the most common form of age inaccuracy is to approximate the actual age to the nearest round figure, ie at age 43 a labourer may give his age as 40, or an aged grandmother claim to be 'about 75', over representation of these figures might indicate the degree of inaccuracy to which age reporting is subject. Higgs remarks the greater tendency to round ages down than up, and a suspiciously strong correlation between the ages of husband and wife, suggesting a mutual choice of, or guess at, age.<sup>21</sup> The use of consecutive census entries checks the consistency of age reporting over time, rather than the accuracy, while more detailed checking using consecutive decennial census records and Parish Registers is time-consuming, and may still be problematical. Comparatively few individuals may be traceable from birth to census entry. Using census records between and including 1851-1881 over six Kent parishes, Perkyns found a birth date for an average of only 1.4% of the checkable population.<sup>22</sup> A very much quicker test devised to monitor the accuracy of the ages recorded in survey documents is the 'Whipple Index', which demonstrates a preference above or below the norm, for the ages ending in '0' or '5' in any given sample. The index offers particular advantages as a demographic tool since it is sufficiently flexible to permit selection of age range, and requires only one set of census data. While the Whipple Index can do no more than indicate the degree of accuracy of age reporting in a district, it nevertheless provides a useful guide as to the necessity of further age checking by more specific methods.<sup>23</sup>

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<sup>21</sup> Higgs, *A Clearer Sense of the Census*.p.80

<sup>22</sup> Numbering 14,352 individuals, equalling 74.2% of the total population. The strongest link, at 50% of the checkable population for 1861 (3231 individuals), was found between entries in the 1861 census and at least one other census, plus a baptismal date. Perkyns, 'Age checkability and accuracy in the censuses of six Kentish parishes, 1851-1881' p.117

<sup>23</sup> Schurer and Mills provide a simple guide to calculation of the Index:

- 1 Count the number of individuals with ages recorded as either 25, 30, 35, 40, 45, 50, 55, or 60;
2. multiply this total by five;
3. count the number of individuals (inclusive) aged 23 to 62;
4. divide the first total by the second and multiply the answer by 100.

Schurer and Mills . 'Population and Demography' p.76

Used to calculate an index number for all males and females aged 13-62 in each of the Watford hamlets, the Whipple calculation indicates that only Mill End records a figure consistent over both sexes in which ages ending in 0 or 5 were less prominent than in-between ages. Where 100 is the base line, Mill End returns the low figure of 88, and West Hyde the closest at 101.5, Croxley returning the highest figure at 150, suggesting a high degree of inaccuracy, or at least, age approximation. The 1851 Census Report did itself acknowledge a degree of inaccuracy, most particularly among women. If the Whipple Index really indicates the extent of age approximation, then it is more pronounced in females in the districts of Aldenham, Bushey, Cashio, Chorley Wood and West Hyde, to a lesser degree in Watford, and marginally so in Oxhey. Male figures indicate high levels in Abbots Langley, Batchworth, Croxley, Leavesden, and Rickmansworth.<sup>24</sup> Despite suggestions that age reporting inaccuracy tends to greater prevalence in rural districts, these results offer no evidence of rural or urban bias. If ignorance is part of the explanation here, it can have little to do with the straw plait industry, so often blamed for low levels of literacy in Hertfordshire, since no Watford districts have strong ties to the trade.

Certainly any inaccuracies in age reporting appear to have minimal effect upon the profile of this area as a whole. In an age specific breakdown of the population, it becomes apparent that the correlation of the collective Watford parishes and Mills rural norm remains very close, the greatest deviation being of 0.9% across the 30-44 age group.(Table 5.3.)

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<sup>24</sup> Whipple Index Tables: Appendix V. Table A.8

**Table 5.3 Age Structure : Watford Parishes 1851**

Parishes	Age Groups												T Pop
	0-14		15-29		30-44		45-59		60-74		75+		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Abbots Langley	899	37.8	613	25.8	418	17.6	280	11.8	139	5.9	27	1.1	2376
Aldenham	582	35.2	419	25.3	313	18.9	195	11.8	116	7.0	28	1.7	1653
Batchworth	213	36.0	151	25.5	114	19.3	59	10.0	48	8.1	6	1.0	591
Bushey	1014	36.9	684	24.9	486	17.7	308	11.2	209	7.6	49	1.8	2750
Cashio	318	39.1	202	24.8	149	18.3	92	11.3	42	5.2	10	1.2	813
Chorley Wood	353	37.6	228	24.3	157	16.7	127	13.5	62	6.6	11	1.2	938
Croxley	236	36.6	169	26.2	127	19.7	72	11.2	33	5.1	7	1.1	644
Leavesden	473	39.5	291	24.3	253	21.1	118	9.8	51	4.3	12	1.0	1198
Mill End	255	40.2	139	21.9	105	16.6	82	12.9	44	6.9	9	1.4	634
Oxhey	161	23.2	174	25.1	124	17.9	94	13.6	33	4.8	8	1.2	693
Rickmansworth	554	36.3	364	23.8	304	19.9	169	11.1	108	7.1	29	1.9	1528
Sarratt	240	39.2	144	23.5	104	17.0	70	11.4	48	7.8	7	1.1	613
Watford	1194	33.5	972	27.2	654	18.3	452	12.7	236	6.6	60	1.7	3568
West Hyde	179	36.8	134	27.5	74	15.2	65	13.3	27	5.5	8	1.6	487
<b>TOTAL</b>	6671	36.1	4684	25.3	3382	18.3	2183	11.8	1196	6.5	271	1.5	18486
Mills		36.6		25.4		17.2		11.8		6.9		1.7	18490
Rural Norm													
Berkhamsted <sup>25</sup>		36.8		27.1		17.9		11.2		5.8		1.2	11578
St Albans		36.0		26.2		18.4		11.5		6.5		1.4	17991
Hertfordshire		37.2		25.9		17.8		11.4		6.2		1.5	173962

Source: CEBS 1851

Since the majority of the parishes are highly rural in character, the correlation is not surprising, although the extreme deviation of Oxhey, where only 23% of the population is under the age of 14, is worthy of comment. Oxhey was a small community where small numbers can heavily influence proportional outcomes, but in addition, this enumeration district had a comparatively high ratio of industrial employment, with two working mills, one paper and one silk, situated within its boundaries. Only Watford Town and Sarratt recorded a higher percentage of working women over the age of 15.<sup>26</sup> Watford Town, as expected, returns a figure slightly lower than that of a 'rural' norm for the lowest age group, but Sarratt

<sup>25</sup> Figures for Berkhamsted and St Albans refer to the Superintendent Registrars Districts.

<sup>26</sup> See Table 5.13 p.170 below.

despite higher female employment figures returns a calculation significantly higher than Mills'. The explanation may well lie in the form of occupation. Hand loom weaving was still most usually carried out in the home rather than in a factory or loom shop, where children became involved in minor tasks at a very young age. In this situation not only was it possible to marry work and childcare, but children quickly became a positive financial asset, whether or not officially recorded as working.

Mill End, Sarratt, Cashio and Leavesden offer the highest proportion of young children, the first two being of similar overall population size at around 600 individuals, and similarly rural. These two hamlets also have low sex ratios in this youngest age group, at 83 males per 100 females as shown in Table 5.4. Mill End was associated with the larger market town of Rickmansworth, on which it depended for most goods and services, and this may be reflected in the extremely low proportion of males through the years of middle and old age. Sarratt was comparatively isolated in the midst of pasture land, and the agricultural emphasis may go some way to explain the highest individual sex ratio of any district, (other than the Workhouse) which here occurs over the years of middle age. Cashio and Leavesden were far more closely associated with the main town of Watford, in which parish they belonged, and were consequently of a mixed urban and rural character. Cashio, with more obviously urban sectors, like Watford, has higher proportions of women in all but the youngest age groups, while Leavesden records more women during all but the years of old age.



**Table 5.4 Sex Ratio by Age Groups: Males per 100 Females  
Watford Districts 1851**

	AgeGroups						Total
	0-14	15-29	30-44	45-59	60-74	75+	
Abbots Langley	99	100	97	100	83	93	98
Aldenham	91	114	90	107	100	87	99
Batchworth	92	104	90	127	100	20	97
Bushey	91	103	96	78	79	88	92
Cashio	100	98	75	84	100	60	92
Chorley Wood	98	119	85	105	148	120	104
Croxley	100	88	84	89	120	75	93
Leavesden	90	99	99	87	104	71	94
Mill End	83	88	119	67	69	350	88
Oxhey	118	89	114	81	83	100	101
Rickmansworth	103	93	97	97	74	81	96
Sarratt	83	106	82	133	85	75	93
Watford	106	83	94	99	76	58	93
West Hyde	118	131	118	97	59	100	114
Watford WH	110	179	100	233	175	400	156
<b>Total</b>	98	98	95	95	88	93	96

Source: CEBs 1851

In support of Mills Rural Norm as a guide to the population profile of a rural district, examination across the 'working' age groups 15-59, during which period the greatest number of individuals may be expected to record employment, reveals only the central urban Watford area recording persistently higher percentages than Mills. Similar scrutiny of the Berkhamsted region offers only Great Berkhamsted, Tring parish subsuming the urban township, having a lower figure for the 45-59 group.

A concentration of persons of working age (in this case principally at the expense of the very young) argues the possibility of expanding employment opportunities and a thriving community. Among the growing hamlets are demonstrated high percentages in one, or sometimes two, of the above working age groups, but these are often accompanied by low figures for the young adult age groups, indicating possible out-migration during the most intensive working years. In Cashio the differential of 7 percentage points between males and females in the

30-44 age group indicates a greater exodus of males. This may be either because work is lacking, or opportunities and pay rather better in the urban centres: the principal forms of employment in Cashio for the male population lay in agriculture, labouring, and domestic service, so there was certainly incentive for men of enterprise to move closer to industrial or urban centres. During the middle years of the nineteenth century, migration from the countryside to the towns and cities increased dramatically.

Exclusion of the Union Workhouse renders Watford Town exactly on a par with Mills rural norm in the age group of 75 years and over. Inclusion substantially increases the percentage of elderly: the group aged 60-74 increases from 6.6% to 7.6% of the population, and those over age 74 accounting for 2.4% instead of 1.7%. The overall effect of this inclusion on the Watford enumeration district figures as a whole is slight, the greatest differentiation being 0.2% over the 60-74 age group. Table 5.5 illustrates the resultant changes. Of greater significance is the contrast in age group distribution between the workhouse and the parishes: low, but near normal percentage of the youngest age group, thereafter a comparative dearth of working age persons, culminating in extremely high percentages for the 60-74 and over 75 age groups.

Urban<sup>27</sup> and rural districts vary little over the working age groups, children accounting for proportionately less of the urban population, and the elderly rather more, than in the rural areas, despite exclusion of the workhouse. Even urban figures, particularly as regards the elderly, are close to Mills Rural Norm, perhaps reflecting the 'village' origins and orientation that Clark still detected in 1849.

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<sup>27</sup> Bushey 2d-2f, Cashio 3b, Rickmansworth Town and Watford Town

**Table 5.5 Age Structure : Watford Parishes 1851  
Divisional Comparisons<sup>28</sup>**

Age Groups	0-14		15-29		30-44		45-59		60-74		75+		All Pop
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Area Total (1)	6671	36.1	4684	25.3	3382	18.3	2183	11.8	1196	6.5	271	1.5	18486
Area Total (2)	6753	36.0	4723	25.2	3412	18.2	2203	11.8	1251	6.7	301	1.6	18742
Mills Rural		36.6		25.4		17.2		11.8		6.9		1.7	18490
Norm Herts. Average		37.2		25.9		17.8		11.4		6.2		1.5	
Urban Districts	2270	35	1719	26.3	1196	18.3	792	12.1	453	6.9	112	1.7	6542
Rural Districts	4401	37	2967	25.0	2184	18.4	1392	11.8	743	6.3	159	1.3	11846
Watford	1194	33.5	972	27.2	654	18.3	452	12.7	236	6.6	60	1.7	3568
Workhouse	82	32.0	39	15.2	30	11.7	20	7.8	55	21.5	30	11.7	256
Watford+WH	1276	33.4	1011	26.4	684	17.9	472	12.3	291	7.6	90	2.4	3824

Source: CEBs 1851

### Growing old

The poverty cycle noted by Rowntree during his later surveys of York in 1899, and his subsequent emphasis on the changing incidence of poverty at different stages in working class life,<sup>29</sup> is echoed by Horrell and Humphries in their study of the male breadwinner family, in which they chart the highs and lows of the family economy. The concept of the 'male breadwinner family' appears to arise in rural communities from the lack of employment opportunities available for women and children, rather than from any ideological opposition to female or child labour. The cycle of alternating poverty and prosperity of the rural worker, whether labourer or artisan, tended therefore to follow the pattern of good times before marriage, and perhaps even better ones in the period during which both husband and wife may be working. The birth of children drains resources until the latter are old enough to work and contribute to household expenses, at which time prosperity returns. Horrell and Humphries noted in particular that :

Income rose and fell in line with family demands on it, but not because the man's earnings rose with age and experience.

<sup>28</sup> The Workhouse has also been omitted from the Urban/Rural District figures in this Table.

<sup>29</sup> Hunt, *British Labour History 1815 - 1914*. p.118

Earnings increased initially with the husband's/father's age but soon plateaued out and fell from about age 45.<sup>30</sup>

The earnings of women and children therefore augmented the family income during the middle stages of life, older siblings contributing to the support of younger brothers and sisters. Once the children leave home there may be a short period of continued prosperity until the parents age and work becomes more difficult. Few workers could afford insurance policies to provide either for families in the event of the death of the breadwinner, or for financial independence in old age. Without state pensions the elderly were reliant upon the generosity of former employers, or upon their own scant savings, and the final refuge for many was the workhouse.

David Thomson argues that even during the mid-nineteenth century, a high proportion of the elderly were in receipt of pensions,<sup>31</sup> directly opposing the more conventional assertions of Hunt that 'ageing was accompanied not by retirement and a pension, but by increased sickness and falling earnings.'<sup>32</sup> Hunt continues his analysis, distinguishing clearly between a true retirement pension, and charity or poor law payments:

... most of those that survived suffered a gradual withdrawal from the labour market as sickness and senility gained the upper hand. Instead of a pension the more fortunate of them received sick benefits from a friendly society or trade union. The less fortunate relied upon their children, charity, and the poor rates. A time might come when extended benefits from one of these sources amounted to much the same thing as a retirement pension, *but this was only achieved when the recipient was consistently too weak to work.*<sup>33</sup>

Such pensions as did exist were generally occupational pensions and often the reward of government service. Army and Naval personnel received pensions

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<sup>30</sup> Horrell and Humphries, 'The Origins and Expansion of the Male Breadwinner Family: The Case of Nineteenth-Century Britain.' p.38

<sup>31</sup> Thomson, 'The Welfare of the Elderly in the Past' p.202-203

<sup>32</sup> Hunt, *British Labour History 1815 - 1914*. p.8

for past services and permanent injuries sustained, and at this period it is likely that a high proportion of males over the age of sixty would have seen military service. Forty years previously, in 1811, the army had numbered 465,000 enlisted men, a figure which Armstrong stresses was equivalent to more than one-fifth of the entire male population of England and Wales aged 15 to 49.<sup>34</sup> Not that official pensions were sufficient to guarantee independence for life. Flora Thompson, writing of the 1880's describes the fate of those such as 'the Major', growing old alone, even with the good fortune of a pension, and caring neighbours;

All went well until he became old and feeble. Even then, for some years, he struggled on alone in his little home, for he had a small pension. ....  
 ..... The day came when the doctor called in the relieving officer. The old man was seriously ill; he had no relatives. There was only one place where he could be properly looked after, and that was the workhouse infirmary.<sup>35</sup>

For the labourer, there was no occupational pension, no assured income, however small, once employment ceased. The majority of labouring men continued to work at lighter tasks for reduced wages, so long as they were able. As the century drew to a close, Charles Booth described this situation and listed a number of such employments available in the Hemel Hempstead region:

.... Aged men are retained on farms, as long as possible, on wages from a few shillings for minding sheep or trimming hedges, etc., to 14s or 15s as carters, etc. Some, unfit for other work, are employed by surveyors on roads.<sup>36</sup>

Thomson insists that 'retirement from work before the onset of actual physical decrepitude seems to have been an accepted phase of life in the nineteenth century....' conceding finally, almost with a note of incredulity, 'Yet despite the

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<sup>33</sup> Hunt, *British Labour History 1815 - 1914*. p.8 (My italics)

<sup>34</sup> Armstrong, 'Stability and Change in an English County Town' p.71

<sup>35</sup> Thompson, *Lark Rise to Candleford*. pp.88-89

<sup>36</sup> Booth, *The Aged Poor in England and Wales*. p.166

normality of retirement and a period of 'pensioned leisure' some did work on.'<sup>37</sup>

In the Watford district, work was available in the mills and watercress beds as well as the opportunities listed above, and there is little evidence of any widespread 'pensioned leisure' where 71.4% of males over the age of 65 are recorded as still working.

**Table 5.6 The Aged Worker<sup>38</sup>**

PLACE	MALES AGED 65+	MALES STILL WORKING		FEMALES AGED 65+	FEMALES STILL WORKING	
	No.	No.	%	No.	No.	%
Abbots Langley	48	39	81.3	52	8	15.4
Aldenham	49	30	61.2	43	6	14.0
Batchworth	11	9	81.8	16	3	18.8
Bushey	76	46	60.5	97	18	18.6
Cashio	19	15	78.9	20	0	0.0
Chorley Wood	31	24	77.4	17	2	11.8
Croxley	12	9	75.0	14	3	21.4
Leavesden	21	15	71.4	21	6	28.6
Mill End	18	8	44.4	19	1	5.3
Oxhey	11	10	90.9	14	3	21.4
Rickmansworth	38	27	71.1	48	9	18.8
Sarratt	20	20	100	18	5	27.8
Watford Town	75	58	77.3	113	26	23.0
West Hyde	11	4	36.4	17	1	5.9
Total	440	314	71.4	509	91	17.9

Source CEBs 1851

Area by area, it is obvious that there is a wide variation in the percentage of those working, but the lowest figure, representing West Hyde, reflects not only a very small number of elderly men, but that a high proportion of these (six) were paupers. Mill End, too, counted a high proportion of paupers (seven) among the elderly, because the total number was so small. In sum, it is found that in this

<sup>37</sup> Thomson, 'The Welfare of the Elderly in the Past' p.206

<sup>38</sup> The figures in Table 3 for those working include farmers, but exclude those calling themselves 'landowner', 'proprietor of land and houses', 'independent' or 'gentleman'. Also excluded are annuitants, pensioners, half-pay military and naval officers, paupers, or those describing themselves, for example, as 'agricultural labourer and pauper'. While there is no certainty that all those recorded as working actually did so, the high number of elderly that claimed to be working or are recorded as doing so, indicate an expectancy that in this region at least, the aged population would work as long as health and vigour remained.

region, the majority, almost three-quarters of the elderly male population, continued to work after the age of 65. In some districts, Oxhey, Sarratt, Batchworth and Cashio, the proportion was even higher. Logic therefore suggests that even allowing for a certain economy of qualifying terms such as 'occasional' or 'lately', a large proportion of the elderly population worked, and did so of necessity. This cannot be considered an isolated and abnormal sample, since a comparison with the St Albans Districts reflects a similarly high rate of employment among the male elderly, where the overall average stands at 78%. Outside the confines of the Cathedral city, in Sandridge, Harpenden, Redbourn, Wheathampstead, and Sleaf and Tyttenhanger, it ranges between 82% and 99%.<sup>39</sup>

Elderly women were less likely to continue formal paid employment, although the same problems of assessment apply to the study of elderly women, as to that of younger working women. The probability that a large proportion of female labour, undertaken by women of all ages, was either recorded inaccurately, or left unrecorded, cannot be disregarded. The Watford districts consistently show a lower figure for elderly working women than those of St Albans. The former shows a peak of 28.6% in Leavesden, an area with comparatively few elderly inhabitants, and an overall average of 17.9%, while the latter reaches a peak of 61.8% in Harpenden, where two-thirds are occupied with the straw plait, and an average of 34.6%. It is perhaps surprising to find so high a continued involvement in the straw plait trade, since rheumatism, arthritis, and other problems connected to the joints must have been an occupational hazard for the plaiter, as for the hand-loom weaver or knitter.

In Watford districts where the trade was of lesser importance, only 1% of elderly women continued straw plaiting, but 8% continued to be employed in domestic service. Very few indeed continued to work either in the paper or silk mills, where machinery undoubtedly demanded quicker reactions, sustained concentration, and possibly greater stamina from workers.

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<sup>39</sup> *Census: Hertfordshire 1851*

## Who Cared?

Charles Booth's comments regarding Thrift Agencies and Insurance illustrate clearly the differences in attitudes and financial status while earning, which governed the individual's ability to provide for old age. In the Hertford Union, he asserts that Thrift Agencies and insurance schemes contributed to an infinitesimal extent. Insurance for old age, in the form of deferred annuities, was not used by members of the Benefit Society, and Booth noted too that an attempt to introduce it into a country parish had failed. He concluded that it was too costly for any but young men. By contrast, he recorded that in the more urban Union of St Albans:

A considerable number of working-men starting with nothing, have by thrift saved enough for old age. A more considerable number have saved sufficient to live in decent comfort if a little help were forthcoming (e.g. 5s a week). Sound Friendly Societies not started long enough to benefit those over 65.<sup>40</sup>

The need for insurance and benefit provision was certainly recognised by mid-century. Feargus O'Connor of the Chartist Land Company planned in 1847 'the establishment of an Insurance Company, for our own members only, and a Sick and Benefit club, to be confined to the members of each estate.'<sup>41</sup>

David Thomson goes on to dispute the conventional reading of the Elizabethan Poor Law, which he asserts was 'designed to formalize a system of public responsibility for the needy' rather than, as generally interpreted, to place the onus of care upon the family and the individual.<sup>42</sup> This new interpretation lies at the heart of his claim regarding the early prevalence of state-funded, or at least, local authority-funded pensions for the elderly.

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<sup>40</sup> Booth, *The Aged Poor in England and Wales*. p.16

<sup>41</sup> *Northern Star* 27 Feb. 1847 p.1ii.



..... the Poor Law Act of 1601 was interpreted by the English courts as giving the impoverished parent no claim to assistance by a child, but a right to assistance from the collectivity instead.<sup>43</sup>

This does raise the question as to whether Poor Law assistance can strictly be classed as a 'pension' in the modern sense, since it was a discretionary benefit, dependent upon the prevailing attitude of local poor-law guardians, whether or not age was considered synonymous with infirmity in the eyes of the guardians, subject both to review and withdrawal, and could be given either partially, or wholly, in kind.

Accounts and minute books of the Poor Law Guardians record allowances stopped or discontinued, the refusal to pay relief to the improvident able-bodied, or defray the expenses of a second bastard child.<sup>44</sup> Thomson acknowledges these 'significant spatial and temporal variations' apparent in the poor law records, and that public relief in old age was generally more extensive in rural areas and small towns than in large urban places.<sup>45</sup> Noting that out-payments varied from an average of 2s 6d or 3s a week, to as much as 4s 6d a week, Thomson equates this to '70 to 90 per cent of the spending power of the average adult of 'the working class', that is, of the poorer three-quarters of the population.'<sup>46</sup> This opinion is not shared by Lees, who suggests that Thomson makes his assertion using 'a misleading standard based on agricultural wages in Bedfordshire, Norfolk and

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<sup>42</sup> Thomson 'The Welfare of the Elderly in the Past' p.197

<sup>43</sup> Thomson 'The Welfare of the Elderly in the Past' p.198

<sup>44</sup>The Tring Guardians took a severe line with those perceived as having shirked their responsibilities:

'It was represented to the Meeting that Edward Munday had repeatedly deserted his Wife and family and left them chargeable to the Parish and that he is otherwise a drunken and disorderly fellow. Ordered that immediate proceedings be taken to punish him with the utmost severity.

Ordered that Catherine Bligh's Allowance be reduced to one Shilling Per Week.

Also Hannah Beckett's do.

Also Ann Woolhead's do'

Tring Parish *Guardians Minute Book* : 9 Sept 1831 HRO D/P 111 18/1

<sup>45</sup> Thomson. 'The Welfare of the Elderly in the Past' p.203

<sup>46</sup> Thomson. 'The Welfare of the Elderly in the Past' p.204

Suffolk.’<sup>47</sup> The point is made that agricultural labourers in southern and eastern counties could not have supported themselves on the amounts Thomson calculates as a weekly wage, and certainly the wage of a casual labourer in the Watford district averaged at 12s for a six-day week, as recorded in the Surveyor’s account book of 1853-64.<sup>48</sup> Agricultural wages in Hertfordshire, as noted in Chapter 3, were among the highest in the southern counties at approximately 9s a week. Nevertheless, pension or out-relief, even 4s 6d does not equate to 70% of the spending power of a working man, unless calculated on the basis of occasional and very sporadic labour.

It is further admitted that if assistance was claimed from the Poor Law authorities, then legal action could be taken to enforce children to give aid to destitute parents. Certainly that was the case. In September of 1834, the Tring Vestry passed the resolution:

That legal means be taken to compel John Smith to support his Father and Mother and that in the mean time the Treasurer advance 4/- Per Week for their maintenance.<sup>49</sup>

That legal action was seldom taken, or that there was failure to order more than token support payments, does not necessarily prove that ‘it was ‘unenglish’ behaviour to expect children to support parents’.<sup>50</sup> Since Thomson does not reveal the financial circumstances of these unfilial offspring, it is not known to what degree they were in any position to support destitute parents. Commenting on the responsibilities of kin during the eighteenth and nineteenth centuries, Richard Wall quotes an extract from the Fulham Board of Guardians Members’ diary for 1905-1906, which lists the liability of persons for maintenance of relatives. Following

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<sup>47</sup> Lees, *The Solidarities of Strangers: The English Poor Laws and the People, 1700-1948*, p.188

<sup>48</sup> Watford Local Board of Health Surveyors Account Book 1853-1864: Entry for Oct 1854. Manuscript, no pagination WCL.

<sup>49</sup> Tring Parish *Guardians Minute Book* : Monday 1 September 1834 (No pagination.)

<sup>50</sup> Thomson, ‘The Welfare of the Elderly in the Past’ p.199 Upon this point Thane is dismissive: ‘Thomson’s argument is supported mainly by limited research into Poor Law practice in the rural south of England in the mid-nineteenth century, generalised to a wider history of the Poor Law.’ Thane, *Old Age in English History* p.142

the duties of husband to wife, parents to children, grandparents to children, and step-parents to children, is stated the following:

7. Legitimate children (sons, whether married or single, and daughters, if unmarried) are bound to maintain their parents when unable to work through sickness or other cause. N.B. \_\_\_ it is only relatives of sufficient ability who are liable, and proof of ability is required by justices before an order can be made.<sup>51</sup>

Thus the Guardians acknowledged that the will to support aged parents was not always accompanied by the ability to do so.<sup>52</sup> When financially able, children (and grandchildren) do appear to have taken the first responsibility for elderly parents. The records of a Watford charity administered by Mr Bell from 1772, gave details of the ten poor persons, to each of whom was given 20s, and records the state of 'Anne Pearce, Widow, aged 90, chiefly supported by the Labour of her Daughter and Granddaughter.'<sup>53</sup> Purely financial help was perhaps less common than housing and mutual aid within the family; in 1851 Preston, Anderson found that 32% of people aged 65 or over were living with their married or widowed children, and an additional 36% with unmarried offspring.<sup>54</sup>

Despite Booth's suggestion in 1894 that the action of the Watford Guardians had influenced children, relatives, and friends to help the aged 'more probably than formerly' it is likely that the desire to help ageing relatives had changed little. Those receiving relief were still most frequently to be found living with children or relatives. While there is a strong indication that poor law guardians were willing to compel the support of aged parents, it is also probable that Booth's comment regarding the St Albans Union had a timeless validity extending through all the

<sup>51</sup> Wall, 'The Responsibilities of Kin'. p.60

<sup>52</sup> Lees, examining cases of the rural Atcham Union, cites the case of an elderly woman, too infirm to work, living with a son and his family: 'After the son's death, her daughter-in-law continued to provide housing but not clothing or food. Because the woman's other sons each had eight children, guardians realized the futility of pursuing them for their mother's support. In this case, they offered an allowance of 1s 6d per week.' Lees, *The Solidarities of Strangers: The English Poor Laws and the People, 1700-1948*. p.209

<sup>53</sup> Distribution of £10 to the poor. HRO D/P117 25/15

<sup>54</sup> Anderson, *Family Structure in Nineteenth Century Lancashire*.p.139

Unions, highlighting the difficulty of assessing the balance between familial and 'community' support.

Children, etc. contribute more than is supposed\_\_ but amount will be concealed as long as Guardians help destitute only.<sup>55</sup>

A comparison of the number of cases brought before the magistrates involving the maintenance of children by parents or grandparents, against those concerning the maintenance of parents by children, and the severity with which they were dealt, is also open to question. The fact that approximately one-third of the population was under fifteen years of age, and less than one-tenth over the age of sixty, implies, on a purely numerical basis of probability, the likelihood of more abandoned children than abandoned parents.

Those individuals that could afford to do so, did take it upon themselves to provide for themselves in old age. In July of 1850, Mr Joseph Abbee, tenant farmer of Kings Farm in Chorley Wood, entered into an agreement with Daniel Putnam to give up the land and farm on receipt of an annuity of £26 1s 6d p.a., plus continued residence at Kings Farm House. In the event of Joseph's death, the sum of £13 0s 9d was to be paid annually to his wife Sarah.<sup>56</sup> Daniel Putnam was to commence weekly payments of 10s each Monday, or, in respect of Sarah, of 5s, on December 23<sup>rd</sup>. It would appear that Putnam had made a sound investment, since no Joseph Abbee is listed in the 1851 Census, taken the following March, although a Sarah Abbee, widow, aged 76, is listed as resident in Chorley Wood with her 38 year old unmarried son, James Abbee, an agricultural labourer.<sup>57</sup>

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<sup>55</sup> Booth, *The Aged Poor in England and Wales*. p.167 Pat Thane comments that sums granted to the elderly by parishes in west Kent, that were 'rarely adequate for subsistence and may have been supplements to support known to be provided by relatives' could also be recouped after the death of the recipient. In law the parish could claim the estate of the deceased, or, as in the case cited, the son of the deceased repaid all expenses incurred by the parish for his father. Thane, *Old Age in English History* p.140

<sup>56</sup> HRO D/Elt B137

<sup>57</sup> *1851 Census* : Chorley Wood 1h Sched. 61 Rec. 672 & 673

If the workhouse indeed played only a minor role in caring for the aged, as Thomson avers, since it was recognised that costs incurred in residential care were greatly in excess of outside relief costs, it was nevertheless a safety net for a significant minority of those incapable of self-help.<sup>58</sup> By far the majority of Watford workhouse inmates were former Agricultural labourers, (51% of males) plus two female agricultural labourers, joined by smaller numbers of retired domestic servants of both sexes, former workers in the paper, silk and straw industries, and erstwhile craftsmen or small tradesmen. This pattern was reflected in the workhouse at St Albans, where 66% of male inmates were listed as agricultural labourers, and at Hatfield where 48.3% were so designated.<sup>59</sup> In both these Union Houses, the proportion of males to females is much closer than at Watford, with sex ratios of 135 and 125 respectively. At Watford, men outnumbered women by almost two to one, giving a sex ratio of 156, and it is noticeable that the age profile for males and females follow differing paths. A higher proportion of women in the 30-44 age group, in which are counted the married, widowed, and sometimes unmarried mothers of the child inmates, is balanced by a higher proportion of men in the oldest age group. A partial explanation for the latter disparity may lie with the additional accommodation and assistance available to poor widows. There were many more charity bequests for the relief of poor widows and women of good character than for the relief of widowers. The Bedford Almshouses were erected specifically for the use of poor widows, and later bequests from Dame Mary Morrison and Mary Newman supplemented the pensions already provided for eight almswomen. In the seventeenth century Dame Dorothy Morrison left an annuity to provide for the maintenance of 'four poor widow women successively for ever.'<sup>60</sup> Further

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<sup>58</sup> See also Goose, 'Workhouse Populations in the Mid-Nineteenth Century : The Case of Hertfordshire'. p.54 and p.57

<sup>59</sup> *Census: Returns for Hertfordshire 1851*

<sup>60</sup> *VCH Hertfordshire Vol.2 p.467* See also Mr. Bell 6 Nov 1772 [commencement date] *Details of Distribution of £10 per annum to the Poor* . HRO D/P117 25/15 and Account Books of Dame Dorothy Morrison's Almshouse Charity HRO DEX372 Q5.

almshouses erected in 1824 by Stewart Marjoribanks also housed women. The exception that proves this particular rule were the four Salter Almshouses, built in 1843 `each to be occupied by a poor man and his wife, or an unmarried poor person, male or female, of good character, and of the age of fifty years at the least, whether receiving parochial relief or not.’<sup>61</sup>

### **A state of marriage**

Turning towards the marriage patterns of this area, there are no startling revelations nor exceptionally wide deviations either from Mills Rural Norm, nor from the calculated figures for Berkhamsted and St Albans. However, the two latter districts share a common figure of 61.4% unmarried, while the Watford district shares Mills figure of 59.8% All three Hertfordshire districts return figures approximately two points lower than Mills for the percentage of married individuals.

Quoting the findings of Medick,<sup>62</sup> Clarkson reports that in the peasant household, not only did the father control the choice of his children’s marriage partners and the time of their marriage, but that this was delayed until the father died or was willing to relinquish the running of the farm. He concludes that `the mean age of first marriage was kept relatively high, and a substantial minority of people did not marry at all.’<sup>63</sup> By contrast, industrial development eroded traditional constraints on early marriage, `as they grew into adulthood, children no longer needed to delay marrying until they inherited the farm, for they could now work at least part-time in industry and earn enough money to support themselves.’<sup>64</sup> Anderson, however, found that although in industrial Lancashire ‘operatives married young’ few had savings and ‘were thus unable to buy even the

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<sup>61</sup> VCH Hertfordshire Vol. 2 p.467

<sup>62</sup> `The Structures and Function of Population development under the Proto-industrial System’ Kriedte, Medick et al, *Industrialization before Industrialization* 1981

<sup>63</sup> Clarkson, *Proto-Industrialization : The First Phase of Industrialization*. pp.39-40

<sup>64</sup> Clarkson, *Proto-Industrialization : The First Phase of Industrialization*. p.40

minimal scraps of furniture necessary for a home of their own.'<sup>65</sup> Neither scenario is supported in the Watford region, where the proportions of those never married remain consistently high until the 25-29 age group. Urban and industrial areas show marginally higher percentages of 'never-married' in the under 30 age group than rural areas, but even in Sarratt, where cottage industry conditions most resemble the proto-industrial community envisaged by Medick, the percentage unmarried at age 25-29 is 47% (50% Male, 42.9% Female) These findings find general support in a study of Sowerby and Calverley, two West Yorkshire wool towns, where Hudson and King came to the conclusion that there was no uniform relationship between nuptiality and rural industry<sup>66</sup>

Within the Watford area the more urban districts of Bushey and Watford town record a high proportion of unmarried persons of both sexes, but particularly among males. Conclusions apportioning great significance to the urban setting would however be premature, since Leavesden, where 37.8% of males were still engaged in agriculture, boasts the highest level of all for both unmarried males (63%) and females (61.9%). All findings here support the conclusions of earlier studies: that early, and teenage marriages in particular, prove the exception rather than the rule. In the whole of the Watford enumeration district only seven men and nine women were recorded as married and being under the age of twenty years. These are isolated incidents scattered through the districts, without bias towards either rural or urban setting. In the majority of districts the percentage of married persons does not reach parity with the unmarried until the 25-29 age group is reached, the highest percentage of those married, reached after the age of 30. Women do appear to marry earlier than men, as shown in the 20-24 age group figures, although divergence is not always as wide as some of the percentage and numerical figures might suggest. For example, in Batchworth there are twice as

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<sup>65</sup> Anderson, *Family Structure in Nineteenth Century Lancashire*.p.141

<sup>66</sup> Hudson and King, 'Two textile townships, c.1660-1820: a comparative demographic analysis'. p.736 They found that male marriage ages in particular, remained relatively stable throughout the long eighteenth century. p. 720

many married women aged 25-29 as there are married men, however, the percentages are 72.7% of women, and 66.7% of men. Equally, seven married females account for 33% of the 20-24 age group while six married men account for just 18.8%.<sup>67</sup>

In the first instance, the numerical disparity is largely concealed, and in the second, greatly accentuated by expression of the percentage figure. Sex ratio figures may here give a clearer indication as to the correlation or disparity between male/female age at marriage. In Oxhey, where the numerical balance of male and female is very close, and there are 83.3% of females unmarried at age 20-24, compared with 85.2% of males, the sex ratio nevertheless shows clearly that not until the age groups of 30 and above is parity achieved between the sexes. Both these figures fall over the 25-29 group, to 27.8% for unmarried females and 26.1% for unmarried males. (Table 5.9) These figures for Watford are very high when compared with those of Coventry and Preston at a similar period, both the latter heavily involved in silk manufacture and allied industries. Where in the Watford region approximately 80% of males between the ages of 20 and 24 are unmarried, only 53% of males in Coventry, and 69% in Preston are so designated.<sup>68</sup>

**Table 5.7 Percentage of males never married, by age group:**

AGES	W_URBAN	W_RURAL	ALL WATFORD*	COVENTRY	PRESTON
20-24	80.0	81.9	81.2	53	69
25-34	37.4	33.2	34.7	16	27
35-44	17.5	16.2	16.6	18	12
45-54	9.1	8.6	8.8	7	6
55+	6.9	7.4	7.2	7	4

- Watford District not including Workhouse.
- Source: CEBs Watford 1851, Tiratsoo p.97

At age 20-34 the Watford district yields a considerably higher proportion of males never married, only Coventry reaching similar levels from age 35. Tiratsoo

<sup>67</sup> Full sub-district tables Appendix V Table A.6



offers the life and career development cycle of the weaver as one explanation for the high rate of marriage: a weaver needs help, therefore marriage, and two working, two saving. Pregnancies are unwelcome, but as soon as the children are old enough to help, they become an asset.<sup>69</sup> The Watford figures indicate higher rates of males never married in urban, rather than rural areas, in direct conflict with those of Coventry and Preston. The implication is that if, in a broader interpretation, it is the industrial element which affects age at marriage, then the real deciding factor is the type of industry involved. Tiratsoo is dealing with an overwhelmingly 'home-based' industry ... weaving shops built above family accommodation, factories that employ women and children ... but in the mixed economy of the Watford district, the silk and paper mills, tanneries, and breweries, offer work outside the home. Domestic service demands a high percentage of single persons, and the range of occupations open to females offer them independence.

The Watford district as a whole counts a marginally higher proportion of widows and widowers than are evident in either Mill's study, or those carried out by Goose concerning the districts of Berkhamsted and St Albans. These Watford districts do however reflect a similar predominance of widows over widowers, in a ratio of approximately 2:1. This varies greatly from sub-district to sub-district: for example Chorley Wood records an almost equal number of widowers (22) and widows (23), while Bushey, where, as in Watford Town, the female population is more than 100 individuals in excess of the male population, counts close to three widows for every widower (52 widowers and 135 widows). Such a discrepancy may be partially accounted for by greater female longevity, and a stronger tendency for males to remarry, but it is also noticeable that as shown in Table 5.4, that for the Watford region as a whole, females outnumber males in all age groups.

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<sup>68</sup> Tiratsoo, *Coventry's Ribbon Trade in the mid-Victorian period : some social and economic responses to industrial development and decay*. p.97

<sup>69</sup> Tiratsoo, *Coventry's Ribbon Trade in the mid-Victorian period : some social and economic responses to industrial development and decay*. p.97

The workhouse proves again to be an anomaly, the percentage of unmarried females less than half that of a normal district, and the percentage of unmarried males little more. Married persons are lowest of all both numerically and by percentage, but this is to be expected given the harsh conditions of separation. Segregation of the sexes gave great additional incentive to married couples to eschew the workhouse unless in the direst need. Equally, workhouse authorities were reluctant to admit families because of the expense. In a survey of six Hertfordshire workhouses Goose notes in all only fourteen married couples with children, of which two are in Watford.<sup>70</sup> Where the highest percentage of widows and widowers in the community is found in Batchworth and Rickmansworth to be 7.1% and 7.3%, in the workhouse it reaches 21%.

The proportions of those never married at age 45-54 are a good general indication of the proportion of the population that will never marry, and for the census of 1851, Wrigley and Schofield state that proportion as 11.9%. Little changed over the next two decades, the proportions for 1861 and 1871 respectively, being 11.2% and 10.9%.<sup>71</sup> In this Watford region, the 1851 figures for the proportion never married at age 45-54 tend to be significantly lower than the national estimates recorded above. Overall figures for the district give 10.2%, rural areas returning a figure as low as 9%, and urban districts 10.3%. The contrast between the figures for men and women is most marked in urban districts, where 9.1% of men remained unmarried, compared to 11.5% of women. In the rural districts the figures are closer at 8.6% for men and 9.3% for women. This indicates a general tendency, in line with earlier demographic studies, for higher rates of single men and women, but particularly of single women, in towns and cities where employment opportunities may be more accessible.

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<sup>70</sup> Goose, 'Workhouse Populations in the Mid-Nineteenth Century : The Case of Hertfordshire'. p.6

<sup>71</sup> Wrigley and Schofield, *The Population History of England 1541-1871*. p.259

**Table 5.8 Marital Status : Watford Enumeration Districts 1851<sup>72</sup>**

	Unm M %	Unm F %	All No.	Unm %	Mar M %	Mar F %	All No.	Mar %	Wid M %	Wid F %	All No.	Wid %
Abbots Langley	60.1	58.0	1403	59.0	34.1	32.6	792	33.3	2.7	7.0	117	4.9
Aldenham	61.1	58.6	990	59.9	34.0	33.0	554	33.5	4.0	7.7	97	5.9
Batchworth	58.4	55.3	336	56.8	35.4	34.0	205	34.7	6.2	8.3	43	7.3
Bushey	62.0	59.9	1675	60.9	33.2	30.0	867	31.5	3.9	9.4	187	6.8
Cashio	62.7	58.3	493	60.6	33.7	36.5	285	35.1	2.6	4.6	29	3.6
Chorley Wood	57.4	57.1	537	57.2	35.5	36.8	339	36.1	4.6	5.0	45	4.8
Croxley	62.4	62.6	403	62.5	33.1	30.8	206	31.9	2.9	4.8	25	3.9
Leavesden	63.0	60.9	742	61.9	34.8	33.9	411	34.3	2.2	5.0	44	3.7
Mill End	59.8	59.8	379	59.8	34.5	30.8	206	32.5	3.7	7.1	35	5.5
Oxhey	62.0	59.0	420	60.5	35.1	34.9	243	35.0	2.9	6.1	31	4.5
Rickmansworth	58.6	55.6	873	57.1	34.2	33.1	514	33.6	4.7	9.5	109	7.1
Sarratt	57.6	61.3	365	59.5	34.9	29.9	198	32.3	5.1	6.9	37	6.0
Watford	62.4	59.5	2170	60.9	33.2	30.9	1141	32.0	4.2	9.5	247	6.9
West Hyde	59.5	51.7	272	55.8	36.3	38.6	182	37.4	1.5	8.3	23	4.7
Watford WH	38.5	25.0	85	33.2	14.1	12.0	34	13.3	19.2	24.0	54	21.1
<b>Total (1)</b>	<b>60.9</b>	<b>58.7</b>	<b>1105</b>	<b>59.8</b>	<b>34.0</b>	<b>32.4</b>	<b>6143</b>	<b>33.2</b>	<b>3.7</b>	<b>7.8</b>	<b>1069</b>	<b>5.8</b>
<b>Total (2) inc.</b>	<b>60.5</b>	<b>58.4</b>	<b>1114</b>	<b>59.4</b>	<b>33.7</b>	<b>32.2</b>	<b>6177</b>	<b>33.0</b>	<b>4.0</b>	<b>7.9</b>	<b>1123</b>	<b>6.0</b>
<b>WH</b>			<b>8</b>									
<b>Mills Rural</b>				<b>59.8</b>				<b>35</b>				<b>5.2</b>
<b>Norm</b>												
<b>Berkhamsted</b>				<b>61.4</b>				<b>32.9</b>				<b>5.7</b>
<b>St Albans</b>				<b>61.4</b>				<b>33.1</b>				<b>5.4</b>

Source: CEBs 1851 Hertfordshire

<sup>72</sup> In order to facilitate comparisons with Mills, these figures above include the entire population hence the large percentage figures for those never married, but comparisons between the ten Hertfordshire Districts consider only those persons twenty years old and above.

**Table 5.9 Watford 1851: Persons Never Married, by age, sex, and district.<sup>73</sup>****Never Married: Watford S.R.D. 1851**

Age	Abbots Langley			Aldenham			Batchworth			Bushey		
	M %	F %	ALL %	M %	F %	ALL %	M %	F %	ALL %	M %	F %	ALL %
15-19	100.0	98.2	99.2	100.0	96.8	98.7	100.0	100.0	100.0	99.2	99.2	99.2
20-24	83.3	67.0	74.9	86.6	82.4	84.4	81.3	66.7	75.5	77.2	69.0	73.3
25-29	38.5	43.0	40.9	43.8	36.9	40.3	33.3	27.3	29.4	44.2	40.0	42.1
30-34	24.1	19.8	21.8	21.1	28.8	25.2	5.6	28.6	17.9	29.9	24.4	27.2
35-39	14.1	7.5	11.1	19.6	12.5	16.2	6.3	6.3	6.3	23.8	19.1	21.3
40-44	4.7	11.0	8.0	32.5	15.7	23.1	5.0	4.5	4.8	16.9	20.5	18.8
45-49	11.9	6.7	9.2	15.8	14.7	15.3	0.0	0.0	0.0	8.3	7.4	7.8
50-54	12.0	10.2	11.1	10.5	13.5	12.0	0.0	0.0	0.0	6.0	15.9	11.5
55-59	12.9	12.9	12.9	16.0	4.3	10.4	12.5	28.6	20.0	10.8	7.1	8.9
60-64	7.1	2.6	4.5	4.5	3.3	3.8	0.0	7.7	3.7	2.6	19.6	11.8
65+	6.3	11.5	9.0	6.1	4.7	5.4	9.1	0.0	3.7	6.6	7.2	6.9
	40.5	35.6	38.0	42.5	35.6	39.1	33.9	29.3	31.6	40.5	36.4	38.4

	Cashio			Chorley Wood			Croxley			Leavesden		
	M %	F %	ALL %	M %	F %	ALL %	M %	F %	ALL %	M %	F %	ALL %
15-19	100.0	100.0	100.0	97.8	97.8	97.8	100.0	97.4	98.6	100	100	100
20-24	74.4	51.4	63.5	84.6	66.7	76.4	79.3	93.3	86.4	81.6	64.2	72.5
25-29	42.4	48.4	45.3	23.1	19.2	21.5	60.0	52.4	56.1	38.3	29.2	33.7
30-34	16.7	25.9	21.6	41.7	34.8	38.3	20.0	22.6	21.7	30.6	20.8	25.5
35-39	14.3	25.0	20.0	9.7	8.1	8.8	22.2	15.0	18.4	19.5	27.9	23.8
40-44	15.8	14.7	15.1	23.5	12.0	16.7	12.0	22.2	16.3	13.9	12.9	13.4
45-49	11.1	5.6	8.3	5.6	3.7	4.4	0.0	7.7	4.5	14.3	3.6	8.2
50-54	6.7	15.4	10.7	3.8	0.0	2.2	7.1	0.0	3.2	10.0	10.5	10.3
55-59	10.5	0.0	7.1	4.8	6.3	5.4	18.2	0.0	10.5	14.3	6.3	10.0
60-64	11.1	0.0	7.7	0.0	7.7	4.0	11.1	20.0	14.3	10.0	18.2	14.3
65+	5.3	0.0	2.6	3.2	5.9	4.2	16.7	35.7	26.9	0.0	4.8	2.4
	36.6	35.3	36.0	35.5	31.7	33.7	42.2	45.4	43.9	40.1	34.5	37.2

<sup>73</sup> Note: Urban districts = Rickmansworth a-b, Watford Town 1a-1e, Bushey 2d-2f, Cashio 3b.  
Rural Districts = Bushey 2a-2c, Cashio 3a,3c. and all other districts, with the exception of the WH,  
which has been omitted from both rural and urban sectors.  
Figures for the Total District (1) Exclude the Workhouse.  
Figures for the Total District (2) Include the Workhouse.

Table 5.9 continued

	Mill End			Oxhey			Rickmansworth			Sarratt		
	M	F	ALL	M	F	ALL	M	F	ALL	M	F	ALL
	%	%	%	%	%	%	%	%	%	%	%	%
<b>15-19</b>	100.0	100.0	100.0	100.0	100.0	100.0	95.8	96.9	96.3	100	95.7	97.8
<b>20-24</b>	90.9	80.8	85.4	85.2	83.3	84.2	81.0	75.0	77.8	71.4	69.2	70.2
<b>25-29</b>	46.7	45.0	45.7	26.1	27.8	27.1	39.1	40.4	39.8	50.0	42.9	47.1
<b>30-34</b>	21.4	15.4	18.5	22.2	19.2	20.8	23.5	9.3	16.2	31.3	31.8	31.6
<b>35-39</b>	23.8	6.3	16.2	27.3	28.6	27.8	9.8	16.1	13.1	21.4	18.8	20.0
<b>40-44</b>	4.5	10.5	7.3	5.9	16.7	11.4	20.8	18.6	19.8	5.9	15.8	11.1
<b>45-49</b>	0.0	5.3	3.2	5.3	8.7	7.1	17.1	10.3	13.5	7.1	6.3	6.7
<b>50-54</b>	16.7	7.7	12.0	0.0	22.2	11.8	3.6	6.9	5.3	0.0	33.3	11.1
<b>55-59</b>	0.0	17.6	11.5	14.3	27.3	22.2	0.0	16.7	7.9	7.1	25.0	13.6
<b>60-64</b>	0.0	11.1	6.3	0.0	0.0	0.0	14.3	6.7	9.8	20.0	8.3	11.8
<b>65+</b>	0.0	15.4	11.8	0.0	7.1	4.0	5.4	10.4	8.2	5.0	5.6	5.3
	<b>40.1</b>	<b>36.8</b>	<b>38.3</b>	<b>36.4</b>	<b>37.1</b>	<b>36.7</b>	<b>36.9</b>	<b>34.5</b>	<b>35.7</b>	<b>35.5</b>	<b>36.9</b>	<b>36.2</b>

	Watford			West Hyde			Watford WH		
	M	F	ALL	M	F	ALL	M	F	ALL
	%	%	%	%	%	%	%	%	%
<b>15-19</b>	99.4	99.5	99.4	100.0	100.0	100.0	100.0	100.0	100.0
<b>20-24</b>	83.5	76.4	79.4	74.1	58.3	66.7	100.0	100.0	100.0
<b>25-29</b>	48.9	45.2	46.8	47.4	5.6	27.0	85.7	66.7	76.9
<b>30-34</b>	32.5	28.7	30.6	14.3	18.2	16.0	75.0	50.0	66.7
<b>35-39</b>	24.8	15.9	20.3	7.1	0.0	4.2	66.7	44.4	53.3
<b>40-44</b>	15.8	16.5	16.2	0.0	0.0	0.0	60.0	25.0	44.4
<b>45-49</b>	9.5	18.6	14.1	0.0	0.0	0.0	50.0	0.0	50.0
<b>50-54</b>	10.0	10.8	10.4	6.7	10.0	8.0	66.7	33.3	55.6
<b>55-59</b>	9.8	11.8	10.9	12.5	11.1	11.8	50.0	0.0	28.6
<b>60-64</b>	4.1	11.9	8.3	0.0	25.0	14.3	42.9	30.0	35.3
<b>65+</b>	9.3	12.4	11.2	0.0	17.6	10.7	30.8	18.8	27.9
	<b>41.6</b>	<b>40.9</b>	<b>41.2</b>	<b>39.5</b>	<b>26.7</b>	<b>33.4</b>	<b>54.0</b>	<b>41.0</b>	<b>49.4</b>

**Table 5.9 continued**

	Urban Districts			Rural Districts			Total 1.			Total 2.		
	%			%			%			%		
	M	F	ALL	M	F	ALL	M	F	ALL	M	F	ALL
15-19	96.5	96.2	96.3	99.7	98.7	99.2	98.5	97.7	98.1	98.6	97.7	98.2
20-24	80.0	71.8	75.6	81.9	72.6	77.2	81.2	72.3	76.6	81.4	72.5	76.8
25-29	45.8	44.1	44.9	40.4	35.7	38	42.3	39.0	40.6	42.8	39.2	40.9
30-34	28.0	23.3	25.7	25.5	23.8	24.6	26.4	23.7	25.0	26.7	23.7	25.2
35-39	18.9	16.1	17.5	18.7	15.4	17.1	18.8	15.7	17.2	19.3	16.1	17.7
40-44	15.9	16.7	16.4	13.5	14	13.7	14.3	15.0	14.7	14.8	15.1	14.9
45-49	11.2	12.7	12	9.02	7.29	8.1	9.8	9.3	9.5	10.2	9.3	9.7
50-54	7.0	10	8.42	8.2	11.7	9.96	7.8	11.1	9.4	8.7	11.3	9.9
55-59	6.6	10.5	8.53	12.3	11.8	12	10.2	11.3	10.7	10.7	11.2	11.0
60-64	6.7	10.3	8.7	4.79	9.7	7.4	5.5	9.9	7.9	6.6	10.6	8.8
65+	7.3	11.7	9.8	5.47	8.08	6.83	6.1	9.5	8.0	8.8	9.8	9.3
	39.3	37.6	38.4	39.7	35.9	37.8	39.5	36.5	36.8	39.8	36.6	37.0

Source: CEBs 1851

### Work, Labour, and Employment

The mixed rural /urban/industrial nature of the Watford SRD means that there was a wide range of occupations represented in the census entries. The silk and paper industries hold highly localised niche markets, but comparison of figures for all age groups, with those of adults above 15 years, reveals that exclusion of juveniles affects the silk industry figures to a much greater degree than those of the paper industry. Thus the higher aggregate age of paper workers is confirmed here, as is the greater involvement of a masculine workforce. While there are no sectors of employment from which females are entirely excluded, it is clear from Table 5.10 that the chief sectors of employment in this district were agriculture and domestic service, together employing more than 40% of the working population.

**Table 5.10 Watford SRD: Employment Sectors<sup>74</sup> by Age and Gender**

	ENTIRE POPULATION						AGE 15 AND ABOVE					
	All M		All F		All		Male		Female		All	
TOTAL	9072		9414		18486		5692		6023		11715	
TOTAL EMP	5786	63.8	2833	30.1	8619	46.6	5376	94.4	2495	41.4	7871	67.2
	Male		Female		All		Male		Female		All	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	1961	33.9	20	0.7	1981	23.0	1799	33.5	20	0.8	1819	23.1
Textiles	140	2.4	436	15.4	576	6.7	125	2.3	336	13.5	461	5.9
Misc	116	2.0	60	2.1	176	2.0	106	2.0	57	2.3	163	2.1
Manufactures												
Leather	166	2.9	30	1.1	196	2.3	160	3.0	29	1.2	189	2.4
Building	292	5.0	4	0.1	296	3.4	291	5.4	4	0.2	295	3.7
Metal	147	2.5	4	0.1	151	1.8	146	2.7	4	0.2	150	1.9
Wood	358	6.2	5	0.2	363	4.2	354	6.6	5	0.2	359	4.6
Food/Drink	465	8.0	97	3.4	562	6.5	453	8.4	56	2.2	509	6.5
Transport	208	3.6	3	0.1	211	2.4	176	3.3	2	0.1	178	2.3
Domestic Service	527	9.1	1164	41.1	1691	19.6	509	9.5	1109	44.4	1618	20.6
Public Serv/Prof	218	3.8	88	3.1	306	3.6	214	4.0	87	3.5	301	3.8
Indep. Means	85	1.5	222	7.8	307	3.6	85	1.6	222	8.9	307	3.9
Straw	15	0.3	327	11.5	342	4.0	11	0.2	284	11.4	295	3.7
Quarry/Mine	13	0.2	2	0.1	15	0.2	13	0.2	2	0.1	15	0.2
Retail/Distribution	112	1.9	26	0.9	138	1.6	110	2.0	26	1.0	136	1.7
Misc	670	11.6	10	0.4	680	7.9	631	11.7	10	0.4	641	8.1
Silk	122	2.1	199	7.0	321	3.7	56	1.0	115	4.6	171	2.2
Paper	171	3.0	136	4.8	307	3.6	137	2.5	127	5.1	264	3.4
	5786	100.0	2833	100.0	8619	100.0	5376	100.0	2495	100.0	7871	100.0
Dependent/No occ.	3265	36.0	6611	70.2	9876	53.4	299	5.3	3459	57.4	3758	32.1

Source:CEBs 1851

Nationally, despite its pre-eminent position as the primary employer, agriculture employed no more than 20.5% of the working male population,<sup>75</sup> but in the rural county of Hertfordshire the percentage was significantly higher at 30.8% of all males, agricultural labourers alone accounting for 25% of the male population.<sup>76</sup> Among the Watford districts 34% of the working male population

<sup>74</sup>Source: CEBs 1851 'Textiles' include non-specific weavers etc.

'Misc. Manufactures include non-specific mill workers.

<sup>75</sup> PP 1852-3 LXXXV *Census Report 1851 Occupations of the People*

<sup>76</sup> The Midland counties as a whole equalled 29.3%. Percentages calculated from the 1851 Census Report Population Tables II: Occupations of the People Division III South Midland Counties p.154 & p.162 Table 7 Hertfordshire.

were engaged in agriculture (Table 5.10) and it was only in the urban and comparatively more densely populated areas of Watford Town, Rickmansworth, and Bushey, that the percentage of agricultural workers fell to levels near to or below the national figure. In West Hyde the percentage of working males engaged in agriculture were as high as 68%. The high figure for Chorley Wood has more complex origins than the usual rural district. Scrutiny of the census reveals a number of smallholders farming two, four, or seven acre plots. These are the legacy of Feargus O'Connor and the Chartist settlement at Heronsgate.<sup>77</sup>

### Employment and the Land

**Table 5.11 Employment in Agriculture by Age and Gender 1851**

District	WHOLE POPULATION						AGE 15 AND ABOVE					
	Male		Female		All		Male		Female		All	
	No.	%	No	%	No.	%	No.	%	No	%	No.	%
Abbotts Langley	312	41.05	3	0.82	315	27.95	290	41.31	3	0.90	293	28.31
Aldenham	320	58.82	3	1.29	323	41.62	296	57.14	3	1.35	299	40.35
Batchworth	106	54.08	1	1.19	107	38.21	100	55.56	1	1.35	101	39.76
Bushey	137	17.21	3	0.75	140	11.72	129	16.84	3	1.00	132	12.38
Cashio	73	28.40	0	0.00	73	21.04	63	27.04	0	0.00	63	20.26
Chorley Wood	203	65.27	1	0.64	204	43.59	180	64.29	1	0.73	181	43.41
Croxley	76	40.21	1	1.18	77	28.10	71	39.89	1	1.33	72	28.46
Leavesden	138	37.81	2	1.14	140	25.88	122	35.57	2	1.21	124	24.41
Mill End	79	46.75	0	0.00	79	35.91	74	46.25	0	0.00	74	35.07
Oxhey	92	39.66	1	0.88	93	26.96	85	41.67	1	1.00	86	28.29
Rickmansworth	68	14.62	0	0.00	68	9.55	62	14.39	0	0.00	62	9.54
Sarratt	119	59.80	0	0.00	119	35.74	107	60.11	0	0.00	107	38.77
Watford Town	122	10.77	0	0.00	122	6.83	118	11.23	0	0.00	118	7.15
West Hyde	116	68.24	5	11.11	121	56.28	102	67.11	5	11.63	107	54.87
<b>Total</b>	<b>1961</b>	<b>33.89</b>	<b>20</b>	<b>0.705</b>	<b>1981</b>	<b>22.98</b>	<b>1799</b>	<b>33.46</b>	<b>20</b>	<b>0.80</b>	<b>1819</b>	<b>23.11</b>

Source:CEBs 1851

In the sub-districts of denser population offering 'urban' employment opportunities, agriculture employed only between 7% (Watford) and 12% (Bushey) of the working population over the age of 15 years. The low figure for Bushey,

<sup>77</sup> Contemporary spelling more usually given as 'Herringsgate'.



while partially attributable to the urban nature of the growing hamlet, too sprawling to be called a town, but nevertheless numbering a total of 2750 inhabitants, owes much to the high number of 'labourers' recorded.<sup>78</sup> While it is possible that these men worked both as agricultural and general labourers as required, and as work was available, the census entries are qualified by no additional description. It is possible that the enumerator may have grown careless, omitting the agricultural prefix, or that these labourers may have been engaged in any form of labouring, from the making of new roads and the repair of old ones to odd-jobbing for a range of local tradesmen.<sup>79</sup>

Similar large numbers of labourers appear in Cashio, matched in each district by a lesser number of agricultural labourers. Of the 11 labourers listed for Cashio 3a, at least 3 have strong connections to the canal, giving their addresses as Lady Capell Wharf and Cassiobury Park Lock, indicating non-agricultural work.

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<sup>78</sup> The label is not uncommon, there are 3854 so listed for Hertfordshire in 1851, as against 21645 agricultural labourers, but the proportion here is unusual. *1851 Census Report Occupational Abstract* p.163

<sup>79</sup> The enumerators for this district were local residents, primarily prosperous tradesmen or master craftsmen, men of reasonable education having some knowledge of the district. None were agriculturists, although several may have been involved in the permanent or casual hire of labourers, so may not have concerned themselves with the distinction between 'agricultural labourer' and 'labourer'. William Dunkley, enumerating 2a, was a timber dealer, William Beeson for 2b was a master smith, Luke Ridge for 2c a grocer and cheesemonger. William Hawkins for 2d was a grocer, while his brother Joseph, a coal merchant acted for 2f, and for district 2e, the local schoolmaster, Robert Soan

The majority of these common labourers are to be found in the districts 2a, 2e, and 2f where in the latter two districts a total of only 5 agricultural labourers are recorded.

#### Agricultural and General Labourers 1851

BUSHEY			CASHIO		
District	Labs Farm/Ag	Lab: Day/Jobbing	District	Labs Farm/Ag	Lab: Day/Jobbing
2a	22	46	3a	11	3
2b	48	15	3b	12	7
2c	26	0	3c	47	30
2d	4	23			
2e	4	54			
2f	1	47			

*\*These figures do not include animal husbandmen (cowkeepers, ploughmen etc.) unless the qualification of farm or agricultural labourer is also inserted in the census entry.*

The occupation of others in 3b giving the address of Cashiobury Estate are more problematical, as are those in 3c that are sons of the Park Keeper.

Safer ground is offered in assessing the labourers, day labourers, and jobbing labourers of the central Watford districts. Here there were not only many more opportunities for truly general labouring, but it is possible to trace several of these labourers and their tasks through the Watford Local Board of Health Surveyors Account Books. That extant for 1853-1864 lists labourers by name and records their wages. It offers proof that labourers were engaged and paid by the day, the half-day and by the week. John Darvill, a labourer living in Birch's Yard in 1851<sup>80</sup> may very well be the John Darvill that in January 1855 was paid 10s for one week's work. In March of the same year a Thomas Timlic who may have been the Thomas Timlick lodging at the Brewers Arms Beerhouse in 1851<sup>81</sup> was paid 3s for one and a half days, and a further 9s 6d for four and three quarter days work. This labouring work frequently appeared to involve breaking flints, during which hazardous process the man was equipped with eyeshades that had cost the Local Board of Health the sum of 4s 6d.<sup>82</sup>

Work changed with the seasons, even in a town. Sometimes they were engaged in clearing and disinfecting blocked drainage channels as reported to the Inspector of Nuisances, sometimes in repairing broken pipes. In December of 1853 the surveyor employed men in 'lifting the main road' at a rate of 39 poles at 1s 6d, (cost £2 18s 6d) labourers at 8s for four days, or 12s for a week. 'Extra labour moving snow etc and Mr Anderson's Foreman 2 days' were entered in the accounts as costing £1 10s. The following month the entry for '2 men 4 days sweep and snow 16s' followed the charge of 3s for 3 days breaking stones and raking roads. In May a boy was paid 8d a day for 4 days picking stones, but a second entry lists the same task for a week at the cost of 4s.

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<sup>80</sup> *1851 Census*: Watford 1b Sched 133

<sup>81</sup> *1851 Census*: Watford 1b Sched 187

<sup>82</sup> Watford Local Board of Health Surveyors Account Book 1853-1864: Entry for Oct 1854. Manuscript, no pagination. WCL

Women labourers are few in the Hertfordshire census, numbering 36 in the Occupational Abstract of the 1851 census<sup>83</sup> and only two in the combined Watford districts. (Both resident in Watford town) two female labourers are listed in the Workhouse, and a further four 'Pauper Labourers' are listed in Leavesden. Since these last are all aged between 70 and 80 years of age, they are unlikely to have been temporarily out of work. Female agricultural labourers are also scarce,<sup>84</sup> one in Aldenham, one in Croxley. Undoubtedly other women laboured on the land, but perhaps only seasonally, as a supplement to other work. In 1834 it was reported that women and children in Watford were 'employed partly in mills and in agriculture during the year', but in Welwyn, although the earnings of women and children are recorded for hay-making and weeding, it was commented that 'women in Hertfordshire seldom work at corn-harvest'.<sup>85</sup> The notorious female gangs belonged to the intensively farmed arable areas of the counties to the north and east of Hertfordshire, Pinchbeck attributing their first appearance to the open parish of Castle Acre in Norfolk, around 1826,<sup>86</sup> and Pamela Horn noting their concentration 'in the six counties of Lincolnshire, Huntingdonshire, Cambridgeshire, Norfolk, Suffolk and Nottinghamshire, though they existed on a small scale in Northamptonshire, Bedfordshire and Rutland as well.'<sup>87</sup> Such gangs do not appear to have existed in the south west regions of Hertfordshire.

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<sup>83</sup> *1851 Census Report: Occupational Abstract DIV.III South Midland Counties, Hertfordshire* p.167

<sup>84</sup> 300 in the whole of Hertfordshire *1851 Census Report: Occupational Abstract DIV.III South Midland Counties, Hertfordshire* p.165

<sup>85</sup> Reports of Commissioners on the Poor Laws 1834 Vol. XXX Appendix (13 1) Answers to Rural Queries Part 1 p.226 Harvest time earnings varied from 2s 6d to 8s in Watford, and in Welwyn from 6s to 7s 6d for women; 3s to 5s for children. The Report records straw plaiting as the sole occupation of women and children in the St Albans parishes of St Michael and St Peter (p.224).

<sup>86</sup> Pinchbeck, *Women Workers and the Industrial Revolution 1750-1850*.p.87

<sup>87</sup> Horn, *Labouring Life in the Victorian Countryside*. p.81

**Table 5.12 Rates of Employment by Age and Gender 1851:**

District	Age 0 and Above			Age 15 and Above			Age 0+			Age 15+		
	M No	F No	All No	M No	F No	All No	M %	F %	All %	M %	F %	All %
Abbotts Langley	760	367	1127	702	333	1035	64.6	30.6	47.4	96.3	44.5	70.1
Aldenham	544	232	776	518	223	741	66.3	27.9	46.9	98.1	41.1	69.2
Batchworth	196	84	280	180	74	254	67.4	28.0	47.4	95.2	39.2	67.2
Bushey	796	399	1195	766	300	1066	60.3	27.9	43.5	91.7	33.3	61.4
Cashio	257	90	347	233	78	311	60.6	23.1	42.7	94.7	31.3	62.8
Chorley Wood	311	157	468	280	137	417	64.9	34.2	49.9	92.1	48.8	71.3
Croxley	189	85	274	178	75	253	60.8	25.4	42.5	92.7	34.7	62.0
Leavesden	365	176	541	343	165	508	62.8	28.5	45.2	96.1	44.8	70.1
Mill End	169	51	220	160	51	211	57.1	15.1	34.7	88.9	25.6	55.7
Oxhey	232	113	345	204	100	304	66.3	32.8	49.7	97.6	44.6	70.2
Rickmansworth	465	247	712	431	219	650	62.1	31.7	46.6	92.1	43.2	66.7
Sarratt	199	134	333	178	98	276	67.5	42.1	54.3	95.7	52.4	74.0
Watford Town	1133	653	1786	1051	599	1650	65.9	35.4	50.1	94.9	47.4	69.6
West Hyde	170	45	215	152	43	195	65.6	19.7	44.1	93.8	29.5	63.3
<b>Total</b>	<b>5786</b>	<b>2833</b>	<b>8619</b>	<b>5376</b>	<b>2495</b>	<b>7871</b>	<b>63.8</b>	<b>30.1</b>	<b>46.6</b>	<b>94.2</b>	<b>41.5</b>	<b>67.2</b>

Source:CEBs 1851

Employment levels averaged over the fourteen districts show that males and females were employed in a ratio of approximately 2:1. Approximately 30% of all women worked, against the Hertfordshire figure of 32.5%. However, over the age of fifteen the figure rises to 41.5% in contrast to the national figure of 26%.<sup>88</sup> Once having reached the age of fifteen, opportunities for employment were generally good in the Watford districts, only in Mill End does the level of adult male employment fall below 90%, and in Aldenham it reached 98%. These figures, however, cannot take into account under-employment, for example those actually working part-time, or in seasonal employment, nor those that record their occupation but omit the fact that they are 'temporarily' unemployed. Female employment over the age of fifteen varied between 25.6 of the female population of Mill End, a majority of whom were engaged in domestic service, and Sarratt that counted 54%, where domestic service was supplemented by a large number of textile workers, many of whom describe themselves as hand loom weavers (possibly of silk), and a small but significant enclave of straw plaiters. 54% is a

high incidence of female employment for this area, and contributes to the overall adult employment figure of 74%, the highest rate of employment in the Watford Enumeration Districts. Oxhey, with its mills reaches only 70.2% overall, although the level of male employment is 97.6% and female 44.6%. These levels of female employment cannot match those of the Berkhamsted region either numerically or by percentage, neither is there a single industry outside agriculture and domestic service, that dominates employment opportunities to the extent seen in the districts of Berkhamsted, where up to 88% of working women may be involved in the straw plait industry.<sup>89</sup> In Tring employment is split between the straw plait (58.7%), domestic service (15.3%), and the textile (principally silk) industry (20.3%) totalling a figure of 94.3% of working women involved in these three industries alone. The only Watford districts that indicate the presence of a potentially dominant industry for female workers, are those referred to above, Oxhey and Sarratt. In both cases this is allied to employment of those under 15 years old and to textile manufacture, approximately one-third (34.5%) of all working females in Oxhey being employed in the silk throwing mills, and 47% of all working women in Sarratt describing themselves as 'Weavers' or 'Hand Loom Weavers'

The urban areas of Watford Town and Rickmansworth also show to ill advantage against areas with special industries, recording 69.6% and 66.7% adult employment respectively. In these districts, as in all the districts other than Sarratt and Batchworth, domestic service reasserts its position as the pre-eminent employer of women. (In Aldenham, 60% of working women were employed in domestic service.) Even in Oxhey, domestic service claimed 39% of working women as against 29% in the silk mills and only 10% in the paper industry. It is however noteworthy that dropping the age parameters to include child workers under the age of fifteen causes a substantial rise in the percentage of female silk workers to 39%. The share of domestic service rises also, but by only two points

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<sup>88</sup> Best, *Mid-Victorian Britain 1851-75*.p.119 England & Wales =25.7% (females over 15, 1851)

<sup>89</sup> In the hamlet of Wigginton. Goose, *The Berkhamsted Region* p.30

to 41%, the percentage of paper workers remaining constant at 10%. Commenting on the all pervasive dominance of domestic service, Hunt remarks:

In 1851 there were two domestic servants for each female textile worker and four of them for each woman that worked in a textile factory. Making the material for a shirt occupied the Lancashire mill girls for only thirty minutes \_\_ but its subsequent life required twelve hours or more of washing, starching, and ironing.<sup>90</sup>

In Batchworth female employment is principally divided between domestic service (37.8%), and 'miscellaneous manufacture' (39.2), which in this district encompasses an active rag trade and a substantial number of unidentified mill workers, most probably employed in the neighbouring silk or paper mills.

It is very clear from the census that men had a far wider choice of occupation than women, yet they too were restricted to the extent that in rural and even semi-rural districts, agriculture was to male workers as domestic service to female. A considerable number of men were also employed in domestic service as grooms, coachmen, gardeners, footmen and 'manservant'. In the town of Watford and in Rickmansworth, dealers, shopkeepers, purveyors of food and drink, outnumber other trades. Men certainly took their place in the mills, frequently outnumbering women in the paper, and in some districts even the silk industry, although when expressed as a percentage of employment by gender this factor is subsumed by the greater number of males in employment. The most unusual feature here lies in the sustained factory employment of adult males, particularly in the silk mills. In the employment figures for all Hertfordshire male and female involvement in the manufacture of silk between the ages of 0-14 is numerically equal, male employment falling sharply after the 15-29 age group, and again after the 30-44 age group, thereafter remaining low but steady. Female involvement actually rises by more than one-third over the 15-39 age group, then follows the

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<sup>90</sup> Hunt, *British Labour History 1815 - 1914*.p.19

falling trend, losing more female workers than male, to match within two individuals the fall in male involvement from age 45-74.

Married women appeared to account for a comparatively small part of the working population, census data for 1851 revealing that in the Watford district, only 16% of married women worked independently. This compares to 26% of Preston wives<sup>91</sup> and, within Hertfordshire itself, to 42% of married women in the St Albans parishes ~ a figure rising to over 50% in the rural parishes.<sup>92</sup> In Watford there is a paradox: the two districts recording the highest proportions of working wives are Oxhey (25.6%) where mill work is plentiful, and Abbots Langley, the only Watford district where the straw plait reasserts itself, claiming 28% of all working females.

The outstanding occupations for married women depend very much on the area in which they live, and upon age. The overall figures in Table 5.13 show that domestic service, textiles, (needleworkers, seamstresses etc) the straw plait, with the combined paper and rag industry, are the chief fields of employment, but it has already been established that Watford was by no means a straw plait district, and that at mid-century the paper mills employed many more males than females.

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<sup>91</sup> Anderson, *Family Structure in Nineteenth Century Lancashire*.p.71

<sup>92</sup> Goose, *St Albans and its Region*.p.90

**Table 5.13 The Occupations of Married Women in the Watford Districts 1851**

DISTRICT : Watford SRD

Occupations	Married Women								All Work		All	
	Cashio	Watfor	Bushey	Oxhey	Abb. L	Rick	A'ham	Leav	No.	%	Mar	F
Agriculture			0	2			2	2	6	1.3		0.2
Textiles	2	21	8	2	20	11	5	11	80	16.9		2.7
Manufacture			0	0		2			2	0.4		0.1
Leather			10	0	4	1		1	16	3.4		0.5
Building			0	1					1	0.2		0.0
Metal			0	0				1	1	0.2		0.0
Wood			0	3		1			4	0.8		0.1
Food & Drink			4	1			4		9	1.9		0.3
Transport			0	0					0	0.0		0.0
Domestic Service	8	25	39	6	14	29	16	8	145	30.6		4.9
Professional			6	5		2	8	3	27	5.7		0.9
									0.0	0.0		0.0
Straw	2	18	8		35	6	11	14	94	19.8		3.1
Dealing			9	1					10	2.1		0.3
Misc.			1	1					2	0.4		0.1
									0.0	0.0		0.0
Silk			5	1	6		5	1	18	3.8		0.6
Paper			5	0	6	12	7		30	6.3		1.0
Rag			0	0	4		25		29	6.1		1.0
Work	12	104	70	24	87	97	41	39	474	100.0		15.9
										0.0		
Independent			1	9		1	3	1	16			0.5
Dep/Unemp.	129	468	544	96	301	555	233	169	2495			83.6
										0.0		
Total	141	573	623	120	389	655	275	209	2985			100.0

Source: CEBs 1851

Abbots Langley, the most western of the Watford districts, having much in common with Hemel Hempstead and Berkhamsted districts, contributes the highest number both of straw plaiters and of paper workers to this table, while Rickmansworth contributes rag cutters and sorters. The straw plaiters are most numerous between the ages of 30-44, and paper workers 30-59. Several of the paper workers are 'paper colourers', skilled work, requiring experience and training,<sup>93</sup> while rag cutting was unskilled and almost exclusively female.<sup>94</sup> Between 1851 and 1881, although the number of working wives almost doubled,

<sup>93</sup> At Home Park Mills in 1881 there were 30 'Colorers', all women, 20 of whom were also enamellers. Men were Colour Makers and Mixers, Size Makers, Brushers and Varnishers. Evans, *The Endless Web: John Dickinson and Co., Ltd. 1804-1954*.p.250

<sup>94</sup> The Rickmansworth parishes held 52 rag cutters and sorters in 1851, all female. 25 married; 15 never married; 7 widows; and 5 juveniles.



the proportion of working wives to non-working fell by 1.5% to 14.5%. There is no evidence of increased labour to supplement the lost earnings of children no longer employed at the mill, although there are increases in the areas of domestic service (4%) and more particularly the handicraft trades connected to textiles, such as millinery and needlework (7%).

## Widows

**Table 5.14 The Employment of Widows in Watford 1851**

DISTRICT : Watford SRD

Occupations	Working Widows								All No.	All Wid %
	Watford	Oxhey	Cashio	Leavd	Bushey	Ald'ham	Rick	Abbots L		
Agriculture	0	1	0	2	1	1	3	3	11	1.6
Textiles	15	0	0	2	10	2	2	2	33	4.8
Manufacture	1	0	0	0	0	0	0	0	1	0.1
Leather	2	0	0	0	1	0	0	0	3	0.4
Building	0	0	0	0	0	0	0	0	0	0.0
Metal	0	0	1	0	0	0	1	0	2	0.3
Wood	1	0	0	0	1	0	0	0	2	0.3
Food & Drink	9	0	2	2	6	1	6	4	30	4.4
Transport	1	0	0	0	0	0	1	0	2	0.3
Domestic Service	42	2	0	10	28	16	30	15	143	20.9
Professional	6	0	0	1	2	0	6	3	18	2.6
Straw	9	0	1	1	2	1	12		3.8	0.0
Dealing	1	0	0	0	3	1	1	0	6	0.9
Misc.	1	0	0	0	1	0	0	0	2	0.3
Silk	0	4	0	0	0	0	1		5	0.7
Paper	1	0	0	0	0	0	3	4	8	1.2
Rag	0	1	0	0	0	0	7		8	1.2
<b>Work</b>	<b>89</b>	<b>8</b>	<b>3</b>	<b>18</b>	<b>54</b>	<b>23</b>	<b>62</b>	<b>43</b>	<b>300</b>	<b>43.8</b>
Independent	20	3	3	3	39	15	22	6	111	16.2
Dep/Unemp.	66	10	10	10	42	26	74	36	274	40
<b>All Widows</b>	<b>175</b>	<b>21</b>	<b>16</b>	<b>31</b>	<b>135</b>	<b>64</b>	<b>158</b>	<b>85</b>	<b>685</b>	<b>100.0</b>
<b>All Females</b>	<b>1847</b>	<b>344</b>	<b>389</b>	<b>617</b>	<b>2045</b>	<b>832</b>	<b>3887</b>	<b>1199</b>	<b>11160</b>	<b>6.1</b>
<b>All Females 15+</b>	<b>1265</b>	<b>224</b>	<b>249</b>	<b>368</b>	<b>1288</b>	<b>528</b>	<b>2448</b>	<b>748</b>	<b>7118</b>	<b>9.6</b>

Source:CEBs 1851

Widows accounted for 6% of the Watford and Rickmansworth female population, (9.6% of those aged 15 and above)<sup>95</sup> as compared with Mills Rural Norm of 5.2%, 5.7% in Berkhamsted, and 5.4% in St Albans.<sup>96</sup> Like the never-married, widows frequently found it necessary to earn their own living, and in the Watford districts 44% of widows worked. By far the majority (21% of all widows 47.7% of working widows) were engaged in domestic service.

### Children

As illustrated in Table 5.15, the employment of children in the Watford district at mid-century was very low in comparison to that of Berkhamsted and St Albans, where not only percentages, but the numbers of children employed are a great deal higher. Children also commenced declared work earlier. Where child workers under the age of five are non-existent (or at least unrecorded) in Watford, there are already minimal numbers in St Albans and Berkhamsted, which translate to substantial sectors at age 5-9, and at age 10-14, approximately half the juvenile teen population of these latter districts are recorded as employed. Watford district does not record even one quarter of the population in employment at that age. The national figure for child employment in the 5-9 age group at mid century has been variously estimated as either standing at below 2%, or ranging as high as 3.5%, Watford at 2.4% falls close to these figures but the figures for St Albans and Berkhamsted are materially higher at 14.2% and 25.9%.

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<sup>95</sup> Inclusive of the workhouse. Omitting the Workhouse gives figures of 5.9% and 9.2%.

<sup>96</sup> Goose, *The Berkhamsted Region*. p.27 & Goose, *St Albans and its Region*. p.34

**Table 5.15 Child Employment in South West Hertfordshire by Age, Sex and District, 1851.<sup>97</sup>**

	Age 0-4				Age 5-9				Age 10-14			
	M No.	%	F No.	%	M No.	%	F No.	%	M No.	%	F No.	%
Watford	0	0.0	0	0.0	15	1.0	28	2.4	371	35.1	221	22.8
St Albans	4	0.4	9	0.8	112	10.0	153	14.2	484	51.1	488	49.5
Berkhamsted	4	0.5	4	0.5	104	16.3	181	25.9	297	44.6	389	55.9

Part of the reason for such widely different figures is the greater dominance in the two more westerly regions of the straw plait. In those areas a general aversion to factory work was noted by several contemporary commentators :

.... this does not result from any superiority of wages, but from the natural desire to be in the open fields, and the aversion to monotonous and sedentary occupation, care and restraint.<sup>98</sup>

With comparatively few straw plaiters among Watford inhabitants, a high proportion of working children and young persons found employment in the silk and paper mills.

**Table 5.16 Employment of Children in Silk Mills 1851**

	Age 0-4				Age 5-9				Age 10-14			
	M No.	%	F No.	%	M No.	%	F No.	%	M No.	%	F No.	%
Watford	0	0	0	0	6	0.5	9	0.8	54	5.1	72	7.4
St Albans	0	0	0	0	8	1.8	10	2.5	43	12.1	25	6.4
Berkhamsted	1	0.1	0	0	12	1.9	8	1.1	52	7.8	48	6.9

Source:CEBs 1851

From Table 5.16 it is apparent that despite the apprentices at Tring, Watford is the main employer of young persons in the silk industry, and indeed the sub-district that records the highest levels of child employment is Watford Town, where

<sup>97</sup> Figures for Berkhamsted & St Albans taken from Goose, *The Berkhamsted Region*. and Goose, *St Albans and its Region..* Watford figures calculated from Census Returns 1851, Watford Districts.

employment in the silk industry, coupled with undefined mill and factory work, accounts for 19.6% of girls and 27.5% of boys between the ages of 10 and 15 in that area. There are very few younger children employed, (6 in all) of whom all girls (3) are employed in the silk mills, as are all but one boy. The silk mills alone account for 42.9% of boys and 64.7% of girls aged 10-14 in employment. The particular role of children in the silk mills will be considered in Chapter 7, but it is evident here that elsewhere in the district the mills have less influence on levels of child employment than might be expected.

### 5.17 Rates of Child employment in Watford by Age, Sex and District. 1851

District	Children in Employment							
	Age 5-9				Age 10-14			
	M	%	F	%	M	%	F	%
Aldenham	1	0.1	0	0.0	25	2.4	8	0.8
Abbots Langley	2	0.2	5	0.4	61	5.8	22	2.3
Batchworth	1	0.1	0	0.0	15	1.4	10	1.0
Bushey	0	0.0	1	0.1	26	2.5	19	2.0
Cashio	2	0.2	0	0.0	22	2.1	12	1.2
Chorley Wood	0	0.0	3	0.3	31	2.9	17	1.8
Croxley	2	0.2	2	0.2	2	0.2	8	0.8
Leavesden	1	0.1	1	0.1	21	2.0	10	1.0
Mill End	0	0.0	0	0.0	9	0.9	0	0.0
Oxhey	0	0.0	0	0.0	27	2.6	13	1.3
Rickmansworth	2	0.2	3	0.3	22	2.1	23	2.4
Sarratt	1	0.1	10	0.8	19	1.8	26	2.7
Watford	3	0.3	3	0.3	73	6.9	51	5.3
West Hyde	0	0.0	0	0.0	18	1.7	2	0.2
<b>Total employed</b>	<b>15</b>	<b>1.4</b>	<b>28</b>	<b>2.4</b>	<b>371</b>	<b>35.1</b>	<b>221</b>	<b>22.8</b>
<b>Total Child Pop.</b>	<b>1099</b>	<b>100.0</b>	<b>1177</b>	<b>100.0</b>	<b>1058</b>	<b>100.0</b>	<b>970</b>	<b>100.0</b>

Source:CEBs 1851

Sarratt offers comparatively high returns of child employment, as it does of female employment, but the source of work is mainly in agriculture. 37.9% of all boys

<sup>98</sup> Osborne's London and Birmingham Railway Guide. pp.124-125

10-14, are employed in agriculture.<sup>99</sup> Here, as in Abbots Langley, the straw plait has a minor influence on child labour, but again, few young children are employed, the levels of 11.5% (Abbots Langley) and 14.6% (Sarratt) of girls aged 10-14 in those respective areas, being the highest reached in the entire district for involvement in the straw plait trade. Only in Sarratt, a rural district with employment readily available for both girls and boys, does the overall employment figure for all children (0-14, both sexes) reach significantly above 15% (Oxhey), attaining 23.3%.

In Rickmansworth 1851, also a comparatively urban district, the contrast in workforce base is most marked. The silk mill employs 70% of its workers under the age of twenty: 81% of males and 67% of females fall into this age group. The paper mill takes only 30% of its workers from this group: 37% of males, and 27% of females. Again, the silk mill takes children as young as eight, and is the chief employer of children under the age of fifteen. 80% of working children under the age of ten years old are employed at the silk mill, and 30% of those at work under the age of fifteen. Agriculture is the highest employer of juvenile male labour, but only within the narrow confines of the age ten to fourteen age group does it employ a greater number of children than in the silk mill.

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<sup>99</sup> Excludes farmers sons

**Table 5.18 Sectors of Child Employment by Age and Sex in the Watford Districts. 1851**

Employment Sector	Children in Employment							
	M	Age 5-9 %	F	%	M	Age 10-14 %	F	%
Silk	6	0.5	9	0.8	54	5.1	72	7.4
Straw	1	0.1	9	0.8	4	0.4	37	3.8
Paper Industry	1	0.1	1	0.1	28	2.6	6	0.6
Agriculture	3	0.3	0	0.0	155	14.7	0	0.0
Domestic Servant	1	0.1	0	0.0	17	1.6	55	5.7
General Labourer	0	0.0	0	0.0	33	3.1	0	0.0
Errand Boy/Girl	0	0.0	0	0.0	28	2.6	0	0.0
Factory/Mill/Foundry	2	0.2	0	0.0	13	1.2	9	0.9
Other	1	0.1	9	0.8	39	3.7	41	4.2
<b>Total</b>	15	1.4	28	2.4	371	35.1	220	22.7
<b>Total Child Pop.</b>	1099	100.0	1177	100.0	1058	100.0	970	100.0
<b>No occ.</b>	1081	98.4	1149	97.6	667	63.0	745	76.8

Source:CEBs 1851

It is clear from Table 5.18 that the chief sectors of child employment in this district broadly echo those of adult employment, with the distinction of much greater proportional involvement in the silk industry.

### Conclusion

At mid-century the town of Watford was expanding, increasing in importance, becoming more urbanised, its government centralised and modernised under a new Local Board of Health, but the enumeration district of Watford and Rickmansworth included large predominantly rural areas. Employment rates overall were generally higher than the national average, but female and juvenile rates of employment were highest in rural, not urban, areas. Occupations other than general labouring and domestic service tended to be highly localised ~ the straw plait in Abbots Langley, hand loom weaving in Sarratt, silk mill workers concentrated in Oxhey, Watford and Rickmansworth. These factory workers did not travel long distances to their place of employment, and the moderately high

rate of female employment overall is largely attributable to cottage industry and out-work. Without the all-pervading influence of the straw plait, rates of female and child employment could not reach the levels of the western districts, or of St Albans. Shortage of suitable labour for mills at Rickmansworth and Watford was not, therefore, simply the result of competition from other occupations.

Despite limitations, the census provides a clear profile of the district at a time of high employment in the silk mills. Chapters 3 and 4 have explored the national and regional framework within which the local mills functioned; this chapter confirms the importance of the local perspective, demonstrating structural and occupational variation not only between regions within counties, but between neighbouring parishes. This knowledge provides a base from which to examine the dynamics that governed relationships between town, mill owner, and mill worker.

## CHAPTER 6.

### HERTFORDSHIRE MILLS AND MILL OWNERS

He was regarded as a generous, true-hearted, open-handed citizen, and a great benefactor to the city with which he had been so long associated.<sup>1</sup>

*Obituary: Charles Woollam, Silkmaster 1832-1915*

Despite a strong association of the textile industry with the factory culture that came to be identified with the industrial revolution, and remembering John Lombe's vast and (arguably) efficient throwing mill of 1717, it is perhaps surprising that few of the Hertfordshire silk mills were purpose built. Nor did they conform to the vast scale generally associated with factory production, varying in size from a few dozen hands to about 500. Research suggests that the Rookery Mill at Watford, built by Thomas Deacon about 1760<sup>2</sup> and the mill at Redbourn built in 1857 at the order of John Woollam, (proprietor of the Abbey Mills at St Albans) were the first and last purpose-built silk mills to be opened in Hertfordshire. The mill at St. Albans had been converted from a corn mill to processing silk in 1802<sup>3</sup> and William Harty, with connections to the Paumier family, had by 1806 established a mill in Rickmansworth High Street using pauper labour. The Brook St. Mill at Tring opened in June of 1824, and possessing the largest water wheel in Hertfordshire (22ft diameter) was a conversion from a water-powered corn mill; John Ransom of Hitchin worked Grove Mill as a corn mill, then converted it for silk and was described in Pigot's 1828 as a silk throwster. The prevalence of such conversions argue initial simplicity of design and comparatively low capital expenditure involved in the process, although this

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<sup>1</sup> *Herts Advertiser and St Albans Times* 6 Feb 1915 p.4ii

<sup>2</sup> PP 1834 XX *Supplementary as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire No. 114 Answers of T R Shute.

<sup>3</sup> In early works several historians have ascribed to the Woollam family and the St Albans mill the earliest introduction of silk throwing into the county. eg Johnson, *Industrial Monuments in Hertfordshire* p12 (1967)



was not invariably the case: the lease purchased in 1822 on a mill at Stratford in Essex cost £350, with additional investments in 1825 for improvements, buildings, the installation of steam engines and machinery 'of the best possible construction' costing £5,670 ~ a total cost of £6,020. Worked by Messrs. Thomson and Son until 1826 when the venture failed, the mill was offered at auction in 1827 when the highest bid was £1,100.<sup>4</sup> Purchase of second-hand machinery from such a mill would have considerably lowered conversion costs. Later modernisation and expansion of the works would appear to have depended more upon the local availability of labour and the workload than upon the fact that the building was originally purpose built or a conversion.

Of all the silk mills in Hertfordshire, only the St. Albans and Redbourn mills continued production into the twentieth century. The Abbey Mills at St Albans continuing in production as late as 1956, although Redbourn closed in 1938. Grove Mill at Hitchin lasted less than 10 years as a silk throwing mill; the workhouse mill at Hatfield closed in 1849, after some thirty years operation (1818-1849); Tring, rescued from dissolution by Lord Rothschild, maintained local employment until the 1890s.

Of the principal silk mill proprietors mentioned in this and succeeding chapters, none were native Hertfordshire men. All had connections to the London silk trade, where Thomas Watson of Watford had premises in Aldermanbury; the Woollam brothers, first in Cateaton Street, then in Throgmorton Street,<sup>5</sup> Messrs Shute and Rock in Ivy Lane, and David Evans in Cheapside.<sup>6</sup>

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<sup>4</sup> Ballance, *Remarks on Some of the Important Errors contained in Mr Badnall's Pamphlet entitled A View of the silk Trade*. p.35 Bought in, the mill remained untenanted, efforts to sell at £1500 being unsuccessful. According to Balance, at Winchester, Hampshire in 1824 three mills remained idle, for sale but without bidders, throwing 500-600 hands out of employ. p.36

<sup>5</sup> Confirmation of the Woollams connection with London is particularly strong, since the correspondence from Charles Woollam the elder to Mr Stevenson, Vestry Clerk of St Margarets Westminster during the early months of 1804, bear both the address '39, Throgmorton St' and 'Abbey Mills, St Albans.' C.W.A. E3338

<sup>6</sup> *Universal British Directory of Trade Commerce and Manufacture for 1797* Vol. 1 lists :  
 Thomas Watson, Silk-man, 65, Aldermanbury  
 Woollam and Billinge, Silk-men, Cateaton-Street  
*Holden's Triennial Directory 1805-7* Vols 1 & 2  
 Shute and Rock, Silkmen, 27 Ivy Lane, Newgate Street

## Watford

The title of a short article by Grant Longman 'The Mystery of Watford's short-lived silk industry.'<sup>7</sup> is less apt than may be at first supposed. In Watford, as in St Albans, the mills existed and worked for more than a hundred years, islands of comparative stability in a naturally unstable industry. Silk throwing was firmly established in Hertfordshire by 1768, when the Rookery Mill was advertised for sale as a going concern with an experienced workforce.<sup>8</sup> While it is not proven that the Rookery mill was the earliest silk mill in Hertfordshire, nor indeed, in Watford, it was certainly the first to attract the attention of visitors to the region. The Militia Lists of 1759 list silk throwsters among the Watford militiamen,<sup>9</sup> and by the late eighteenth century Watford was heavily reliant upon the silk industry, the Universal British Directory stating in 1797 that 'The principal manufactory of this town is throwing of silk, and for which there are three different buildings, two worked by horses and one by water. That which is worked by water is by far the largest.' The same entry continues, confirming, by location and power source, that 'Mr Paumier' was then the occupier of the Rookery Mill:

.... The river Colne runs at the back of Watford town, in the vicinity of which it turns four mills, viz. a paper-mill belonging to Mr Lewin, called Bushey-mill; a flour mill in the town of Watford, occupied by Mr Henry Field; the silk-mill occupied by Mr Paumier; and a paper-mill, occupied by Mr Lepard, which is called Hamper-mill.<sup>10</sup>

Earliest references to individual silk mill proprietors in Watford are to be found in the Sessions records, and in the vestry Minutes, where it is shown that in 1771 John London and Edward Crutchley occupied a silk mill at Watford; but no

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Woollam, Chas. And Co. Silkmen, 39 Throgmorton Street

D. Evans is listed in *Pigots's Metropolitan Directory 1828*

<sup>7</sup> *West Herts Review*, Thurs. 24 Oct 1985

<sup>8</sup> Sale notice, *Manchester Mercury* 2 Aug 1768. See Chapter 4 p.91

<sup>9</sup> Eg John Buckmaster 'Silk Throwster' served between 1759 and 1772 Watford Vol 1. Militia Lists pub. Hertfordshire Family History Society.

<sup>10</sup> *Universal British Directory 1797* Vol. 4 p.701

location is specified.<sup>11</sup> Peter Paumier, Silk Throwster, was also a resident, as attested by his signature to the Vestry Minutes of January 8<sup>th</sup> 1771<sup>12</sup> although the first explicit record of his bidding for the labour of the poor to work in his silk mill is not until 1775.<sup>13</sup> Previous entries note only the successful bidder, William Parry, also a silk throwster, who in December 1772 was awarded the labour of the poor, 'from the first day of February 1773 for two years certain, and for which the said Wm Parry doth agree to pay to the Overseers of the Parish sixteen pence per head (to be paid weekly) during the said Term of two years.'<sup>14</sup>

Several other silk mills are known to have been working in Watford in 1797, one of which may still have been in the ownership of William Parry. Suggested mill sites include Red Lion Yard, where a number of silk workers are still recorded as late as 1871, and another at the corner of Clarendon Road. Evidence as to the type of building and source of power is sparse, although it is suggested that the former was worked by horses. A silk mill owned by Mr Thomas Watson of North End House, recorded as having taken 'apprentices' from the London Parishes in the later years of the eighteenth century, is believed to have stood at the corner of Rosslyn Road and the High Street.<sup>15</sup> Watson certainly owned a number of properties in this northern part of the town, including 'The Artechoke', and tenements in the occupation of William Grover, Ruth Petit, W<sup>o</sup> Thomas Dollymore, and John Buxton, as well as a piece of land called Giles Field.<sup>16</sup> The mill closed in 1802 with Watson's death, the children being taken into the Workhouse.<sup>17</sup>

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<sup>11</sup> *Sessions Records of the Liberty of St Albans Division 1770-1840* Vol. 4 Midsummer Sessions 1771 p.3 'Order on an appeal of Edward Crutchley and John London, occupiers of a silk mill in Watford, against their assessment for the poor.' It is upon this vague entry that several local historians have based an assumption that Crutchley and London occupied the Rookery Mill.

<sup>12</sup> *Watford Vestry Minutes* 8 Jan 1771 HRO D/P117 8/1

<sup>13</sup> *Watford Vestry Minutes* 20 Jan 1775 HRO D/P117 8/1

<sup>14</sup> *Watford Vestry Minutes* 22 Dec 1772 HRO D/P117 8/1 William Parry is recorded in the Poll Books for 1774 as owning a house in Watford but in 1784 and 1790, he is recorded as living in Sarratt as a tenant of Sir David Williams, Bart, although still owning a house and mill in Watford. *Poll Books for Hertfordshire* 1774 p.64; 1784 p.60 ; 1790 p.61 IHR

<sup>15</sup> Locational information from Mr. E J Chapman, Local Historian.

<sup>16</sup> HRO D/EB 1157 B11

<sup>17</sup> *Watford Vestry Mins.* 9 Feb-7 Sept 1802 HRO D/P117 8/2

Yet another silk mill existed in Aldenham Road, Bushey for a short period, listed in Pigot and Co. Commercial Directory for Herts 1826-7, under the names of Braden and Jones, Bushey Silk Mills, Bushey. Piggot's 1839 edition omits Braden and Jones, but lists Thomas Toppin (of Beechen Grove, Watford) as being both Silk Throwster and Brewer. His mill stood near Loates Lane, lying in the vicinity of both Clarendon Road and Red Lion Yard.<sup>18</sup> Toppin was not a silk master in the same class as Parry, Paumier, or Shute, finding it necessary, or expedient, to diversify his business interests, initially as a coal merchant, and thereafter as a beer retailer.<sup>19</sup>

It is almost certain that this was the second of the two Watford silk mills recorded in the Factory Reports of 1839, and that it was worked by steam. It is possible that it used both a two horse power steam engine, like the mill at Rickmansworth, and a larger 10 horsepower steam engine, as against the single water wheel capable of generating 25 horsepower, at the much larger Rookery Mill. Although Shute himself does not state the exact power of his mill anywhere in his answers to the 1833 inquiry, he does assert that the Watford mill 'is worked by a stream of about twenty-five to thirty horse power; ..... the stream at Watford is very regular for a river.'<sup>20</sup>

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<sup>18</sup> *Release and Covenant*: Mr Thomas Toppin to Mr John Butcher dated 22 June 1838 HRO D/EX 548 T18 In June 1838 Toppin sold to his neighbour, John Butcher, a

...stable or building situate standing and being at Watford aforesaid adjoining the premises of the said John Butcher on one side and the tenement and silk mills and ground of the said Thomas Toppin on the other side between a certain way or lane called Loates Lane leading from the High Street of Watford aforesaid to a certain Common Field called Poe Field on the East part and a certain other lane leading from the Red Lion Inn in the said town of Watford to the said field, called Poe Field Thomas Toppin therein described as 'late a coal Merchant and Silk Throwster but now a Silk Throwster and Retailer of Beer'.

<sup>19</sup> *Release and Covenant*: Mr Thomas Toppin to Mr John Butcher dated 22 June 1838 HRO D/EX 548 T18

<sup>20</sup> PP 1834 XX *Supplementary as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire No. 114 Answers of T R Shute, A.4 p.133

**Table 6.1 Factory Returns 1839 Machinery**

Parish	Moved by Steam-Engines Horse Power			Moved by Water-Wheels Horse Power		
	29 to 20	19-10	Under 10	29 to 20	19-10	Under 10
<b>St Albans</b>						
Horse Power						11
No. wheels						2
<b>Hatfield</b>						
Horse Power			2			
No. Engines			1			
<b>Rickmansworth</b>						
Horse Power			2			
No. Engines			1			
<b>Tring</b>						
Horse Power	25				16	
No. Engines & Wheels	1				1	
<b>Watford</b>						
Horse Power		10	2	25		
No. Engines & Wheels		1	1	1		

Source: *Factory Inspectors Returns* <sup>21</sup>

By 1850, Toppin has ceased to appear in Kelly's Commercial Directory and is most probably deceased, the two Toppin sisters, Ann (aged 50, designated Head of Household) and Jane (55) recorded the following year as living in Beechen Grove as beer retailers.<sup>22</sup>

Rickmansworth had both cotton and silk mills by 1810<sup>23</sup> but more is known of the later silk mill, built or rebuilt by Thomas Rock Shute in 1830. This silk mill at Rickmansworth was under the control of a manager, and appears to have closed temporarily, or at least ceased to come under the jurisdiction of the factory inspectorate, some time between 1862 and 1867, at which latter date the Factory Inspectors' Report recorded only four silk mills in Hertfordshire, and since

<sup>21</sup> Childrens Employment Vol.10 *Returns Relating to Factories* 1839-44 pp.230-231

<sup>22</sup> *1851 Census* Watford Dist.1a Sched 52 Jane Toppin's death is recorded in the *Watford Observer* of 24 Oct 1874 p.4vi 'On the 20<sup>th</sup> inst., at Watford, Jane Toppin, aged 85 years.'

<sup>23</sup> Cooke, *Topographical and Statistical Description of the County of Hertford*. 'Upon the streams which so profusely water this town, and contribute not a little to its prosperity, are erected several mills; two of which, a large cotton and flour mill, are situated upon the south side, and two more, viz. a flock mill and silk mill, have been lately erected upon the western side.' p.139

the Rookery at Watford, Abbey Mills at St Albans, Redbourn, and Tring were in full operation, the lost mill must of necessity be Rickmansworth. Always smaller than the Rookery, and worked as an auxiliary mill, it is most likely that it no longer employed sufficient persons to be accounted a 'factory' under the terms of the inspectors remit. In 1873 following the death of Thomas Rock Shute<sup>24</sup> it was feared that the mill would be closed permanently. The mill girls were told that they could attend school all day and that their school money would be paid for them at Christmas,<sup>25</sup> but in October 1873 it was advertised for sale as a going concern.<sup>26</sup> Sold together with the Rookery mill it had reopened by February 1874 but experienced slack times from 1876-1879 when half-timers were discharged and returned to school.<sup>27</sup>

The Tring Mill boasted the largest number of employees at a single site; of the approximately 1,000 silkworkers in 1861 Hertfordshire, (70% of whom were under the age of 20) Woollams claimed to employ 360 hands, Shute to employ 280 persons at Watford,<sup>28</sup> and the Rickmansworth parishes recorded 108 residents employed in silk mills, but David Evans at Tring employed between 400 and 500 hands.

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<sup>24</sup> Branch Johnson erroneously states that Thomas Rock Shute '...evidently made a success of Watford, since he continued there until his death in 1881.' Johnson *Industrial Archaeology of Hertfordshire*. p.64 For confirmation of Shute's death in 1873 see *Watford Observer* : Obituary 23 Aug 1873 p.4ii. Notice re: Sale of household effects '...by the direction of the Executors of the late T. R. Shute Esq.' 29 Nov 1873 p.1iv.

<sup>25</sup> *Log Book, St Mary's Girls School, Rickmansworth*. 1873 Ref. 2811 Ref. 0112 records that 7 full-time mill girls were admitted to the school at this time. Rickmansworth HS.

<sup>26</sup> *Watford Observer* 18 (and 25) Oct 1873 p.1iii The sale to be at Tokenhouse Yard on November 19<sup>th</sup> 1873.

<sup>27</sup> *Log Book, St Mary's Girls School, Rickmansworth*. 1874 Ref. 2002 'All half-timers but two have gone back and four have gone to work all day.'; 1875 Ref. 1707; 1877 Ref. 1406 Rickmansworth HS.

<sup>28</sup> *Census 1861 Watford Dist 7B Sched 18* The census can give only an imperfect assessment of the numbers employed in each mill, unless the mill owner actually lists the number and gender of his employees, since a simple count of 'silk throwsters' or even 'silk labourers' takes no account of auxiliary workers that may list themselves only as 'engine driver', or 'general labourer'.

Distinct patterns to silk mill ownership are discernable in Hertfordshire, where not one of the individual mills was truly independent. The mills at Watford, Rickmansworth and Chesham formed one group, those at Tring and Aylesbury, a second, and the Woollam family worked mills at St Albans, Hatfield, and Redbourn. As if to refute the notion that silk throwing mills changed hands frequently, three members of the Woollam family ran the Abbey Mills from 1802 until they came into the possession of J. Maygrove and Co. (Established 1866) in 1902.<sup>29</sup>

The violent fluctuations [in the prosperity of the industry] had two marked effects on the distribution of the silk industry in England. Firstly, the ownership of the mills changed frequently. In many cases silk continued to be produced under the new owners, but in some mills silk production was only a short lived phase in the history of a particular mill. In Sheffield and Stockport, for example, mills are known to have been converted from corn-milling to silk production and then to cotton manufacture within a short space of time.<sup>30</sup>

In early years the Rookery Mill changed hands more frequently: built by Thomas Deacon of Wiggshall around 1760, it is variously stated that it was then leased to an Edward Critchall<sup>31</sup> and suggested to have been in operation under Edward Crutchley and John London by 1771<sup>32</sup> but this appears possible only if Crutchley has sold his share and moved to other premises before 1775. Peter Paumier, a silk throwster of Huguenot extraction, is the more likely owner, since he and Edward Crutchley several times competed with each other for the labour of the poor, Paumier consistently losing the bid on the grounds that his mill was at too great a distance from the Workhouse, across Watford Fields.<sup>33</sup> This locates the mill site

<sup>29</sup> *Herts Advertiser & St Albans Times* 6 Feb 1815 p 5iii.

<sup>30</sup> Wilde, 'Contrasting Features in the Evolution of the Silk Industry in the Towns of the South-West Pennines'. p.9

<sup>31</sup> Nunn, Ed. *The Book of Watford* p.28

<sup>32</sup> Young, *Silk Throwing in Watford*. p.4

<sup>33</sup> *Watford Vestry Minutes* 20 Jan 1775 HRO D/P117 8/1

The Vestry minutes of 27 June 1775 report that Crutchley has given notice of his leaving the silk mills he then occupied, and the labour of the poor was thereafter transferred to Wm. Parry.

as being either the Rookery, or close to it in the same direction, and the Paumier family was certainly in occupation of the Rookery in 1797. Crutchley's mill must have been more centrally situated, in the town itself. Paumiers Rookery mill then passed either to the charge of Lewis Paumier, his son, or to William Harty, his son-in-law. A Peter Paumier of Watford, who died in July 1785, left bequests to his daughter Margaret, 'wife of William Harvy the younger, of Watford' and to his son, Lewis.<sup>34</sup> Although Lewis Paumier does not appear in the 1786 Land Tax records for Watford, William Harty, possibly his brother-in law, is assessed at £1 1s 10<sup>1</sup>/<sub>2</sub>d in Oxhey Hamlet,<sup>35</sup> where the Rookery mill was situated. Lewis Paumier, recorded as a silk throwster, appeared in the Militia Lists for 1779 at Oxhey, again in the years between 1781 and 1787, although in both the 1802 and 1805 Poll Books, his qualification is recorded as a house. That he became a citizen of some standing is confirmed by his presence as a Trustee of Dame Mary Morrison's Apprenticeship Charity, listed with the Trustees of 1816.<sup>36</sup> Paumier

<sup>34</sup> *Huguenot Soc. Wagner Collection* Will summaries p.232 Rec. No.853 It is difficult to tell whether the name is Harvy or Harty.

<sup>35</sup> *Land Tax Records Oxhey Hamlet* p.19 Unfortunately, the Watford records (unlike those for Rickmansworth) do not list the properties or lands on which the tax is levied.

<sup>36</sup> Trustees 1816

Earl of Clarendon	
Hon. Lord ? W Capel	d. 7 March 1824
Samuel Moody Esq	d. Feb 1823
Robert Clutterbuck	d. 25 May 1831
John Finch	d. 2 Dec 1823
William Smith	d. 10 Oct 1818
Thomas Day	d 19 March 1827
Lewis Paumier	Removed and become disqualified

New Trustees 1824	
Stewart Marjoribanks Esq	Removed from Watford and disqualified
James Howard	
John Finch	
John Woodrush	d. 3Dec 1836
Edmund Fearnley Whittingstall	

8 in Number

Minutes and Accounts of Dame Mary Morrison's Apprenticeship Charity (Fronticepiece)  
HRO D/EX372 Q5 The Trustees met in March or April of each year to award apprenticeships to deserving young persons, and although the occupations of the masters are not listed during the early years, by 1822 not only has it been resolved that '... half of the premium be paid at the Time of Apprenticing and the other half at the Expiration of three years and a half' but



attended most meetings from 1816, his last recorded attendance at a meeting of the Trustees is on April 24<sup>th</sup> 1824, where it is also stated that he is disqualified from serving, by reason of his removal from the district.<sup>37</sup>

The Rookery mill remained for many years the largest and most important silk mill in the Watford district, smaller rivals having all disappeared by 1850. Enlarged 'about the year 1814' when an extra storey was added, the Rookery had rooms some ten and a half feet high, with 36 windows in each, some of which had ventilators. It is possible that this modernisation work was carried out for the 'Messres Rock and Shute' referred to in the 1811 Vestry Minutes approving the transfer to them of parish children from Harty's mill.<sup>38</sup> If Messrs Rock and Shute were already installed at the Rookery, it may have been as tenants since indentures of lease and release on a conveyance of the Rookery House and cottages to Richard Shute are dated the 9<sup>th</sup> and 10<sup>th</sup> days of July 1816.<sup>39</sup>

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the occupations to which the children are apprenticed are given as a shoemaker, carpenter, turner, two tailors, and the sole girl, 'Elizabeth the daughter of Charles Russell to Ann Tagg of Watford Milliner.' *Minutes and Accounts of Dame Mary Morrison's Apprenticeship Charity*. April 15 1822 Occupations are less frequently recorded thereafter, but Ann Tagg appears to have taken several apprentices, her name recurring in the records. eg 'Sarah, Daughter of James Woodward to Ann Tagg' 5 April 1823 HRO D/EX372 Q5

<sup>37</sup> *Minutes and Accounts of Dame Mary Morrison's Apprenticeship Charity* 24 April 1824 '...and John Woodcock Esq [appointed to serve] in the Room of Mr Paumier who is become disqualified by Removal out of this parish.' HRO D/EX372 Q5

<sup>38</sup> *Watford Vestry Mins.* March 18 March 1811 . HRO D/P117 8/2

Ordered that the Children lately employed by Wm Harty do in future be sent to Messrs Rock and Shutes with the other Children employed by them. ~ and not to be removed but by the joint consent of the Parish and Messrs Rock and Shute.

(signed)

Wm White  
John Bruton  
P.J.C. Paumier  
Lewis Paumier

<sup>39</sup> *Particulars and Conditions of Sale: The Rookery Freehold Property.* To be sold by auction at the Rose and Crown Hotel, Watford. Tues. 17 Oct 1882. WCL

## Mill Labour

There is some evidence to suggest that lack of cheap, available local labour contributed to the ultimate stagnation of this industry, halting the establishment of more silk mills in south west Hertfordshire generally, and in the Watford district in particular. A labour pool sufficient to supply the mills of the 1760s, and supplemented from the ranks of the workhouse poor, had by 1830 already proved inadequate to support further expansion of the industry. In 1834 Thomas Rock Shute furnished answers to a series of questions posed by the Commission on the Employment of Children in Factories. Here he declared himself to be proprietor of a silk mill at Watford, a second four miles away at Rickmansworth (built in 1831) in Hertfordshire, and a third, built about 1830, some twelve miles distant at Chesham in Buckinghamshire. The reason he gives for these additional mills is the shortage of suitable local labour. The Rookery mill had been enlarged; the Colne was capable of supplying even greater power; there was land available to erect additional buildings as required; but there was no pool of cheap labour waiting to be tapped:

As this town (Watford) will not supply hands sufficient, I have two other small factories at Rickmansworth and Chesham, where I wind the silk by steam power; the power for winding is very small compared with that of throwing it, but it will require about fourteen persons to wind what one hand can throw into organzine;<sup>40</sup>

The mills at Chesham and Rickmansworth worked only during the day, employing 95 and 114 persons respectively, but the figure of 220 persons for Watford must be split between the large Rookery mill, throwing organzine, and a smaller, steam-powered mill. Corroborating evidence for assertions that Shute followed Paumier in working the Rookery Mill in tandem with at least one other smaller mill in

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<sup>40</sup> PP 1834 XX *Supplementary as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire No. 114 Answers of T R Shute, p135

Watford High Street<sup>41</sup> is singularly lacking, and certainly in 1834, Shute does not mention any other mill in Watford although the Factory Returns acknowledge the existence of a second, wholly steam-powered mill, most probably that belonging to Thomas Toppin.

### Thomas Rock Shute

For almost 50 years Thomas Rock Shute ran the Rookery Mill, and for much of that time was the only silk manufacturer of note in the Watford district. The answers he gave before the Factories Enquiry Commission are robust and strongly in favour of maintaining the status quo. Those few witnesses with experience of conditions in his mills spoke of him as a hard taskmaster, but it is doubtful whether conditions at the Rookery, at Rickmansworth, or at Chesham, were any more severe than in other silk mills. Shute certainly considered himself a humane man, abhorring the beating of children,

I do all in my power, by rewards and kind treatment, to prevent the necessity of corporal punishment; but when necessary, I order it to be inflicted with a thin cane only, or by a slap in the face.<sup>42</sup>

Younger employees were so disciplined, but older children and adults were fined on a fixed scale for misdemeanours or causing damage to the silk.<sup>43</sup> The textile factories had a reputation for brutality and violence, and Shute's instructions to foreman and overlookers 'never to flog a child so as to produce marks on his

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<sup>41</sup> Young, *Silk Throwing in Watford*.p.4

<sup>42</sup> PP 1834 XX *Supplementary as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire No. 114 Answers of T R Shute, p.136 A62

<sup>43</sup> PP 1834 XX *Supplementary as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire No. 114 Answers of T R Shute, p.136 A57-8 Similar rules of conduct and penalties were imposed at Halstead, some of which are listed by Adams et al '*Under Control' Life in a Nineteenth Century Silk Factory* p.16

back'<sup>44</sup> find an echo in allegations and incidents nationwide. At a Salford Court William Tabner, overseer at Messrs Lees and Booth was charged with 'beating a young married woman, in a state of pregnancy, while working in the mill.' His statement, while admitting the charge, shows bewilderment and a complete lack of awareness of any wrong-doing: 'Well I will allow that I did hit her with a strap, but not so as to make any mark; it was a very easy blow.'<sup>45</sup> Children that worked at the Rickmansworth and Watford silk mills saw things in a different light. Sarah Sage, aged 18, and Daniel Haynes, aged 15, were among several children and young people who had worked in the silk mills before going to work at the neighbouring Batchworth paper mill of Messrs. Dickinson and Longman, and in 1843 both gave evidence to Major J G Burns of the Childrens Employment Commission.<sup>46</sup> Both preferred work in the paper mill, Daniel commenting 'Before was at the silk mill. Like this work better, they beat me about a good deal there.'<sup>47</sup> Sarah, a rag cutter, is more strongly condemnatory:

Was in the silk-mill before, like this line best; they beats you so there; they beats the little children shameful; my mother took me away; hadn't good health there, have had good health since I have been here.<sup>48</sup>

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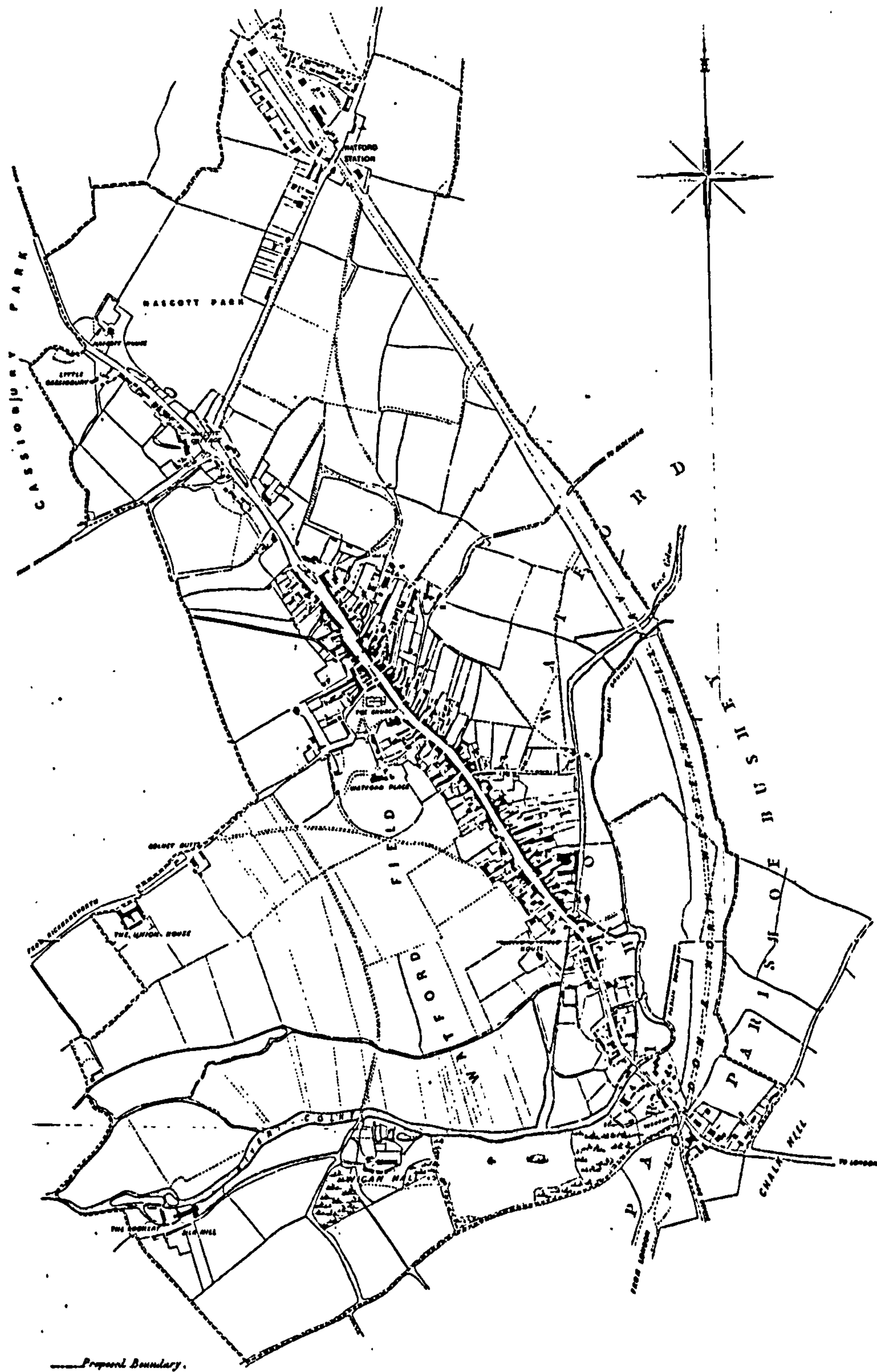
<sup>44</sup> PP 1834 XX *Supplementary as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire No. 114 Answers of T R Shute, p.136 A63

<sup>45</sup> *County Press* Tues. 27 Jan 1857 p.2iii

<sup>46</sup> In the minutes of evidence the name of the mill is erroneously given as 'Blackworth Mill', but is in fact Batchworth Mill.

<sup>47</sup> PP *Reports from Commissioners 1843 Vol III Childrens Employment Commission Appendix to 2<sup>nd</sup> Report, Trades & Manufactures* Part 1: Evidence on the Employment of Children No.210 Examined 21 April 1843

<sup>48</sup> PP *Reports from Commissioners 1843 Vol III Childrens Employment Commission Appendix to 2<sup>nd</sup> Report, Trades & Manufactures* Part 1: Evidence on the Employment of Children No 208 Examined 21 April 1843



Compiled from the Parish Maps by C F Humbert, Surveyor, Watford, Herts.

London: W. & A. G. 1849.

### Watford Local Board of Health District 1849<sup>49</sup>

<sup>49</sup> The Rookery Silk Mill and cottages are situated in the lower left corner of the map, at the very edge of the boundary.

**Community Relations**

Formation of the Local Board of Health in 1850 brought Shute into direct conflict with the local authorities. Clark’s Report to the General Board of Health, written in April 1849 recommended :

The administrative area under the Act, should include the whole town of Watford, and the railway station, that is to say, the town hamlet, parts of Cashio, and Oxhey hamlets in Watford parish, and a part of Bushey parish. Of these, only the town hamlet has petitioned, but the whole are so connected together that it would be quite out of the question, in a measure like that proposed, to divide them.<sup>50</sup>

The Rookery mill, the mill house, and the Rookery Cottages, all in Oxhey hamlet, would fall within the proposed boundaries of the new Board, and all would be subject to the rates set by the Board, proposed at 8d in the pound, for water, and for sewerage at 5d in the pound 'of course levied within the proposed boundary only.'<sup>51</sup>

Clark was frankly appalled at the conditions prevailing in parts of Watford, but saw little hope of an easy remedy:

49. .... I have seen quite enough of the spirit of dissention which prevails in this small town, to apprehend some difficulties in the formation of a Board determined to carry out the provisions of the Act without fear or favour.

.....  
 51 Those who are most largely interested in cottage property of the worst description, and who are enabled by the imperfection of the existing law, to take advantage of the poverty of their tenants, to escape poor's rates, *and who do not possess foresight sufficient to see that economical sanitary reforms will augment the value of their property*, are precisely the class of persons who are generally opposed to any attempt to better the condition of the poor. With

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<sup>50</sup> Clark, *Report to the General Board of Health on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Town of Watford*: 1849 pp12-13

<sup>51</sup> Clark, *Report to the General Board of Health on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Town of Watford*: 1849 p 16

them, or among them, are others who have an interest in keeping up the present high price of gas, which can be done by influence in vestry. It is not surprising that where abuses are so great, and some of them of so long standing, the outcry should be loud against any remedial measure, however efficient or however economical.

.....

These circumstance, he concludes, 'though present in a greater or less degree everywhere, are unusually prominent at Watford.'<sup>52</sup>

Shute was equally appalled at his inclusion within the Local Board area. In January 1850 he attended a public meeting, held at the Rose and Crown Inn by George Clark, in the presence of ratepayers and dignitaries of the proposed area, at which he argued 'at some length' against the inclusion of the mill and his 39 cottages. His arguments did not impress Clark, who, on inspecting the Rookery Cottages reported 'I cannot say that I found the cottages in any such condition as to justify me in recommending that they should be deprived of the supervision of the future local government.'<sup>53</sup> A letter from Shute vigorously defended his position, refuting suggestions that since he employed Watford residents, the mills should be included in the Board district. He sets out his clear opinion that he, in taking between one-third and one-quarter of his employees from the town of Watford, contributed more to the prosperity of that town than he could possibly gain from the town in return. In addition is displayed his bitter resentment at accusations that he or his successors might allow the cottages to fall into such a state of squalor as

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<sup>52</sup> Clark, *Report to the General Board of Health on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Town of Watford*: 1849 . p13 Self-interest on the part of landlords, coupled with an equally ineffectual Board of Health, was indeed widespread: at Luton a 'limp Board of Health' where the initial elected members, many of whom owned slum properties, were all from an anti-Board opposition party, did little to improve the state of rented property. Bunker, *Strawopolis* 1999 pp.57, 92-94. Every town had it's 'Ballard's Buildings' or 'Old Yard', and Bunker gives a description of some of the cramped and hastily built slum dwellings of Spring Place, Bryden's Passage, and Bailey Hill Cottages in Luton. pp.68-70

<sup>53</sup> Clark, *Report to the General Board of Health on a further Inquiry held in the Town of Watford, in the County of Hertford, in consequence of the proposed Alteration of Boundary for the purposes of the Public Health Act, 1848.*

to necessitate the intervention of the Local Board, and his complete lack of faith in that institution:

Would my paying a rate towards the drainage of Watford in any way guard against these contingencies? on the contrary, not one penny, I am certain, would be laid out by the Watford Board on my property, totally detached in locality as I should be from their works; but the money that would be most dishonestly taken from me to assist the owners of house property in discharging the duties incumbent on them, would prevent me from laying out money in improving the condition of my own cottages,\_\_\_ in fact, would be a compromise with the Watford Board to allow my cottages to be in a dirty condition.<sup>54</sup>

On past experience regarding the Watford Vestry, Shute may have had good reason to doubt the willingness, or ability, of the Board to maintain standards, some of the very worst slums of the district being the property of prominent townsmen serving with him as trustees or guardians on a number of local committees and philanthropic boards. By comparison with some of his fellow citizens, Shute undoubtedly considered himself a responsible and caring landlord. In 1834 he had described how he endeavoured to keep the village clean and orderly, ‘... I have the village swept up every week, I permit no filth to be left about, and I suppress drunkenness and immorality as well as I am able.’<sup>55</sup>

If Shute accepted the inevitability of inclusion in the Local Board District, relations remained strained, and he obviously did not trust the Board to address problems, making his complaints direct to the General Board of Health in London. In April 1854 the General Board forwarded to the Watford Board, a letter from Shute ‘complaining of the nuisance at the mouth of the sewer’.<sup>56</sup> The Board resolved to remedy the complaint, but the problem would recur through more than a decade. The floodgates in the mill tail proved another bone of contention that would not go away. In July 1854 Shute agreed to allow the Board use of the water

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<sup>54</sup> Letter from Thomas Rock Shute dated Jan 18<sup>th</sup> 1850 accompanying Clarke’s 2<sup>nd</sup> Report above.

<sup>55</sup> PP 1834 XX *Supplementary as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire Answers of T R Shute, No. 114, p.134



to flush the Watford Field ditch<sup>57</sup> but by August he was complaining of ‘the loss of water at the Floodgate at variance with the terms of the arrangement with him.’<sup>58</sup> An extraordinary meeting was called by the Clerk for the 12<sup>th</sup> September, and attended by Shute, his neighbour Jonathon King of Wiggshall, and a Mr Walker. Here, Mr Shute stated, again ‘at length’ the subject of the complaint and his mistrust of the Board.<sup>59</sup>

Cholera came to Watford that year, but there is no record of it in the Rookery Cottages, although a report delivered to the Board was no more sanguine regarding their condition than Clarke’s had been:

A report from the Surveyor and Inspector of Nuisances dated 17<sup>th</sup> October 1854, on the state of the Cottages at the Rookery was read shewing among other things that there was a great want of ventilation, that the Cottages were very damp, that there was a great want of pure water and privy accomodation whereby the same were rendered very prejudicial to the health of the Inhabitants\_\_

The Clerk was directed to write to the Board of Guardians communicating the above\_\_<sup>60</sup>

March of 1855 saw a further letter from Shute calling the attention of the Board to repair the wall at the tail of the ditch, and at the tail of the corn mill, and in April a further joint complaint from Messrs Shute, King, and Walker regarding the nuisance at the outlet of the sewer.<sup>61</sup>

During the next three years the sewage question dominated Shute’s relationship with the Board. The Earl of Essex had arranged in 1854 to take the sewage, (for use on his land) but now refused to erect tanks of the type specified in the proposed agreement.<sup>62</sup> Matters came to a head in December of 1856 when two

<sup>56</sup> *Watford LBH* 7 April 1854 Vol 1 p144 WBC

<sup>57</sup> *Watford LBH* 27 July 1854 Vol.1 pp 166-7 WBC

<sup>58</sup> *Watford LBH* 18 August 1854 Vol.1 p170 WBC

<sup>59</sup> *Watford LBH* 12 September 1854 Vol.1p176 WBC

Upon inspection, the Board discovered that a dam built by Mr Bromley (of Watford Field House) impeded the water flow to the ditch, and declined the terms proposed by Shute.

<sup>60</sup> *Watford LBH* 18 October 1854 Vol.1 p183 WBC

<sup>61</sup> *Watford LBH* 23 March 1855 Vol.1 p212 & *Watford LBH* 28 April 1855 Vol.1 WBC

<sup>62</sup> *Watford LBH* 28 April 1855 Vol.1 WBC

notices were served on the Clerk to the Board on behalf of Thomas Rock Shute and Jonathon King, giving notice of intended action against the Board regarding the nuisance ensuing from the tanks. In a flurry of activity the Board resolved to ‘...urge the completion of the Engine House by Lord Essex which it is hoped will obviate all cause of complaint’, and to inform the complainants of their actions.<sup>63</sup> Not satisfied with this, the complainants demanded written assurances that the sewage tanks would be covered within a given time, but failing to win anything more definite than ‘as early as possible’<sup>64</sup> two writs were issued against the Board in early January 1857.<sup>65</sup> A deputation of the Board, in the persons of Mr Moore, the Chairman, and Mr J Dyson then waited upon the two litigious gentleman. They had every reason to be irate; the 19<sup>th</sup> December minutes of the Local Board, referred to above, records a request to Mr Pilbrow to ‘have the Tanks covered ... in accordance with the Contract entered into with Mr Green on February 23<sup>rd</sup> 1856’ but it is not until 20<sup>th</sup> February 1857 that tenders for covering the sewage tanks are considered.<sup>66</sup> At the same meeting Mr Sedgewick, Secretary to the Board, was directed to retain Counsel to defend the action brought by Messrs. Shute and King. Subsequently the Board sought a settlement, and in March the action was settled,

.... upon the following terms viz. £5 5s damages in each case, and to pay all costs of expenses as between Attorney and Client. That the Tanks shall be covered over by 1<sup>st</sup> April next and that the Board shall do any other Works necessary to remove the nuisance.<sup>67</sup>

April brought more trouble, and an appeal against the General and District Rates:

The Clerk was directed to write Mr Shute in reply declining to waive the consequence of any delay on his part in appealing against the Rates and that the Board cannot for a moment admit the correctness of the assumption of his statement that their Sewage

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<sup>63</sup> *Watford LBH* 5 Dec. 1856 Vol.1 p289 WBC

<sup>64</sup> *Watford LBH* 19 Dec 1856 Vol.1 p292 WBC

<sup>65</sup> *Watford LBH* 16 Jan 1867 Vol.2 p298 WBC

<sup>66</sup> The tender accepted was that of Mr J Pigg, at £74 10s. *Watford LBH* 20 Feb 1857 p302 WBC

<sup>67</sup> *Watford LBH* 6 March Vol.11857 p304 WBC

Works are the cause of the diseases referred to by Mr Shute as existing at his Village ~

Resolved that a Cheque be drawn for the damages and costs in each of the Actions brought by Messrs. Shute and King as follows:

Damages and Cost of Action	Shute £65 11 0
	King £59 9 0 <sup>68</sup>

Through May, July, and August of 1857 Thomas Rock Shute pursued the matter of the sewage tanks, and the nuisance of sewage in the open ditch, which may well have contributed to the incidence of disease in the Rookery Cottages, despite the vehement denials of the Board. The saga culminated in a final letter from Shute in August 1858, complaining yet once more of 'a stench from the sewage works'. Only now was the Clerk of the Board able to write, as directed, to Mr Shute, and to Mr Smith (of neighbouring Hamper Mill) 'stating that the works at the tanks were now completed and it was confidently expected that all cause of complaint was now obviated.'<sup>69</sup>

It is not recorded that Shute made any further complaint ... until April 1861, when 'the state of the sewage works and an offending smell proceeding from the apertures'<sup>70</sup> caused him to re-open the issue. He had been in dispute with the Board over some matter or other for more than a decade. He had objected at its inception, and found it dilatory and less than competent in execution. Nevertheless, he served with some of the members on committees and on the Board of Guardians, his complaints were founded on real nuisance and hazard to health, and while forceful, his objections have no trace of personal animosity towards any individual Board member. This should be especially remembered when considering the altercation between John Acres, manager of the Tring Mills,

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<sup>68</sup> *Watford LBH* 24 April 1857 Vol.1 p 310 WBC

<sup>69</sup> *Watford LBH* 27 August 1858 Vol.1 pp 361-2 WBC

<sup>70</sup> *Watford LBH* 3 May 1861 Vol 2 p3 WBC

and A. W. Vaisey, Clerk to the Tring Local Board of Health, whose personal animosity overflows into their professional dealings.<sup>71</sup>

Thomas Rock Shute died suddenly in August 1873, while on a visit to Scotland. His obituary in the *Watford Observer*<sup>72</sup> was concisely respectful, but lacked the warmth and affection expressed at the death of John, and later of Charles, Woollam. This may have been the copywriter, but Thomas Rock Shute leaves behind him the impression of a businessman, an autocrat, and a mill owner of the old style. In the course of his 1834 depiction of work patterns in his mills, Shute states of the Rookery, 'The factory has been worked in this manner as long as it has been in my possession, or as long as my recollection can extend to, which is about twelve years.'<sup>73</sup>

The span of his working life saw Watford change from a town in which silk stood on the threshold of dominating industrial production, to a town where silk manufacture held no more than a peripheral role. A respected member of the community, he had served for many years on the boards of several charities. Appointed a Trustee of Dame Mary Morrison's Apprenticeship Charity in 1837<sup>74</sup> Shute was either less conscientious than Paumier, or less able to attend meetings, his name appearing less regularly until after 1842. His last attendance was in April of 1873<sup>75</sup> the year he died. From at least 1842, Shute was also a Trustee of Dame Dorothy Morrison's Almshouse Charity, his signature appearing as one of

<sup>71</sup> Letters of John Akers, Parkes, and AW Vaisey : HRO LBH3 4/41

<sup>72</sup> *Watford Observer* 23 Aug 1873 p.4ii

<sup>73</sup> PP 1834 XX *Supplementary as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire No. 114 Answers of T R Shute, pp133-136 A.27

<sup>74</sup> New Trustees ... appointed 1837

#### Old Trustees

Mr Wm Capel

Mr King

Mr Shute

Mr Thos. Edwd Dyson

The Hon. and Rev. W Capel

Mr Whittingstall

Mr Howard and Mr Finch

Minutes and Accounts of Dame Mary Morrison's Apprenticeship Charity :

HRO D/EX 372 Q6 Frontice piece

All the apprenticeships awarded appear to have been craft based, rather than in mill or brewery. (Whittingstall owned the Watford Brewery, later Sedgwicks, then Benskins)

those approving the account on 12<sup>th</sup> August 1842, with those of William Capel, John Pidcock and Thomas Nicholl. The Trustees of this charity were, with a few exceptions, largely the same men serving as Trustees to Dame Mary Morrison's Charity. His last signature appears in the accounts for 31<sup>st</sup> December 1872.<sup>76</sup> With Edmund Fearnley Whittingstall of Langley Bury and Thomas Edward Dyson of Tolpits, he was also a Trustee of the Watford, Bushey and Rickmansworth Provident Benefit Building and Investment Society.<sup>77</sup>

The Watford, Rickmansworth and Chesham mills passed to James Hart and Son<sup>78</sup> whose Victoria Works in Coventry boasted a factory building 127ft long, 45ft wide and 80ft high. It had five storeys, room for 250 steam power looms, and offered employment to between 800-1000 people.<sup>79</sup> A boom town for silk manufacture during much of that decade, between 1852 and 1857 plans for twelve new factories were passed by the Coventry Local Board, and in the six years between 1851 and 1857 the number of persons employed in factories doubled from between 2,000 and 3,000 to more than 5,000, as did the number of power looms from 1,000 to more than 2,000.<sup>80</sup> James Hart was an important part of this boom, Tiratsoo asserting that

By 1857, in fact, six manufacturers apparently owned and employed between them over one-third of the city's overall 'indoor' capacity. Two years later, Hart boasted that he personally possessed a quarter of all the power looms in Coventry.<sup>81</sup>

The marriage of throwing mill and weaving factory was eminently practical, giving Hart command over the manufacture from grege to finished product,

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<sup>75</sup> *Minutes and Accounts of Dame Mary Morrison's Apprenticeship Charity* :14 April 1873 HRO D/EX 372 Q6

<sup>76</sup> Listed among Trustees: John Dyson, Thomas Nicholl, Robert Clutterbuck, William Capel, John Woodcock, John Pidcock, King, C Dalton, John Finch, Thomas Rock Shute, Whittingstall. *Dame Dorothy Morrison's Charity Account Book* HRO D/EX 372 Q1-3

<sup>77</sup> *Conditional Surrender* : Mr William Body dated 28 March 1849. HRO 74986

<sup>78</sup> *Post Office Directory of Herts* 1878 p626; *Kelly's Post Office Directory of Herts* 1874 p 510

<sup>79</sup> *Coventry Standard* 2 January 1857 p4iv The Victoria works opened, like Redbourn, in 1857

<sup>80</sup> Tiratsoo, *Coventry's Ribbon Trade in the mid-Victorian period : some social and economic responses to industrial development and decay*. p.127

<sup>81</sup> Tiratsoo, *Coventry's Ribbon Trade in the mid-Victorian period : some social and economic responses to industrial development and decay*. p.129

offering too perhaps a better labour supply than would have been available in the environs of Coventry, and ensuring continued employment for the silk throwsters of Watford.

The Rookery Cottages may have been maintained to a reasonable standard during the lifetime of Thomas Rock Shute, but had certainly not undergone modernisation, and nor did they now. The Medical Officers Report of 1877 voiced concerns that a number of houses at the Rookery silk mills had privies that 'communicated with the River Colne' and the Board resolved that notices should be given, 'to put a stop to such communication'.<sup>82</sup> The mills of God and Local Government grind slowly, eighteen months later it was again reported that some cottages at the Rookery 'had all their sewage go direct into the River'<sup>83</sup> and the 'Annual Report of the Sanitary Condition of the Watford Urban District' published on March 13<sup>th</sup> 1880 in the Watford Observer stated

*On Sewerage at the Rookery.*— this evil still remains unabated, the sewage from the Rookery houses still being allowed to run into the River Colne.<sup>84</sup>

The reprieve granted to Watford silkworkers proved temporary, the Rookery finally ceased production in 1881, a bad year for the silk industry generally, during which *The Textile Manufacturer* reported numerous mills for sale that elicited no bids,<sup>85</sup> and recorded trade at Bradford as being so depressed '... that factory operatives are reported as emigrating at the rate of 50 per week. ....Hundreds of persons are out of work, and the majority of the mills are running short time.'<sup>86</sup> In May of 1881 the three mills at Watford, Rickmansworth and Chesham were advertised for sale either 'in whole, or in part'<sup>87</sup> and it seems

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<sup>82</sup> *Watford LBH* 7 December 1877 Vol 3 p278 WCL

<sup>83</sup> *Watford LBH* 2 May 1879 Vol 3 p368 WCL

<sup>84</sup> *Watford Observer* 13 March 1880 p.3ii

<sup>85</sup> Examples: 'The Union Mill, Littlemore, Pudsey, has been offered for sale by auction, but the auctioneer failed to elicit a single bid.' *The Textile Manufacturer* 15 April 1881 p148 i. 'Britannia Mills, Mirfield, now closed, have been offered for sale by auction, but no buyer was forthcoming.' *The Textile Manufacturer* 15 Sept 1881 p344 i.

<sup>86</sup> *The Textile Manufacturer* 15 April 1881 p188 i.

<sup>87</sup> *Watford Observer* 14 May 1881p.1v

most probable that it was at this point that the estate was divided, the three mills following separate destinies.<sup>88</sup>

The Rookery Mill became the Watford Steam Laundry, but on Tuesday 17<sup>th</sup> October 1882, divided into 21 Lots, the Rookery House, 27 cottages, a market garden and two accommodation fields were auctioned at the Rose and Crown Hotel, Watford.<sup>89</sup> Fixtures and fittings of the mill, including spinning, winding and drawing machinery were also advertised, any unsold items to be auctioned on 30<sup>th</sup> October.<sup>90</sup>

## Tring

The Mill at Tring was built in 1824 by William Kay, of Tring Park. He had bought the Tring Park Estate in 1823 from the Trustees of Sir Drummond Smith, at which time he was recorded as being 'of the Mains, Cumberland'.<sup>91</sup> Initially the mill was occupied by his brother, formerly a silk manufacturer in Manchester, then passed to the management of his nephew, Robert Nixon. From 1828 until the annually renewable lease was surrendered in June 1878, the Tring mill, together with a weaving shop in Akeman Street, formed part of the 'empire' of David Evans, a London silk merchant based in Cheapside, where he is

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<sup>88</sup> The mill at Rickmansworth was advertised for sale by auction in 1889, but it is unlikely that the 'valuable FREEHOLD PROPERTY known as 'The Silk Mill' situated close to the high road' was still a working silk mill. *Watford Observer* 21 Sept 1889 p.1ii. Messrs Humbert, Son and Flint announced the results of the auction (16th October) in the pages of the *Watford Observer* on 19<sup>th</sup> October, but the silk mill does not appear either among properties sold, nor those unsold, suggesting there may have been a private sale.

<sup>89</sup> *Sale Prospectus: WCL* Hart appears to have made little impact on the district, the lots advertised as being once the property of the late Mr T. R. Shute.

<sup>90</sup> *Watford Observer* 23 Sept 1882 p.1i & 14 Oct 1882 p.1ii 'Silk working machinery, as fixed and recently working ... The machinery includes Fourteen Double Mills of New Principle Silk Spinning and Throwing Combined Machines, Seven Double Stands of Re-reeling Machinery, Re-drawing Machines, Nine Double Throwing Mills, Spinning Mills, Winding Engines, Tramming Machines, Stuff Stands, Presses, a large quantity of Bobbins, Reels, and Baskets ...'

<sup>91</sup> Cussans : *Grangerized Volumes* HRO D/ECU/7 pp16-17

described in 1828 as a 'Silk Agent'.<sup>92</sup> Chapman concludes that he was the consignee of Far Eastern merchants shipping silk fabrics to London.<sup>93</sup>

The mill was much enlarged during the 50 years of their tenancy, and in 1840 Osborne's Railway Guide gives the number of hands employed as 40 men, 140 women, and 320 children.<sup>94</sup> These are also the figures given in 'an anonymous document of about 1855 in the present firm's records'<sup>95</sup> cited by S. D. Chapman as referring to a silk throwing mill which he believed to be on the Barnes Cray site adjoining the Crayford printing works.<sup>96</sup> From the extract quoted by Chapman this 'anonymous document' is undoubtedly a copy of Osborne's 1840 entry for Tring, in which the author describes a visit to the silk mill. In July 1848 David Evans and Co. acquired the lease of the printing and dying works at Crayford in Kent,<sup>97</sup> and it appears that Chapman has erroneously assumed both that the silk mill was acquired after the printing works, and that the estimated number of employees cited in Bagshaw's 1847 *Directory of Kent*, includes the silk mill workers. Even if the latter assumption were correct, thereby putting the number of Tring employees at nearer 300 than 500, the conclusion that 'The print-works largely employed skilled men, while the silk mill offered employment for their wives and children.'<sup>98</sup> becomes untenable, due to the physical distance between Crayford and Tring. The workforce at Tring was, in any case, overwhelmingly constituted of local people, plus a number of pauper apprentices from London and the neighbouring county of Buckinghamshire. A

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<sup>92</sup> *Pigots's Metropolitan Directory* 1828

<sup>93</sup> Chapman, 'David Evans and Co. : The Last of the old London Textile Printers.' p.42

<sup>94</sup> *Osborne's London and Birmingham Railway Guide*. p.124

<sup>95</sup> Records of the firm of David Evans and Co. are held at Coventry as part of the Courtauld Archive, but these cover only the years from 1927 onwards, long after the mill at Tring was given up

<sup>96</sup> Chapman. 'David Evans and Co. : The Last of the old London Textile Printers.' p.43

<sup>97</sup> There had been silk and cotton printing works in operation for many years at Barnes Cray under Mr Swaisland, and Messrs. Applegath and Co. Applegath employed a great many young people engaged in bandana silk printing, which involved stretching the silk handkerchiefs, preparing them, then printing. He had three places of work: 'one at Crayford, another at Barn's Clay, and one called Saw Mill' This may be the source of the error. They were visited by Major J G Burns in 1843 as part of his inspectorate. PP 1843 Vol. XIV *Childrens Employment Commission* Appendix to the Second report of the Commissioners. Trades and Manufactures p.7-8

<sup>98</sup> Chapman, 'David Evans and Co. : The Last of the old London Textile Printers.' p.43



letter written in 1877 from George Evans, the son of David Evans, to the historian Edwin Cussans confirms the early acquisition of the lease to the Tring Mill, 'some four or five years' after 1824, and the high number of hands employed.<sup>99</sup>

Chapman further surmises that the silk mill was closed down 'probably in the early 1860s, when the Cobden free trade treaty introduced incisive competition from France and made silk throwing uneconomic.' As shown above, the lease of the Tring mill was surrendered in 1878, but the mill continued in production until at least 1889, and John Akers is still listed as Manager of the Silk Mills until 1895.<sup>100</sup>

Nixon, in partnership with a colleague, Richard Moscrop, started a second silk mill at Aylesbury in 1828, where the decline of the pillow lace industry had brought high unemployment into the area, and the Aylesbury parish authorities were willing to give £200 towards the building of industrial mill premises on the site of the old workhouse. The desperate state of the lace trade may be judged from the generosity of the inducement.<sup>101</sup> This Aylesbury mill also passed into the possession of David Evans, and was similarly enlarged. Used solely for weaving,

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<sup>99</sup> Letter from George Evans to Edwin Cussans dated April 9th 1877, pasted into Grangerised Vol. 7 of *Cussans Hertfordshire* between pages 16 & 17. HRO D/ECU/7

... The mill originally started in February 1824 but it did not come into my fathers hands for some four or five years afterwards.

When we are in full work we employ from 400 to 450 hands. It possibly may be of interest to know that all the enclosure in front of the mill and cottage was formerly a reservoir for the water-wheel but has been entirely drained by the main sewer which has recently been made.

<sup>100</sup> *Kellys Hertfordshire* 1895. Listed as 'Silk Throwster' living at Mill Cottage. Census 1891: Tring ED 13, Sched.42

<sup>101</sup> *The Bucks, Beds, and Herts Chronicle* 28 Aug 1824 p.3 iv

Letter dated Aug 21st 1824 from 'A Constant Reader

'... in the same space of time in which twelve shillings could have been earned about twelve years since, five shillings only can now be obtained. Whether this difference arises from a depression of trade or from an unfair advantage taken of the poor by the dealers, I am incompetent to decide. The conduct of the latter in charging exorbitantly for their thread is a subject of great complaint among the Lace Makers. They inform me that they are charged by the Lace dealers no less than 2s 6d for a quantity which they could buy of other persons for 4d or 5d ...'

The following week brought a letter disputing the actual figures quoted above, but corroborating the evidence of hardship among lace workers:

*The Bucks, Beds, and Herts Chronicle* 25 Sept 1824 p.3 iv

Letter from "J. M."

the mill held in the region of seventy steam-powered looms, plus a number of hand-loom, the silk for the operation of which was substantially supplied from the throwing mill at Tring.<sup>102</sup> A wide variety of silk goods were produced, mostly in a finished state ready for sale and it is claimed that 'Aylesbury silk products were exported to Paris, re-imported to London and sold in the shops in the town as best French silk products.'<sup>103</sup> The bulk of the Tring silk, once processed, was sent to the markets of London, Manchester, and Coventry.<sup>104</sup> In the latter city it became part of the ribbon trade, which suggests that this portion, at least, of the Tring output was not organzine of the highest quality.

At Watford and St Albans, the proprietors lived in close proximity to their mills, but David Evans (1791 – 1874) did not himself live at Tring, maintaining only a 'temporary residence'<sup>105</sup> leaving a manager, Henry Rowbotham the superintendent of the works, in authority. Where the Woollam brothers and Thomas Rock Shute corresponded directly with vestries, Local Boards and other official bodies, at Tring it was the manager that dealt with the vestries regarding the allocation of pauper apprentices, the Local Board of Health with regard to water pollution or road widening, and with the landlord and his agent.<sup>106</sup>

In 1872 the Tring Park Estate was bought by Baron Nathaniel Rothschild,<sup>107</sup> 'for the sum of £230,000, exclusive of the furniture and pictures in the mansion, and the machinery of the silk-mill on the estate'<sup>108</sup> and thereafter the silk mills appear in the account books on a fairly regular basis, contributing to the

'He states ~ the decrease to be in the proportion of 12 to 5 ~ whereas it is in that of 15 to 4. He further states that the Dealers sell the Thread as high at present as when Lace was dearer; now the fact is, they only charge two thirds of the price it was sold for twelve years ago. But they still charge too much .... being an excess of upwards of six hundred per Cent.

<sup>102</sup> Parrott . 'Buckinghamshire Silk Weavers'. p.23

<sup>103</sup> Parrott . 'Buckinghamshire Silk Weavers'.p.23

<sup>104</sup> Osborne .*Osbornes London and Birmingham Railway Guide*. p129

<sup>105</sup> Osborne .*Osbornes London and Birmingham Railway Guide*. p.125

<sup>106</sup> The first William Kay died in 1838, leaving the estate to his son William, as tenant for life, with remainder to his heirs male, and thereafter to the testators nephew, Robert Nixon, and niece, Ann Barnes. The second William Kay died in February 1865, leaving his interest in the estate to his wife, Rose-Louise Kay.

<sup>107</sup> Deposit paid 7 May 1872. *Rothschild Archives, A/C Books* : Vol. 20 (1872) p30

<sup>108</sup> *Grangerized Cussans HRO D/ECU/7* p.17

estate approximately £250 per half year, in rent. Sometimes the silk mill rents were grouped in the accounts with cottages, or as in 1877, with the Rose and Crown Inn, the half yearly rent listed as £313 12s 6d to Lady Day, and the mills alone at £256 2s 2d for the six months until Michaelmas.<sup>109</sup> The mill rents fall marginally, to £249 1s at Lady Day 1878, and £243 15s in 1880,<sup>110</sup> but in 1872 the mill was undoubtedly profitable: the sale particulars of the Estate describe the mill, situated between the mansion, church, and gasworks, as in the occupation of Messrs Evans under an agreement for a reversionary lease of 21 years due to expire on 24th June 1872. Under the terms of that lease, rent had been £200 pa, but an offer had been made to renew the lease, at the rent of £350 pa, with all rates and taxes (other than land tax) to be paid by the tenants. A group of cottages yielding rent of £118 14s pa were also held by Messrs Evans as yearly tenants, including five brick-built cottages that had been converted into one, for use as a house for apprentices. The mill itself was brick-built of five stories, 170 feet long and 35 feet wide; it had winding, cleaning, doubling, throwing, and spinning rooms, together with a large staff room and offices. The machinery was still worked by the great water wheel, and supplemented by steam power. Through the centre of the building was a staircase, and a small warehouse adjoining on each floor. Adjoining the main building were the engine house and chimney shaft, carpenters' and mechanics' workshops, a silk washing room, and two warehouses.<sup>111</sup>

The manager at Tring was largely independent, his rule autonomous, and turnover in the post was low. Rowbotham was a native of Macclesfield, and although described merely as 'silk throwster' in the 1851 Census, he had been manager of the mills for more than ten years. Henry Rowbotham was followed by John Acres, the 1881 Census listing two mill managers: George Morton, (33)

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<sup>109</sup> *Rothschild Archives, A/C Books* : Vol. 22 (1877) p40. Entries for 13 June and 6 Nov 1877.

<sup>110</sup> *Rothschild Archives, A/C Books* : Vol. 23 (1878-9) p38 and Vol. 24 (1880-81) p.170. Entries for 25 June 1878 and 28 May 1880

<sup>111</sup> Tring Park Sale Particulars, inserted between pages 16 &17 of *Grangerized Cussans HRO D/ECU/7*

described as 'Mill Manager (Silk Throwing)' lived at Silk Mill House in Brook Street, and John Akers, (50) described as 'Silk Throwster (Manager)' lived at 62, Brook Street. Both men were, like Rowbotham, natives of Macclesfield in Cheshire. Installed as manager before 1871, Akers remained in the post after the departure of David Evans and Co., listed until 1895 in Kelly's Hertfordshire as the manager, then living at Mill Cottage, Brook St.<sup>112</sup> Both played a part in civic affairs, Rowbotham as one of the Tring Guardians of the Poor serving on the Berkhamsted Union Board, and Akers as a member of the Local Board of Health.<sup>113</sup>

Like Thomas Rock Shute, the managers at Tring experienced problems in dealing with the Local Board, and although the majority were settled amicably enough, there is little doubt that matters were complicated by the necessity of dealing with separate landlord, estate manager, tenant, and mill manager, rather than a single owner-manager, as at Watford. For example, a meeting with the Board concerning an agreement whereby the mill would give up the right to water from the horse pond stream, having in exchange, a reservoir for the storage of water to the extent of the area of the silk mill pond, required the attendance of Mr James (solicitor) Mr Thomas Evans (tenant) Mr Parkes (Lord Rothschild's agent) and Mr Akers (Silk mill manager).<sup>114</sup>

Quite apart from every-day problems of water pollution and drainage, there developed a personal animosity between A W Vaisey, Clerk to the Board, and John Akers, which is most visible in their correspondence, and owes much to the existence of a chain of command in the making of decisions. The initial problem was simple: the Board wished to make improvements to their district, beginning with the widening of New Mill Road, aided by the purchase of four cottages comprising Lot 2 at 'Mr Evans' Sale' on 3<sup>rd</sup> April 1883. By 1888 the road

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<sup>112</sup> *Kelly's Hertfordshire* 1895 pp189-190

<sup>113</sup> Akers stood for election in 1877, polling 246 votes as the highest loser, the successful candidates being three farmers, and a draper. However, on the resignation of Mr Joseph Clarke through ill health, John Akers was offered his seat. *Tring LBH Minutes* Vol 2 3 May 1877 p237, 238. HRO LBH3 1/2

<sup>114</sup> *Tring LBH Minutes* Vol 2 7 Jan 1875 p106 HRO LBH3 1/2

widening programme had reached Brook Street, which meant consultation with Lord Rothschild via his agent, Mr Parkes. Having viewed the situation, the Board instructed the surveyor to prepare plans of the proposed widening, a copy of which would be forwarded to Lord Rothschild stating

... that the Board were desirous of completing the improvement as far as the Silk mill previously affected by the gift of land by his Lordship on the other side of the road towards the Gas House and suggesting that if Lord Rothschild would set back the fence as shown on the plan the board would remodel the footway and widen the road making a great public improvement.<sup>115</sup>

Mr Parkes' reply did not offer the required land as a free gift, which was undoubtedly the response hoped for, but offered it upon terms which the Board 'did not feel justified in accepting'<sup>116</sup> although at the beginning of July the Board decided to apply again to Lord Rothschild, to ask upon what terms the necessary lands could be obtained.<sup>117</sup> It was during the March negotiations that relations between Vaisey, Parkes, and Akers deteriorated into real acrimony. On 19<sup>th</sup> March, A W Vaisey, Clerk to the Board, wrote to Mr A T Parkes, accusing his wife, Annie Parkes, of starting a rumour that he, Vaisey, had insulted Lord Rothschild.. The field of battle widened on 21<sup>st</sup> March, when Vaisey also accused John Akers of saying that he, Vaisey, had written an insulting letter to Lord Rothschild. Akers denied any such statement, although he admitted having remarked that in asking a favour, he would have done it differently.

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<sup>115</sup> Tring *LBH Minutes* Vol.5 p.61 1 March 1888 : HRO LBH3 1/5

<sup>116</sup> Tring *LBH Minutes* Vol.5 p.62 16 March 1888 HRO LBH3 1/5

<sup>117</sup>:Tring *LBH Minutes* Vol.5 p.821 5 July 1888 HRO LBH3 1/5

The correspondence between the two became increasingly acrimonious, as Vaisey uttered vague threats, and Akers became increasingly disdainful.<sup>118</sup>

### Mill Hazards

The highest costs in a silk throwing mill were the investment in machinery, and the price of labour. Costs of the latter were reduced to a minimum by the employment of women and children, particularly the ‘apprenticeship’ of pauper children. The work was said to be light and congenial, but the hours were long, and the machinery dangerous. Fire was a particular hazard in textile mills although silk was deemed less of a risk than cotton or flax, since being neither vegetable fibre nor animal hair, silk was non-inflammable. A study of ‘The Fire Hazards Incidental to Silk Mills and Factories’<sup>119</sup> notes that serious fires in waste silk spinning mills had been fairly numerous, where friction from the opening bales, the nails and stones found therein, the tearing of knots, or the contact of hard objects during the beating and rolling of cocoons, could cause a spark, then a conflagration. True silk can withstand up to 300°F without change, and drying rooms were therefore very hot. Netting spread over boilers in the drying rooms could accumulate dust, becoming vulnerable to fire, while the lower grades of silk, particularly that imported from India and China, would contain highly inflammable dry grass, straw, or leaves. As an additional hazard, silk can be

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Tring Mills

March 23/88

Dear Sir,

I have your letter of yesterday ~ when I require your advice for my ‘future guidance’, I may ask you for it, you appear to have departed from the usual custom of a Solicitor by tendering it before it is asked for.

Some portion of your letter assumes the nature of a threat, if meant as such I treat it with contempt.

Yours truly

John Akers

A. Vaisey Esq.

<sup>119</sup> Hoopers, *Silk : Its Production and Manufacture* includes T D Raine: ‘The Fire Hazards Incidental to Silk Mills and Factories’ Undated pp125-129,132

weighted with up to 300% of its own weight in chemical dyes. In throwing mills, steam pipes and timber partitions presented the greatest hazards.<sup>120</sup>

Records have been found of only three fires at the Hertfordshire silk mills, although there may have been others. Within a six-year period the mill at Tring was particularly unfortunate in suffering from two serious and potentially life-threatening fires. Both are well documented, although the first, in January of 1836, was by far the more spectacular commanding great local interest and extensive newspaper coverage. The story had all the elements of an adventure: a careless workman with a lighted candle; the miraculous escape of a large workforce without injury; the spectacle of fierce flames leaping through the upper two stories into the sky; the urgent dispatch of expresses to summon help; the arrival of help in the form of private fire engines sent by neighbourhood residents Lady Bridgewater, and Mr Hay; more fire engines sent to the scene from Aylesbury, Berkhamsted, and Ivinghoe; even a hero, Mr Robert Harrison, who, at great personal risk, not least from the molten lead that rained down upon him, saved much of the moveable apparatus of his department.<sup>121</sup>

Fire was a great hazard to everyone, but few parishes had fire brigades of their own, and as seen here, much valuable time could be lost while engines were brought from neighbouring districts. Wealthy residents found it more reassuring to have their own engines, and were generally ready to aid their neighbours.<sup>122</sup> The fire at the mill began between one and two o'clock on a Thursday afternoon, on the fourth floor of the five-storey building, and raged for eight hours. The entire fourth and fifth floors of the mill were gutted, and production brought to a halt. While the mill and machinery were amply insured, in the amount of £14,000,

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<sup>120</sup> Hoopers *Silk : Its Production and Manufacture* includes T D Raine FCII: 'The Fire Hazards Incidental to Silk Mills and Factories' Undated pp125-129,132

<sup>121</sup> *Bucks Gazette* 30 Jan 1836 p4vi

<sup>122</sup> A fire in one of the rick yards at Pendley Farm, near Tring, in 1832 had also brought neighbours out to help. Buildings and a wagon were destroyed, but Mrs Smith, the tenant of Tring Park 'kindly sent the fire-engine from the mansion and tendered the services of all her manservants'. *Bucks Gazette* 11 Aug 1832 p4iii

to cover the loss, great concern was expressed concerning the consequences of the fire upon the townsfolk and employees.

... the calamity to the population of Tring and the neighbourhood, which mainly depends on these works, is likely to prove most distressing, for it is not expected that the full business of the mill can be brought into operation for three months to come, and in the meanwhile the spring demand will have been furnished from other quarters.<sup>123</sup>

David Evans took the step of publicly thanking, through the medium of the Bucks Gazette, all those that had rendered assistance at the fire. He also used the letter to reassure the public that the damage was substantially less than anticipated.<sup>124</sup> The courage of Robert Harrison had also brought some comfort to the situation:

The property thus saved will enable the proprietor, in the course of a fortnight, to give partial employment to at least 300 of the operatives of their establishment.<sup>125</sup>

It cannot be denied, however, that for the journalists, the fire was something of a 'nine days wonder', and that in subsequent weeks, the newspapers showed far greater, and more sustained, interest in the story of a panther seen at large in No mans land than in the state of the silk manufacture at Tring, or the progress of rebuilding and repair works.

Both fires at Tring occurred at similar times of year, and caused damage of approximately £4,000. The second fire, in the early morning of January 7th 1842 was much less dramatic, leaving the main structure of the mill undamaged, and, as before, there was no loss of life. The fire began in the engine room at around 2am,

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<sup>123</sup> *County Herald* 30 Jan 1836 p.3v

<sup>124</sup> *Bucks Gazette* 30 Jan 1836, Letter dated 28 Jan 1836 p.1v

<sup>125</sup> *Bucks Gazette* 30 Jan 1836 p.4v As an illustration of the dubious reliability of newspaper reportage, it is notable that the *County Press* and the *County Herald* report the fire at Tring in very similar terms, almost as though using the same copy, but differ in three items : where the *County Herald* reports 500 workers, the *County Press* substitutes the figure of 800, in an otherwise identical sentence; the size of the 'adjacent lake of about six acres' from which water was taken to quench the flames, had become 'an adjacent pond, or rather small lake, of about twelve acres'; in similar manner, instead of reaching Berkhamsted 'about six o'clock', Mr D. Evans arrived 'about three o'clock in the afternoon'.

*County Herald* : 30 Jan p.3v & *County Press* : 30 Jan p.2vi



but this time Tring had its own parish fire engine available, and ‘most prompt and efficient means were made to arrest the progress of the flames. The Great Berkhamsted and Ashridge engines arrived about half past four, but the fire had been so far subdued as to render it unnecessary to call any other than the former into requisition. The Aylesbury engines also arrived about five o’clock, but were not called into action.’ Once again, the most serious consequences would be to production, and to the mill employees, as the County Chronicle commented,

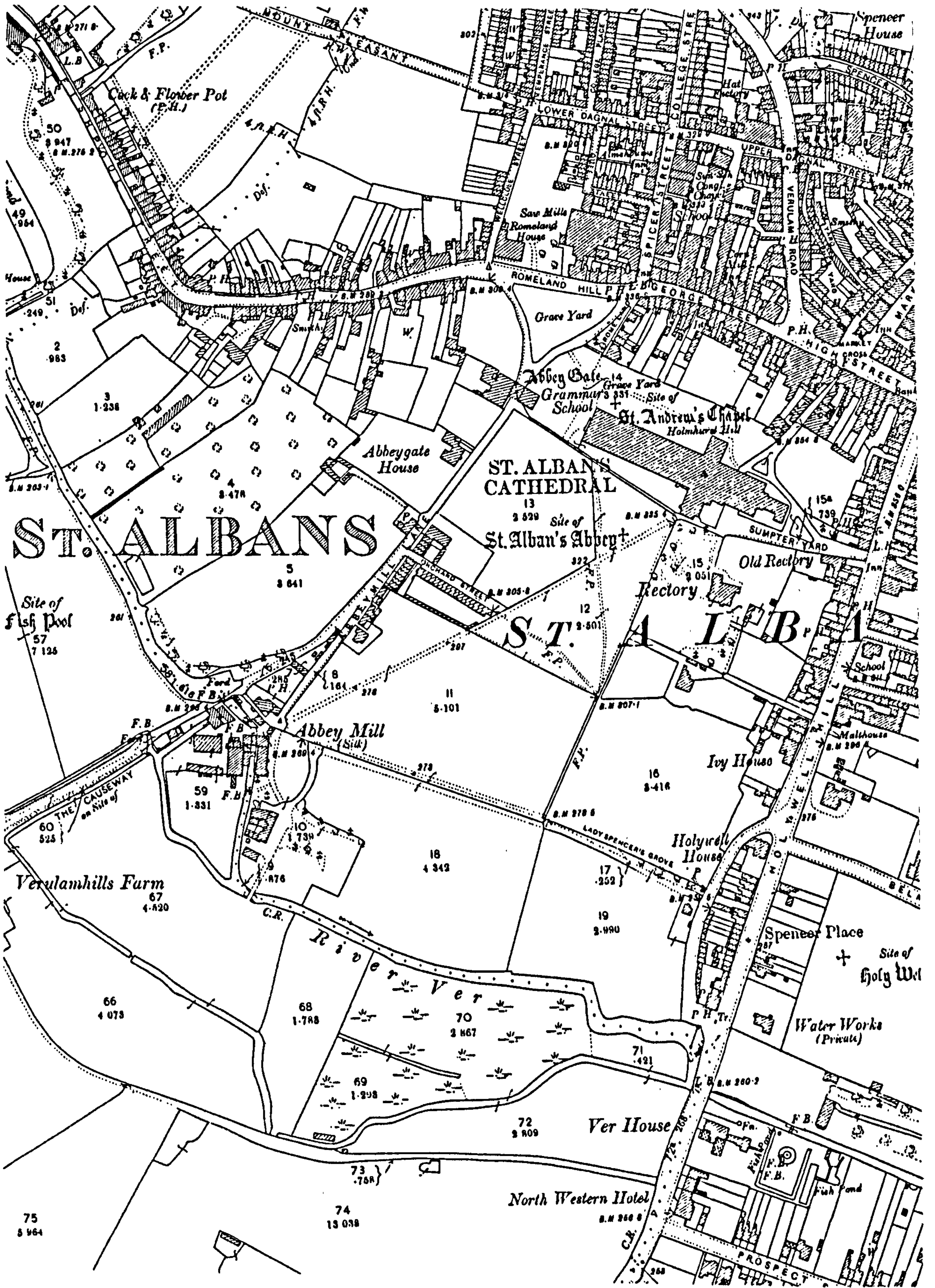
The worst part of the calamity will be the loss of employment to the many poor creatures who were employed in this part of the building, but that number is trifling compared to those in that part which was saved.<sup>126</sup>

The fire at Thomas Toppin’s silk mill at Beechen Grove, in about 1840, was highly dramatic, despite the small size of the mill. Hedged about by residential buildings and stables, the fire at the mill spread quickly, and several horses were burnt to death despite efforts to lead them to safety. ‘... they appeared to be paralysed and would not leave, although they were pulled and chipped severely by men attempting their rescue, who did not give up that attempt until the smoke and flames compelled them to retreat...’<sup>127</sup>

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<sup>126</sup> *The County Chronicle* Tues. 11 Jan 1842 p3v

<sup>127</sup> Williams, *History of Watford and Trade Directory*. p.187



Site of the Abbey Mills at St Albans

## St Albans

The Abbey Mills at St Albans were situated at the foot of St Peter St, on the River Ver, and in the shadow of the great Abbey from which the mill was leased. In 1802 Charles Woollam and his brother John represented the firm of Charles Woollam and Co., together with their two half-brothers, the Messrs Barber, who appear to have taken little active part in the day to day management of the firm. Their links to the silk industry were hereditary, since their father had for many years previously been connected with the wholesale trade in raw and thrown silk<sup>128</sup> This first Charles Woollam saw the conversion of the Abbey Mills to silk throwing, and the establishment of his family as respected citizens of St Albans, before his death, aged 58, in May of 1836.<sup>129</sup> He had taken a close interest in the affairs of St Albans, serving as an Overseer of the Poor in 1806<sup>130</sup> and although he declined to serve, was elected an Alderman in 1812.<sup>131</sup> He made no further recorded move towards public office until 1835, when he polled 190 votes but failed to be elected under the provisions of the new Act. If his part in local politics was less conspicuously high profile than that of his nephew and namesake, Charles had nevertheless participated fully in civic life, and had moved in aristocratic and influential circles, winning the respect and esteem of such as Lord Melbourne.<sup>132</sup> In June 1832 he chaired a public meeting at which it was decided to celebrate the passing of the 1832 Reform Act by holding a public dinner for the poorer inhabitants, to be paid for by subscription.<sup>133</sup> The Reform Festival at

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<sup>128</sup> *Herts Advertiser & St Albans Times*. 6 Feb 1915 p4ii

<sup>129</sup> Extract from the *Register Book of Burials* in the Parish of St Albans 1836 HRO D/EB2050 BI/2 A brief notice appeared in the *Reformer* of 24 May 1836 'On Monday 16<sup>th</sup> inst. Charles Woollam Esq. (proprietor of the silk mills), St Alban's, Herts.' *Reformer (& Herts Beds Bucks etc. Advertiser)* Tues. 24 May 1836 p.3iii

<sup>130</sup> *Vestry Minutes*, St Albans Abbey Parish. Nomination of Charles Woollam as Overseer 8 April 1806, signature as Overseer, 9 May 1806 onwards. HRO mf.523

<sup>131</sup> Gibbs, *Corporation Records of St Albans* Courts held 11 July & 8 Aug 1812 pp163, 164

<sup>132</sup> *Letter of Mrs Charles Woollam to Lord Melbourne* 11 March 1841 HRO D/ELB F39/30-31

<sup>133</sup> *Bucks Gazette* 16 June 1832

St Albans included a procession and sports held at Barnards Heath. The dinner, for 3,500 poor inhabitants, was held in St Peters Street and was a lavish affair at which was consumed 400 stone of meat, 250 puddings of 5lb each, and a quart of beer to each individual. Each table was presided over by a local dignitary, one of whom was Mr Charles Woollam Esq.<sup>134</sup>

His death left the fortunes of the company in the capable hands of his brother, John Woollam, but the time was not an auspicious one for the silk industry. The London silk manufacturers were in such distress that the Queen, in response to their plight, was impelled to order sufficient silk to make twelve dresses, expressing the added hope that her patronage would encourage her countrywomen to follow suit, and buy English silk.<sup>135</sup> Times remained uncertain, Robert J Saunders, Inspector of Factories<sup>136</sup> having visited mills in his district including those at St Albans, Hatfield, Rickmansworth, Tring, Watford, and Chesham, wrote in his report for the quarter ending 31<sup>st</sup> March 1840,

The prosecutions and convictions of the last quarter have been very trifling indeed. The law is better obeyed, partly because a stricter inspection and supervision has been exercised during the last two years, but perhaps still more at the present time from the depressed state of trade. The distress is deeper and of longer continuance than has ever been experienced, and the Superintendents report that the factories have so little employment that there is not the least apprehension of overwork, as there exists no inducement to employ young persons or children beyond the restricted hours.<sup>137</sup>

The Woollam family were not untouched by the problems besetting the silk trade, in March of 1841 Charles' widow wrote to Lord Melbourne, enclosing a letter that she had received from her brother, Thomas Ward 'a sufferer of the late changes in the Silk Trade'. Ward had been experiencing difficulties for some time, and now sought recommendation for the office of sub-Inspector of Factories,

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<sup>134</sup> *Bucks Gazette* 30 June 1832 p 4iv

<sup>135</sup> *County Herald* 11 March 1837 p2v

<sup>136</sup> Saunders' district included mills in Berkshire, Derby, Hants, Staffs, Wilts and Yorks as well as Bucks and Herts.

which carried a small, but necessary, salary.<sup>138</sup> In addition to 'applying to my friend Mr E A Sanford and my very kind Neighbour The Right Hon<sup>ble</sup> H Labouchere to recommend me to notice in the proper quarters' Thomas Ward asked his sister to use on his behalf whatever influence she or her late husband may have had with Lord Melbourne:

... in considering whether I could with propriety look for any other aid it has occurred to me that if you could prevail on yourself to write to Viscount Melbourne recalling to his recollection not only his own kindly feelings toward your late Husband, but the peculiar marks of friendship with which you were honoured by the old Dowager Countess Spencer and her Granddaughter Lady Caroline, his Lordship would be very likely to second the friendly exertions of Mr Labouchere in my behalf...<sup>139</sup>

### Redbourn.

In a final burst of optimism and expansion, the steam-powered throwing mill at Redbourn was built in 1857, a manager living in premises next to the mill.<sup>140</sup> Two years later, in 1859, John Woollam took his son Charles into partnership.<sup>141</sup> The formal agreement allowed for 18 years duration, and it is clear that it was also planned as a training period for the young Charles who would be expected to eventually become head of the firm. Charles was not an only child, but neither his brother, John, nor sister, Catherine, took any active part in the business.<sup>142</sup> The

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<sup>137</sup> *Reports from Commissioners: Factories* PP 1840 Vol XXIII p8

<sup>138</sup> In 1838 Leonard Horner, Inspector of Factories with about 1700 factories spread over a wide district and each employing from 600 to 1400 persons, had two superintendents at a salary of £350 p.a. and two at £250 p.a. under him. *Returns of the number of superintendents and salary employed under the provision of Act 3 & 4 Will. 4, c, 133.* PP XLV p.69 An experienced Inspector of factories such as Horner, Alexander Redgrave or Robert Baker was by 1870 in receipt of a salary of £1,000, but would have in his allotted district perhaps as many, or more than, 15,000 factories, mines, Unions, Workhouse schools and elementary schools. Inspection of many of these institutions would necessarily devolve upon the sub-inspectors. (Alexander Redgrave: appointed May 1852; Robert Baker: appointed June 1858) PP 1870-71 *Returns Relative to Inspectors p*

<sup>139</sup> *Letter of Thomas Ward to Mrs Charles Woollam*, 6 March 1841 HRO D/ELB F39/30-31

<sup>140</sup> The mill was built on land bought from George Burchmore, at a cost of £135, with the sum of £5 as compensation to George Webb, who had farmed the land. HRO D/EB 1873.T.3

<sup>141</sup> *Articles of Partnership* dated 31 Dec 1859 HRO D/EB2050 B1

<sup>142</sup> In 1871, when the affairs of the late John Woollam were being settled, the Reverend John Woollam was recorded as living at Yorkhill in Hereford, and Catherine Woollam at Southwell in Nottinghamshire. HRO D/EB2050 B1/8

partnership into which Charles entered was the firm of 'John Woollam and Son', to be carried on under that style at the Abbey Mills, and at Redbourn 'or in such other place or places of business as the said Partners shall from time to time mutually agree upon.' The articles were designed for two active executive officers of a company, working together in close co-operation. All day to day decisions were certainly to be shared, even if long-term policy issues might remain with John Woollam. Article 9 made provision that 'neither of them, the said John Woollam and Charles Woollam shall or will take any apprentice or hire or dismiss any Clerk Traveller Workman or Servant in the business of the said Partnership without the consent of the other of them.'<sup>143</sup> Both mills were modern and extensive; in 1856 a Phoenix Assurance insurance policy in the sum of £4000 was held by John Woollam in respect of the Abbey Mills, of which the greatest sums covered the timber-built winding rooms, (£550) and the machinery therein (£650). Machinery in the throwing mill and 'clockmakers work' stood next in importance. £525 covered winding engines, cleaners, spinning mills, doublers, throwing engines, and all other mounted machines, while a further £600 covered carding engines, mules, doubling frames, and reels. Buildings constituted a comparatively minor part of the insurance cover, apart from the main dwelling house, which was insured in the sum of £400. The mill building itself, brick-built and slated, like the main house, was insured for £335, which seems a conservative amount, as against the £200 for the timber-built apprentices house, and £200 for the brick-built silk spinning mill.<sup>144</sup> The policy shows clearly the most precious and commercially valuable assets of the company, and equally clearly emphasises those elements that would be most difficult to replace quickly.

Despite the presence of an 'apprentices house' there is no clear evidence to confirm the residence of apprentices on the mill premises, nor of Woollams having

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<sup>143</sup> *Articles of Partnership* dated 31 Dec 1859 HRO D/EB2050 B1/7

<sup>144</sup> *Insurance Document* dated 12 July 1856: Phoenix Assurance Policy No. 1124493 HRO D/EB2050 B1/2 The sum insured, £4000, appears to have been a standard rate, corresponding exactly to the sum insured of the mill at Tring. Insurance was expensive, the annual premium totalling £17 13s 5d. of which £6 was duty.

taken pauper apprentices from outside the district during this period. It is most likely that the apprentice house was for daily, rather than residential, use.

Under the terms of the partnership, allowances to be taken from company profits each month for their own use were also noted, John in the sum of £30, and Charles, since he still lived at home in his fathers' house, £10, on the first Monday of each month. He was also bound to pay an annual allowance of £300 to his mother and sister during their joint lives, or a single payment of £3,500, should his father die. This clause was deleted, however, in June 1863, '... it being the express intention of the parties hereto that the said Charles Woollam shall not under any circumstances be liable to pay either such Annuity of Three hundred pounds or sum of Three thousand five hundred pounds as in the said Clause mentioned.' It is to be presumed that John Woollam had made other provision for his wife and daughter, trusting his son to oversee any arrangements. It may also have been in recognition of the coming marriage of Charles Woollam to Miss Mary Elliot which took place in October 1863.<sup>145</sup>

### Prosperity and Transition

It may seem that these years between 1850 and 1870 when the numbers employed in the Hertfordshire silk mills were at their peak, were another golden age for manufacturers, but employment figures take no account of short-time working, as attested by brief comments in local newspapers: in the St Albans district, as elsewhere, there were times when full-time employment was regarded as news, 'The employees at the silk mills this week resumed their full time of work; A very pleasing change to many families in our locality.'<sup>146</sup>

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<sup>145</sup> Mary was the only daughter of Mr Edward Eden Elliot of the Bombay Civil Service. He was Accountant General at Bombay, and related to the Earl of Minto. *Herts Advertiser and St Albans Times* 28 March 1925 p.6v Charles and Mary were married on October 14<sup>th</sup> 1863, living first at Holywell Lodge, then following the death of John Woollam, for many years at Abbey Mill House, removing to Abbey Gate when the Silk Mills were sold to J. Maygrove & Co.

<sup>146</sup> *Herts and Beds Gazette* Saturday 18 Jan 1862 p.3iii

At the same time, St Albans was experiencing great, if temporary, prosperity in the straw manufacture, and any silk workers out of employ having experience of straw work would have found ready employment. It was reported in March 1862 that in St Albans 'the trade of the town was unusually brisk':

One opulent firm have announced that they want 500 hands immediately, good prices and constant work. Another firm has advertised in a similar manner for 100 extra hands; and in the windows of almost every establishment in the town are to be seen advertisements. There appears also to be considerable stir in the weaving department, for the elegant designs of which the town is noted. The Brazilian hat trade, too, is busier than it has been for a considerable time.<sup>147</sup>

Indeed, the silk mills may have lost a number of workers to the straw plait trade, the demand for straw and Brazilian hats, caps, and bonnets, remaining so high, that manufacturers found it impossible to obtain sufficient hands. Work was there in abundance, so that 'those who labour are employed early and late'<sup>148</sup> high demand doubtless increasing remuneration in the short-term.<sup>149</sup>

John Woollam died on June 11<sup>th</sup> 1869, in his eighty-first year, his simple funeral in the Abbey and interment in the family vault in the Abbey churchyard sufficiently important to warrant a full account in the *Herts Advertiser and St Albans Times*.<sup>150</sup> The mills were certainly prosperous, his share of the business partnership then valued at more than £13,000<sup>151</sup>

Charles Woollam the younger took a more obviously active role in local government, and figures prominently as a public benefactor, from minor gifts of a

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<sup>147</sup> *Herts and Beds Gazette* 8 March 1862 p3ii

<sup>148</sup> *Herts and Beds Gazette* 31 May 1862 p3ii

<sup>149</sup> By 1867 there would be appeals from poor straw-plait workers. *The Builder* Vol XXV Nos 1292: 9 Nov 1867 p 825 & 1299: 28 Dec 1867 p 946 It was reported that a number of female plait workers from Luton, Newport Pagnell and Tring, experiencing great distress, had gone 'to Manchester and other large towns, to learn the weaving business, in order to save themselves from starvation.'

<sup>150</sup> *Herts Advertiser and St Albans Times*. Sat. 19 June 1869 p.5ii



water fountain (1871) and subscriptions to the new public Library, to the almshouses at Redbourn, erected by his widow in his memory. In November 1872 Charles Woollam became Mayor of St Albans. During his long life he also gave land to the city, in 1898 giving the Victoria Playing Fields in Verulam Road, and in 1913, three acres in the Fleetville district. He served the city consistently and conscientiously as a magistrate, as one of the original members of Hertfordshire County Council, and as Chairman of the Visiting Committee of the County Asylum at Hill End.<sup>152</sup> Perhaps the high point of his civic career came with the presentation to him, in July 1905, of the Freedom of the City. Only the third person to be so honoured by the Corporation, reports assert that the award was a popular one, the open ceremony attended by a large number of citizens.<sup>153</sup> The award conferred no privileges, but acknowledged the 'hearty goodwill and appreciation of services well and truly rendered'.<sup>154</sup>

Of all the Hertfordshire silkmasters, he most embodied the ideal of benevolent patriarchy, watching over his workpeople, and serving the community. He was also the most closely linked to the district in which his mill was located, and in which he lived. Although not actually born in St Albans, he was an old boy of the St Albans Grammar School, and served for many years on the Board of Governors, taking a close interest in the development of the school.<sup>155</sup> Relations between the mill and the school were not always harmonious, and as mill owner, school governor, and Magistrate, Charles Woollam was called upon to arbitrate

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<sup>151</sup> *Covenant by Mr. C. Woollam for securing payment of £13,098 the unpaid part of the purchase money of his late Fathers share in their partnership business ... dated 25 Nov. 1871 HRO D/EB 2050 B1/8*

<sup>152</sup> He retired as Chairman in November 1911. He is also remembered, in company with a host of other Hertfordshire worthies, in *The Hertfordshire Hunt*, a long narrative poem published in 1880, the proceeds of which were donated to the Royal Agricultural Benevolent Institution. p13

<sup>153</sup> *The Hertfordshire Standard*, Friday 28 July 1905 p8vii recorded:

'A very pleasing feature in connection with the ceremony was the conspicuous interest displayed by the public generally, who flocked to the Assembly-room, and this, after the invitation extended, clearly demonstrated the entire approval of the ratepayers of the course adopted by the Corporation in recognising the valued services of a devoted public benefactor.'

<sup>154</sup> *St Albans Gazette* 2 Aug 1905 p5ii

<sup>155</sup> In 1869 he, together with Mr I. N. Edwards, and Mr T. W. Kent (Brewer & Malster of London Rd.) were asked to form a committee in order to collect subscriptions towards the transference of the Grammar School *Herts Advertiser & St Albans Times* August 14 Aug 1869 p5i-iv

between warring boys. Stone throwing appears to have been a popular activity on both sides, and there is little to choose between the behaviour of the mill boys and the schoolboys. All appear to have been subject to similar censure, there being no indication that influence ensured greater leniency for either group than might otherwise have been the case.<sup>156</sup> Similarly at Watford, boys were accused of damaging property while playing in neighbouring fields, a particular case being brought to court in February 1862 against James Allen 'a little boy' charged with malicious damage to a fence, the property of Jonathan King. Despite the deposition of PC Henry Archer, that he had seen the boy destroying the fence in order to get into the adjoining meadow, the case was dismissed, a witness stating that a gap in the fence already existed, and 'the boys who work at Mr Shute's silk mill were in the habit of playing in the meadow.'<sup>157</sup>

It was no easy task controlling so many young employees outside work hours, although it is plain that rules were enforced both on and off the mill premises. In order that the employees at the Abbey Mill returned home in an orderly manner, there was a rule that the boys should go up to the town through the fields, and the girls by the lane. The Borough Petty Sessions of 1873 record an incident in which three girls going home from the silk mills were snowballed 'very roughly' by a group of boys who had apparently gone through the fields, then cut across by the cathedral and gatehouse, 'the old gaol' to ambush the girls at the top of the lane. The girls, Susan Lawrence, Julia Griffiths, and Rosanna Warby, threatened to tell Mr Woollam, upon which the boys 'then made use of bad language, and threatened to cut their eyes out.' Such larks were obviously not uncommon, but this case had been brought to court. Charles Woollam 'had usually dealt with these cases by keeping the boys in at meal times, but as they had declined to be punished by him he thought that they ought to be punished by the magistrates'. The result was a fine of 1s, with 1s 6d costs, or seven days

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<sup>156</sup> *Herts Advertiser & St Albans Times* 16 March 1872 p.5v Conflict of interests meant that Woollam always left the Bench when such cases were tried.

<sup>157</sup> *Herts and Beds Gazette* 29 Feb 1862 p.3iii

imprisonment.<sup>158</sup> The severity of the punishment may be gauged by comparison of the fine with silk mill wages<sup>159</sup> or the price of milk, which then stood at around 3d per quart.<sup>160</sup>

The boys were Charles and William Allen, William Griffiths, Charles and Henry Furness, and William Tebboth, aged about 13. In 1871 the Tebboths lived in Watsons Row, and although William aged 11 was still a scholar, his elder sister Sarah, aged 14, was already a silk throwster. Mother was absent, but Sarah's earnings must have been very necessary, since Thomas Tebboth, a baker by trade, was out of work.<sup>161</sup> The Allen brothers were slightly younger, aged 10 and 8, while the Furness brothers were older, being 14 and 12. The girls were of similar age, Rose Warby the eldest at 14, Susan Lawrence 13, and Julia Griffiths, 12. The addition of almost two years, from the April census of 1871, to the snowball fight in February 1873, brings them into the category of adolescents, rather than children, but it was not an assault carried out either by, or upon, strangers. All three girls, and the Furness boys, were already working in the mill in 1871, and all living in close proximity to the Allens, so it is a fair assumption that they were well-known to each other, and that there had perhaps been past provocation on both sides.<sup>162</sup> The snowball fight was a minor disciplinary matter, but potentially serious crimes also came within the purview of factory owners and their managers. Henry Rowbotham at Tring was confronted with a much more serious breach of conduct by an operative. The assault upon one of the young female apprentices by an elderly male workman was reported to the Governors of the Poor at St Margarets, (some four months after the event) by visiting churchwardens and overseers. The assault may well have been sexual, since the man was discovered

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<sup>158</sup> *Herts Advertiser & St Albans Times* 8 Feb 1873 p6i 'The Bench considered that the boys had used the girls very badly, and inflicted a fine of 1s., and 1s 6d costs, or seven days imprisonment in default.'

<sup>159</sup> See Appendix III p.346 Silk Mill Wages

<sup>160</sup> *Herts Advertiser & St Albans Times* 13 Dec 1873 p6iii: report of rise in price of milk from 3d to 4d per quart.

<sup>161</sup> *Census 1871* St Albans ED3 Sched. 300

<sup>162</sup> *Census 1871* St Albans Dist. 9 Schedules 333, 353, 365, 368. Dist 11 Sched 104. The Furness family are recorded as Furnis in the 1871 Census enumerators book

by his own boasting, rather than through any complaint of the girl or visible marks of violence upon her. Conceding that David Evans and Co. had acted most properly under the circumstances, the report records that as a result, the man spent four months in gaol, although finally acquitted, and was dismissed from his employment of twenty-five years, while surveillance of the girls was intensified.<sup>163</sup> Dismissal seems particularly hard since the man was acquitted. There appear to have been few such serious incidents recorded with regard to the Hertfordshire mills, and factory theft appears also to have been low.

Theft of silk from the mills could have constituted a most serious problem, and in some mills operatives were searched at intervals to prevent the smuggling out of the easily concealed skeins. The chance of being caught, once outside the factory, must have been low and in one publicised Watford case at least, the thieves were apprehended almost by accident. At the Petty Sessions of 21<sup>st</sup> Feb. 1871, '*Mary Bolton, Dorcas Bolton, Sarah Bolton, and James Bolton* were charged, the two former with stealing a quantity of waste silk, the property of Mr T. R. Shute, and the two latter with receiving it knowing it to have been stolen.'<sup>164</sup> Mary and Dorcas worked at the Rookery mill, and at least part of the stolen silk, valued at 3s, appeared to have been cut from the bobbins. Two police constables, Purkis and Lee, had called at their home intending to question their father, James Bolton, and brother, Mark, regarding some 'stolen fowls'. Mark, with a guilty conscience, at first attempted to use a false identity, but it was the suspicious behaviour of the women, who undoubtedly feared a search of the premises, that alerted the constables to the possible presence of other stolen goods in the house. With clumsy furtiveness Mrs Bolton and the girls attempted to remove the silk to a neighbour's house, and burn it. Prosecution followed, Mary and Mrs Bolton being found guilty and sent to prison for two months; Dorcas and Mr Bolton acquitted due to lack of evidence; Mark committed on two warrants. The census of 1871,

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<sup>163</sup> *Minutes of the Proceedings of the Governors of the Poor, 1851 St Margarets Westminster Report of the Churchwardens and Overseers visit to the Apprentices and Children on probation at Tring Mills, Herts 20 March 1851. pp.284-50 CWA E5219*

<sup>164</sup> *Watford Observer* 25 Feb. 1871 p.4vi

taken in April, during the enforced absence of Mrs Bolton and Mary, adds a codicil to the story. James Bolton, described now as a 'well sinker' is to be found living in Farthing Lane with his daughters Dorcas, 16, Margaret, 11, and Jane, 10. Dorcas has undoubtedly been dismissed from the mill, and gives no occupation, but her sisters are both listed as silk winders, indicating that the wrath of Thomas Shute was not extended to the younger members of the family.<sup>165</sup> The earning power of each family member was vitally important; Sarah Bolton's appeal to Constable Purkis at the time of their arrest was as much in defence of the family income as in defence of her daughters.

She shrieked out, and Mary Bolton clung to her neck, when the silk dropped from her dress, and part fell from her pocket. It was then she said "Don't take that, it will ruin my poor girls."  
 ..... I took possession  
 of the silk, upon which Mrs Bolton said "You can look all over the house; but pray don't take the silk, for Mr Shute will discharge the girls, and my bread will be gone." Police-constable Lee took some silk from the daughter.<sup>166</sup>

## Conclusion

Engels unequivocally condemned the textile factory and mill owners of England as oppressors of the poor, but this is not a picture that accurately portrays the mill owners of Hertfordshire. While it is not possible to subscribe wholeheartedly to the 'cheerful' school of Clapham, Chaloner, Henderson, and their successors, so scathingly denounced by Hobsbawm<sup>167</sup> neither is it reasonable to accept unquestioningly the condemnation of this early industrial period as one of bleak despair, slavery, and suffering. The mill proprietors were businessmen, neither ogres nor saints, their aim to make a profit on the production of commercial goods, to keep costs low, and to maintain a reasonably efficient

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<sup>165</sup> The Boltons remained in Farthing Lane until at least 1881, when James was described as a general labourer. *Census: 1881 Piece No.1437 Dist 7. p19*

<sup>166</sup> *Watford Observer* 25 Feb 1871 p.4vi

workforce. It was not in their interests to alienate the workforce to the extent that employees were unable or unwilling to work, and there is certainly no evidence of such malicious ill-treatment in the Hertfordshire districts.

Three long-established silk mill proprietors died within a five-year period, all three mill networks changing hands at a critical time for the industry between 1869 and 1874.<sup>168</sup> Control of the mills of John Woollam and David Evans remained within their respective families, those of Thomas Rock Shute passing to strangers having little or no connection to the district. With the exception of David Evans, the mill proprietors, themselves originally strangers, had become closely integrated into local parish life sitting on committees and charity boards, holding posts in local government. Each governed in their own style, but if the discipline in the mills was strict, there was also respect, and at St Albans real affection for the master.<sup>169</sup> The Woollam family best represented the patriarchal, philanthropic ethos of the manufacturing elite, although without the financial or moral control exercised by Owen at New Lanark or Courtauld at Halstead. None of the Hertfordshire mill proprietors had the stranglehold on employment prospects necessary to control an entire community, but they were influential citizens, and their contribution to the local economy was generally beneficent.

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<sup>167</sup> Hobsbawm, *Labouring Men : Studies in the History of Labour*. p106

<sup>168</sup> John Dickinson also died in 1869, aged 87.

<sup>169</sup> On the occasion of his retirement in 1902, the workforce presented Charles Woollam with a gold mounted walking stick, and Mrs Woollam with an ivory handled paper knife 'in acknowledgement of their great kindness and thoughtfulness for their welfare in the past and particularly for their future.' *Herts Advertiser and St Albans Times* 6 Feb 1915 p5iii

## CHAPTER 7. CHILDREN AND THE POOR.

The question is not whether Factory children are as well off in all respects as the children of parents who are themselves living comfortably, but whether they are made better or worse by their factory employment? Compare them with the children of the poor at other employments, or those who can find none. Do not attempt to compare them with those from whom their situation is wholly different, and ever must be different.<sup>1</sup>

*Letter to the Right Hon. Lord Ashley 1833*

The poorer inhabitants derive employment in a considerable degree from the manufactories; three large silk mills having been erected upon the river Colne in the vicinity of the town [Watford].<sup>2</sup>

*G. A. Cooke c.1805-1810*

### Child Employment

Why was the employment of children so important? It must be recognised that the actuality of children working was not new to the nineteenth, nor even the eighteenth century. The industrial revolution did not suddenly draft children into the workforce, despite Cunningham's comment that 'Potentially industrialization offered a solution to a problem which had long irked the elites of Europe: the idleness of children.'<sup>3</sup> Certainly the surroundings and conditions of mill and factory were different, but separation from home and family was less of a novelty than may be at first supposed. Young children did help their parents at home; the weaver's children would load the quills, the straw plaiter's daughter learn the skill as soon as her fingers could twist the straw, and the blacksmith's son become his father's apprentice, but the farm labourer's son might be a farm servant living-in elsewhere, and daughters in domestic service generally lived away from home and parental control. The difference, as noted by historians such as Hopkins<sup>4</sup>, was that

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<sup>1</sup> *Letter to the Right Hon. Lord Ashley, on the Cotton Factory System, and the Ten Hours' Factory Bill* Kirkman Finlay, Esq. 1833

<sup>2</sup> *Cooke Topographical and Statistical Description of the County of Hertford.* p.23

<sup>3</sup> *Cunningham, Children and Childhood in Western Society since 1500.* p.87

<sup>4</sup> *Hopkins, Childhood Transformed.* p.87

with the advent of the factories and mills, the working role of children became more visible. Even as the mill buildings stood out from the surrounding landscape, so groups of children or 'young persons' collected in one place, some of them perhaps pauper children from another parish, living in dormitories under the care of a matron, as did those at Tring, were more obvious to the passing observer than the hidden homeworkers.<sup>5</sup> In a domestic or home environment, no one could tell how frequently, nor for how long the children worked, nor the conditions under which they laboured. These factors were the sole responsibility of parents.

Hair suggests that constraints on child labour existed long before the child protection acts of the nineteenth century, new industries actually offering fewer work opportunities for children than in traditional ones.<sup>6</sup> While this is open to debate, and must depend very largely on regional circumstances and interpretation of the term 'scholar' in the census returns, there is evidence, particularly in a county like Hertfordshire, where cottage industry involved a large sector of the child population, to support his view that most Victorian parents chose both schooling and work for their children: 'By the age of 14, very few children had *never* been gainfully employed full-time; and very few had *never* had any form of schooling'.<sup>7</sup> School was attended in slack seasons, or when parents could afford the few pence to pay, and sometimes this might entail job-sharing between siblings.<sup>8</sup> Lace and plait schools, notorious as they were for lack of learning other

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<sup>5</sup> Travellers remarked on the sight of these children, which suggests that such arrangements were still comparatively novel.

<sup>6</sup> Hair, 'Children in Society 1850-1980' p.53 Horrell and Humphries too, question whether 'industrialization increased childrens' earning opportunities, enabling them to contribute more towards the family budget as industrialization proceeded' coming to the conclusion that the importance of children's earnings decline, particularly after 1840. 'The Origins and Expansion of the Male Breadwinner Family: The Case of Nineteenth-Century Britain' Horrell and Humphries *International Review of Social History* Supplement 5. Vol 42 1997

<sup>7</sup> Hair, 'Children in Society 1850-1980' p.52

<sup>8</sup> Eli Crutchfield, aged 10, worked at Hamper Mill, the paper mill closest to the Rookery silk mill, and gave evidence to Major J.G. Burns : '... my brother and me takes turn slice drawing, one goes to school while the other works. ... Come to work at half-past five, leave off at six mostly. ... Earn sometimes 4d a day.' (No. 217) *PP. Reports from Commissioners 1843 Vol.III Appendix to the 2<sup>nd</sup> Report of the Commissioners: Trades and Manufactures Part 1. Evidence on the Employment of Children* p.a37



than their craft, yet offered a smattering of 'the three R's',<sup>9</sup> sheltering behind the name of 'school', and far from the children being paid for their labour, the parents paid for tuition.<sup>10</sup>

As previously noted in this study, the hitherto accepted seasonality of some village crafts is now in question, but it is indisputable that although theoretically able to work on a casual basis, ~ 'The contracts between master and servant, in the manufacturing districts, are made for one week' wrote Vernon Royle,<sup>11</sup> ~ the vast majority of early factory children were neither seasonal nor casual workers, but permanent employees working full days alongside adult workers to whom they were not necessarily related, nor formally apprenticed. Their labour became not merely auxiliary to production, filling a shortfall in the labour supply, but essential to the production process. 'The children became individual proletarians performing alienated labour.'<sup>12</sup> It was possible to see them entering and leaving the mills, the hours of their labour obvious to all. The higher profile thus afforded to child employment also made the textile industries, notorious for the mass use of child labour, a prime target for regulation. It has been frequently remarked that widespread public concern for the welfare of child workers did not become apparent until the second decade of the nineteenth century, approximately at the same time that agitation increased regarding slavery.<sup>13</sup> Growing public awareness of slavery, and the circumstances under which the slave trade was conducted, prompted a closer look at the conditions of domestic labour. It was not difficult to see that cotton grown and harvested by slave labour was then spun and woven, here in England, under not dissimilar conditions. Indeed, the slave owner had greater responsibility for the welfare of his slaves, than had the factory or mill

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<sup>9</sup> 'A Fair Exchange' ~ The mistress of a dame school, speaking of her pupils, honestly declared, 'It is but little they pays me; and it is but little I teaches them.' *Herts Guardian* 15 May 1852 p.3

<sup>10</sup> By 1843, Burns noted that trade was so bad that children of poor parents were kept at home plaiting, in order to save the 2d a week expended on schooling. *Childrens Employment Commission* Second Report of the Commissioners. PP 1843 Vol III p. A10

<sup>11</sup> Royle, *The Factory System Defended* p.9

<sup>12</sup> Lavalette, Ed. *A Thing of the Past? Child Labour in Britain in the Nineteenth and Twentieth Centuries.* p.56

owner, for his labourers. Richard Oastler, styled 'King of the factory children' was himself one of those abolitionist supporters of William Wilberforce whose attention was diverted from the plight of the black slaves, towards the plight of the 'White Infant Slaves' of the factories. Following the refusal of the Reform Parliament to pass the Ten Hours Bill in 1833, he wrote passionately:

That infamous Parliament, wept over the black Slaves, and laughed at the sufferings of the poor White Infant Slaves! They could not afford to emancipate the Factory Children, because their killing labour was required to fill the King's Treasury; but they *could* afford to emancipate the Black Slaves, and to pay for it Twenty Millions of Pounds, out of the Earnings of the Poor, over-worked Factory Children! \_\_\_\_\_ They believed it was *cruel* to work a *Black Man* more than *Eight Hours* a day, and they refused to protect a *White Child*, who was willing to work *Ten Hours* a day.<sup>14</sup>

This was also the time at which those children sent to work in the silk and cotton mills of the Midlands, Essex, even Hertfordshire, during that first wave of mill building, expansion, and relocation of the last quarter of the eighteenth century, reached an age at which health problems would have become most evident. Children sent to the Watford mills in 1796 at age 11, would in 1830 have been 45 years of age; any physical deformities, impaired growth, or respiratory diseases, whether attributable to poor diet, malnutrition, (a common consequence of the latter being rickets) or dust in the atmosphere, would, with the passage of

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<sup>13</sup> Hopkins, *Childhood Transformed*. pp.75-76 Cunningham *The Children of the Poor*. p.51 Horn *Children's work and welfare, 1780-1890*. p.6

<sup>14</sup> 'Eight Letters to the Duke of Wellington: A Petition presented by Lord Ashley to the House of Commons: and a Letter to the editor of the Agricultural and Industrial Magazine.' Note p.121 London, J. Cochrane and Co., 1835 in Carpenter, Ed. *Richard Oastler: King of Factory Children. Six Pamphlets 1835-1861*

Joseph Arch also saw a reflection of slavery in the plight of children working in agriculture: '... it is no exaggeration to say that the life of poor little Hodge was not a whit better than that of a plantation nigger boy.' Arch, *The Story of his Life, Told by Himself*. p.29

time, have become increasingly obvious. Claims that few textile factory workers survived fit to work above the age of forty,<sup>15</sup> were refuted at length by 'a cotton spinner', (Henry Ashworth) in 1833. He suggested several reasons other than factory-induced ill-health for the lack of older workers in some mills, including the youth of the mills themselves, and invited comparison with other areas of work:

... the old men, who are said to die or become unfit for work when they attain forty years of age, or soon after ..... You will find from the evidence which follows, that there are but few men, in any business, who much exceed the age of forty; and even these will be found more or less incapacitated.<sup>16</sup>

In the Hertfordshire silk mills in 1833, as shown in Table 7.5<sup>17</sup>, only 15% of workers were over the age of twenty-one, although this figure rose to 24% in Watford, and 28% at St Albans. Such figures lend superficial support to Ashworth's comments, since these were the longest established mills in the county, but the sex ratio of this older age group was 68, indicating an approximate employment rate of two females for every male. Ashworth's second point too receives qualified anecdotal support from recorded poor relief payments to unemployed and incapacitated labourers over the age of 40. It has also been suggested that for males, factory labour acted as a transitional employment until they had attained the age to take another trade or learn a skill.<sup>18</sup> This is possible, given the high drop-out rate of male employees when contrasted against female, although it is clear that for both social and economic reasons, mill owners did prefer to employ the young of either sex. Courtaulds dismissed boys at age 15,

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<sup>15</sup> A claim repeated by Engels in his study of the working class under the effects of industrialisation: 'The men wear out very early in consequence of the conditions under which they live and work. Most of them are unfit for work at forty years, a few hold out to forty-five, almost none to fifty years of age. This is caused not only by the general enfeeblement of the frame, but also very often by a failure of sight, which is a result of mule-spinning, in which the operative is obliged to fix his gaze upon a long row of fine parallel threads, and so greatly to strain the sight.' Engels *The Condition of the Working Class in England*. p.187

<sup>16</sup> Henry Ashworth, 'Letter to the Right Hon. Lord Ashley, on the cotton factory question, and the ten hours' factory bill.' p 20 1833 facsimile in Carpenter, *The Factory Act of 1833*

<sup>17</sup> Table 7.5, p.249 below.

<sup>18</sup> Horn, *Children's work and welfare, 1780-1890*. p.26;

admitting that 'there is not in the Mills fitting employment for any considerable number of grown-up Men'.<sup>19</sup> In the Watford and Rickmansworth districts, some left the silk mills to work in the paper and rag-cutting factories,<sup>20</sup> but the majority of juvenile male silk mill workers, traced through later census or vestry entries, became labourers rather than skilled artisans or tradesmen. This trend increased after closure of the silk mills; the brothers William and John Rowe, aged 12 and 10 in 1861, both working at the Rickmansworth silk mill, had both become labourers by 1881, as had Benjamin Rackliff and Charles Carter.<sup>21</sup>

It should not be assumed that politicians, manufacturers, and private citizens that opposed introduction of the Factory Acts and the regulation of child labour, by definition countenanced 'child slavery' or approved the implicit cruelty that the emotive phrase now suggests. Hopkins, in assessing a good deal of the evidence available, comes to the inevitable conclusion that although cruelty undoubtedly existed in the factories, the extent to which it was practised is impossible to quantify. Much of the cruelty appears to have been practised by those in positions of minor or intermediate authority, overseers and overlookers, rather than as a result of direct intervention by managers or mill owners. Neither the depositions of manufacturers, nor the evidence of their employees can be accepted entirely without reservation. Those in favour of curtailing hours of work had an interest in exaggerating, or at least emphasising, the horrors of the factory, while those desirous of maintaining the status quo, had an equally strong interest in presenting a positive picture. Nothing was clear cut: few of the reformers desired an absolute end to child labour, and some of their opponents believed that ideally children under the age of eleven should be at school rather than in a

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<sup>19</sup> From a factory notice of 1859 reproduced in Adams, Bartley, et al. *'Under Control' Life in a Nineteenth Century Silk Factory*. p16

<sup>20</sup> PP.1843 Vol.III *Reports from Commissioners* Appendix to the 2<sup>nd</sup> Report of the Commissioners: Trades and Manufactures Part 1. Evidence on the Employment of Children pp. 50-59

<sup>21</sup> Wm and John Rowe: 1861 Rickmansworth 2. Schedule 46; 1881 Wm Rickmansworth Folio 28 p.2; John still living at home (High St.) Rickmansworth Folio 30, p.5. Benjamin Rackliff : 1861 Silk mill labourer aged 16. Rickmansworth 2. Sched. 216. 1881:Gen. Labourer Folio 84. p.7 Charles Carter 1861 : Rickmansworth 1, Sched. 106 1881: 'Bricklayers labourer' 1440 Folio 85, p.10

factory. Nevertheless, the labour of children was widely considered to be not merely necessary to family finances, and to the country, but morally beneficial, inculcating a sense of responsibility, reinforcing in the psyche of the young person, the work ethic so beloved of later Victorian moralists. H Turner Thackrah, a Leeds doctor, was unusual in asserting unequivocally that 'The employment of young children in any labour is wrong'.<sup>22</sup> Indeed, there was serious consideration as to whether introduction of the 1819 Bill, aiming to reduce the hours of child labour from an average of twelve and a half hours to eleven, would encourage vice, loose morals, and debauchery. In contemporary pamphlets readers were assured that the Bill placed both children and adults in circumstances favourable to the growth of immorality, that it would increase poverty among operatives, and set child against parent. '...the bill actually encourages vice; it establishes idleness by act of parliament.'<sup>23</sup>

### **The Role of the Parish**

There was a tendency for reformers, as for present day historians, to concentrate upon the evils of the factory system in the northern and midland regions, where the factory-work populations were most dense, and 'apprentices' were sent from the London and rural southern parishes to supplement any labour shortfall. The result is a weighted overall impression of bucolic southern counties having little industrial activity, such small concerns as there were therefore employing purely local labour, while overburdened parishes encouraged the migration of their surplus poor. Pamela Horn notes that between 1802 and 1811 alone, fifty London

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<sup>22</sup> Thackrah 1831 Quoted in Inglis, *Poverty and the Industrial Revolution*. p266

<sup>23</sup> An inquiry into the principle and tendency of the Bill now pending in Parliament, for imposing certain restrictions on Cotton factories. 1818, London in Carpenter *Ed. The Factory Act of 1819 : Six Pamphlets* p.42 The author continues his diatribe, asking the rhetorical question, '...what man is in the greatest risk of becoming vicious and criminal? no person would hesitate to answer, a man, who is poor and idle. This is precisely the kind of men, into which the bill will convert all adults employed in the cotton manufacture. ....the bill will make them poorer by diminishing their earnings; and it will make them idle, by lessening the period of their daily labour. Yet this is a bill to preserve health and morals'

parishes despatched over 2000 pauper apprentices, a large number of them under eleven years old, to textile producers.<sup>24</sup> It is seldom appreciated that a fair proportion of these children came to rural counties, where factory labour was actually in equally short supply.

As early as 1775, the Committee on the Relief and Settlement of the Poor had stated 'That it is the Opinion of this Committee, That the employing of the infant and able Poor in such Works as may be suited to their Strength and Capacity will be very beneficial to this Kingdom'.<sup>25</sup> Up to the age of four, children cast upon the Parish were sent to nurse, but thereafter were '... sent to the House to which such Parish or Place shall belong, to be instructed in all necessary Duties, and employed in such Manner as shall be most suitable to their Age and Capacities.'<sup>26</sup> At four years old their working lives had begun. At Watford there is evidence that either the Vestry, or the manufacturers, soon came to the decision that children of six and seven years old were, in general, too young for the silk mills. Although the poor 'from six to sixty' were in 1772 and 1775 employed in the silk mills, by 1780 the agreement is for those 'eight years and upwards.'<sup>27</sup>

'Childhood' as a time of carefree play and leisure, existed only for the rich, while public sentimentality towards *all* children as a complete and individual section of the population with rights of their own, was a new and strange phenomena. As Cunningham emphasises, until the nineteenth century, the children of the poor were 'seen as necessarily and desirably different from other children ..... Childhood for the poor in the seventeenth and for most of the eighteenth century was perceived as a time for inurement into habits of labour.'<sup>28</sup> Cunningham subsequently argues that members of the upper and middle classes

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<sup>24</sup> Horn, *Children's Work and Welfare, 1780-1890* p.20

<sup>25</sup> *Report from the Committee Appointed to Review and Consider the Several Laws which Concern the Relief and Settlement of the Poor (1775): House of Commons Sessional Papers of the Eighteenth Century* Willmington 1975 Vol XXXI Reports & Papers: Poor Relief p4

<sup>26</sup> *Report from the Committee Appointed to Review and Consider the Several Laws which Concern the Relief and Settlement of the Poor (1775): House of Commons Sessional Papers of the Eighteenth Century* Willmington 1975 Vol XXXI Reports & Papers: Poor Relief. p7

<sup>27</sup> *Watford Vestry Mins.* 18 April 1780. HRO D/P117 8/1

not only approved of child labour, but 'had indeed invested much effort in attempts to create industries in which children could work'<sup>29</sup>, and it is true that work creation schemes for the young, as well as the adult poor, are recorded in Vestry and Workhouse records, the labour of the poor farmed, like a strip of land lying fallow.

The story of the children working in the textile mills is to a great extent bound up with the role of the workhouses and the poor laws. Maintenance of the poor was expensive, and a prime aim was to recoup at least part of the cost. While men were often set to labouring on roads or farms, such work was obviously unsuitable for women and children. The Watford vestry found it too expensive to employ the poor in digging gravel, reverting in times of crisis to a 'roundsman' system of allocating labourers to occupiers and farmers according to their rents<sup>30</sup>, but in general the majority of women and children, together with their men, were leased out to the silk mill proprietors.<sup>31</sup> Depending upon local factors, advertisements were placed in the newspapers, or published in Church like the banns for a marriage... Great Marlow, a rural Buckinghamshire parish, found it necessary to advertise widely in the *County Chronicle*, while Watford, comparatively industrial in character, found an announcement in church sufficient publicity to attract three or four bids within the space of a week.<sup>32</sup>

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<sup>28</sup> Cunningham, *The Children of the Poor*. pp2-3

<sup>29</sup> Cunningham, *Children and Childhood in Western Society since 1500*. p87

<sup>30</sup> 'Whereas it has lately happened that the Relief to Casual poor has been greatly increased by a Number of poor men being in want of work, and their having been employed to dig Gravel, proving a very expensive plan, It is agreed in future when any poor man shall apply for Relief on account of such want of employment, that such poor shall be sent to each and every of the Farms in turn, to be empl'd by them one two or more Days according to their Rents, at one shilling p[er] Day.' *Watford Vestry Minutes* 18 April 1781 HRO D/P117 8/1

<sup>31</sup> *Watford Vestry Minutes* 18 April 1781 HRO D/P117 8/1

<sup>32</sup> *The County Chronicle and Weekly Advertiser for Essex, Herts, Kent, Surrey, Middx etc.* 18 March 1788 p.1i

Great Marlow, 28<sup>th</sup> February 1788  
Poor to be Let

Any Manufacturer, or other person, desirous to contract for the maintenance and employment of the POOR of GREAT MARLOW, in the county of Bucks, from the 17<sup>th</sup> day of April next, for one whole year certain, may deliver proposals for taking the said POOR, to a Vestry to be held in the

Watford was far from unusual in setting the poor to such labour, since although the poor of Hertfordshire as a whole are recorded in 1775 merely as 'Employed in beating Hemp and spinning', the various branches of the silk manufacture proved a popular means of employing the London poor. The poor of St Andrews Holborn and St George the Martyr, Christ Church Middlesex, St Giles in the Fields and St George Bloomsbury, St Mary Whitechapel and St Sepulchre Middx, were only some among those employed in the production of silk, either winding, spinning, or weaving.<sup>33</sup> The entry for the last reads, 'The able Poor have been employed in winding Silk; the infant Poor in the same, and Stripping Quills.'<sup>34</sup>

Guardians and Overseers following recommendations placing young children in factories were not unfeeling, nor intent upon maximum profit from the labour of the poor at the expense of their health. In May 1781 the labour of the Watford poor was again under offer, the bidders being, again, all silk mill proprietors. Mr William Parry at first refused to raise his price from that of the previous year, desiring to continue on the same terms as before, of 18 pence per head, per week. Peter Paumier then bid 2 shillings, an offer which appears to have received initial acceptance from the Vestry, only to be withdrawn, the decision held over until a later meeting.<sup>35</sup>

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church at GREAT MARLOW, on the 31<sup>st</sup> day of March next, at eleven in the forenoon, at which time and place, if found convenient, the said POOR will be let.

NB the said POOR were let last year for 570l. further particulars, and the terms of the Contract, may be known by applying to the overseers, or to H. Allnutt, Vestry Clerk.

*Watford Vestry Minutes: 4<sup>th</sup> July 1775 HRO D/P117 8/1*

At a Vestry holden this Day in pursuance of Notice given in the Church on Sunday last, to Contract with such person as shall be the best bidder for the Labour of the Poor of the said Parish, And the Poor's Labour being put up to the best bidder and Mr William Parry having bid 1s 6d per week for each of the Poor ...

St Albans Abbey also advertised in both the *County Chronicle* and *County Herald* for the maintenance of the poor. *St Albans Abbey Vestry Minutes* 4 May 1804 HRO mf.523

<sup>33</sup> *Report from the Committee Appointed to Review and Consider the Several Laws which Concern the Relief and Settlement of the Poor (1775): House of Commons Sessional Papers of the Eighteenth Century Willmington 1975 Vol XXXI Reports & Papers: Poor Relief pp19-24*

<sup>34</sup> *Report on the Relief and Settlement of the Poor (1775) Vol XXXI : p24*

<sup>35</sup> *Watford Vestry Minutes: 1 May 1781 HRO D/P117 8/1*



At the meeting a week later, the question of Paumiers offer was subjected to closer scrutiny:

Watford Vestry Minutes: 8<sup>th</sup> May 1781

We the Churchwardens and Overseers being assembled this 8<sup>th</sup> May 1781 pursuant to agreement and taking the offer of Mr Paumier into Consideration and having fully informed ourselves of many Inconveniences which would certainly attend the poor going so far to work as his own Shop, particularly in Winter and finding the generality of the Inhabitants entirely of the same Opinion think ourselves justified in refusing Mr Paumiers Terms first in a Compassion to the Children, and also we think the extra wear and tear, the inconvenience of sending their Food, the unavoidable loss of time, and the hazard of their catching Colds, in Wet and bad Seasons ~ And also taking into consideration a fresh proposal said to be intended by him to employ the poor in the house, and having survey'd the same find it impracticable, on account of a Resolution to relieve fewer out and therefore more may be expected in the house. We therefore think it proper to accept of Parry's second proposal, whereby he agrees to pay twenty pence per head p Week for each from the age of eight to sixty and also sixpence p Week for Capable Children under that Age, and to employ the Children of the poor out of the house who shall apply for Relief and be sent by the Officers and to be subject in every Respect to the Order of 18 April 1780 for the year ending at Easter next, and all things consider'd we think these Terms best for the Interest of the Parish, and do accept [same?] and the said Wm Parry agrees hereto and to pay the same Weekly.<sup>36</sup>

This entry has been reproduced in full because it illustrates a number of points: the final choice of the vestry was influenced not by the higher rate offered by Paumier, but by inconvenience and added travail both to overseers and inmates of the workhouse. The opinions of workhouse inmates appear to have been consulted, or at least taken into consideration. Health risks would have caused the Governors concern on several levels, both humanitarian and financial, from increased vulnerability to contagious disease, resulting in high labour and monetary costs in caring for the sick, to the loss of working hours and therefore of income. They

were also substantially the same reasons for Paumier's unsuccessful bids in the past, most notably the bid of January 1775.<sup>37</sup> That the labour of the children was particularly desirable is evident from Parry's eagerness to employ the children of the poor outside the house, and of course, those considered 'capable' under eight years old. These arrangements were not unusual, but it does appear that the Watford Vestry kept themselves apprised of the manner in which such agreements were conducted in neighbouring parishes.

In Rickmansworth parish the poor were similarly employed in the cotton mill of Joseph Strutt at Batchworth, and the Watford vestry took the arrangement as a model for their own dealings with the silk masters of their district.<sup>38</sup> To supplement local labour, Strutt employed additional children of both sexes from outside the district, a substantial number coming from St James, Piccadilly.<sup>39</sup> The vestry record for November 1786 names ten children, but more were sent; an entry for 1790 recording that a committee sent to 'Rickmersworth' found 'twenty six of

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<sup>36</sup> *Watford Vestry Minutes* 8 May 1781 HRO D/P117 8/1

<sup>37</sup> *Watford Vestry Minutes* 20 January 1775 HRO D/P117 8/1

<sup>38</sup> *Watford Vestry Minutes* 9 May 1786 HRO D/P117 8/1  
and *Rickmansworth Vestry Minutes* 1786 HRO D/P85 8/1

<sup>39</sup> *St James, Piccadilly : Governors and Directors of the Poor Minute Book.*  
10 November 1786 C W A D1873

The Clerk reported that the under mentioned Children were bound an apprentice to Mr Strutt of Rickmansworth in the County of Hertford Cotton Manufacturers.

Mary Williams  
Henry Adam Younger  
Edward Burroughs  
James Driskall  
Joseph Harding

James Farrell  
Margaret Grant  
Mary Kennedy  
Mary Burton and  
Ann Robinson

He also reported that Mr Strutt intended to send a Bag of Cotton to the Parish School of Industry to pick, and that he should constantly employ the Boys in that Business if they should be found capable of doing it.

He also reported that he had ordered of the Carpenter a beating and picking frame for that purpose.

the original twenty nine bound to Mr Strutt.’<sup>40</sup> The relationship between Strutt and the parish of St James continued until 1792, when the children were notified of the expiry dates of their apprenticeships, but no children were sent after 1790. The experiment had not been an entirely happy one, causing the Governors concern over runaways, complaints from apprentices, and, from its own committee of inspection, censorship of the treatment of the children in the mill. Strutt had connections to the Strutts of Belper, who have been classed with Richard Arkwright of Cromford and Robert Owen of New Lanark as good employers<sup>41</sup> but although the inspectors of 1790 found the children ‘healthy and well cared for’ in October of 1792 the Overseers reported to the Board :

.....that they had with several other Governors visited the poor children bound apprentice to Mr Strutt, Cotton Manufacturer at Rickmersworth and found that several of them had been very severely chastized for trifling offences, that the food allowed them was inadequate to the many hours they were kept to work, and that they were universally dissatisfied.  
Ordered that the Clerk do write to Mr Strutt relative thereto.<sup>42</sup>

Specifically destined for ‘the boys’ at the School of Industry, Strutt had also sent out bags of cotton for picking.<sup>43</sup> This use of outworkers was widespread,

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<sup>40</sup> *St James, Piccadilly : Governors and Directors of the Poor Minute Book.* 17 September 1790  
C W A D1873

The Committee beg leave to report that in obedience to the order of the Board they went to Rickmersworth where they found twenty six children out of the original number twenty nine bound to Mr Strutt. That they appear to be healthy and well taken care of, and seem better satisfied than last year, there does not appear any just cause of Complaint, nor did the Children upon being separately examined make any, that your Committee admonished them to be dutiful to their Master and diligent in their business which your Committee hope they will observe.

That two of the above children who have left their Master your Committee apprehend are gone to Sea, and the other is secreted by his friends, they therefore recommend to the Board to direct the Messenger from time to time to enquire after those Children until they can be recovered and sent back to their Master. As the Board have already resolved not to put any more Children apprentice to Cotton Spinning, your Committee have nothing more to say on that head.

<sup>41</sup> Hopkins, *Childhood Transformed.* p.81

<sup>42</sup> *St James, Piccadilly : Governors and Directors of the Poor Minute Book.*  
26 October 1792 CWA D1873

<sup>43</sup> *St James, Piccadilly : Governors and Directors of the Poor Minute Book.*  
10 November 1786 CWA D1873

articles of agreement drawn up between John Burbridge, Master of the Workhouse at 'Ryslip' and Thomas Watson of Watford, Silk Merchant, dated February 1792, record the terms and conditions upon which the work of winding silk was to be done.

Mr John Burbridge of Ryslip in the County of Middx agrees with Mr Thomas Watson of Watford Herts, to wind under his Care all the silk that late he wound at [?] under the Inspection of Mr Slingsby Baynes of Watford, and does agree if not properly done to the satisfaction of the Said Mr Baynes, then to be rewound at the Expense of Mr Burbridge, the silk to be wound in three Separate parcels, wound middling and fine, to be sent for, and returned to the silk Mills of Mr Watson at the sole Expense of Mr Burbridge from the 1<sup>st</sup> [March ?] next to 26<sup>th</sup> Oct 1792 \_\_\_ and to engage not to wind for any other person.<sup>44</sup>

Payment was to be at or after the rate of 16 pence per pound for all the silk wound to the satisfaction of Slingsby Baynes, designated an agent of Thomas Watson. Each pound was to be paid for on delivery or return, at the mills of Thomas Watson at Watford. Watson also promises to supply Burbridge with silk 'from time to time' during the period of the contract, and to furnish him with 'silk proper for winding'.<sup>45</sup>

The ultimate fate of children taken from outside the district could be uncertain, fraught with problems for parents, child, vestry, and mill owner. Complaints regarding the treatment and welfare of the children were taken seriously, vestry officers responding to such complaints by paying unexpected visits to ascertain the true situation.

Mr Churchwarden Butler reports that in consequence of a Complaint made of the Children with Mr Watson at Watford being ill treated he with Mr Taylor and Mr Lemags, went on Wednesday last very unexpectedly to visit them, when it appeared to them that the Children were all perfectly satisfied, very well treated and

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<sup>44</sup> *Articles of Agreement between John Burbridge and Slingsby Baines Feb. 1792*  
HRO D/EB 1157 B11

<sup>45</sup> *Articles of Agreement between John Burbridge and Slingsby Baines* HRO D/EB 1157 B11

comfortably accommodated and upon the whole the situation appears eligible and the Complaint malicious and unfounded.<sup>46</sup>

Some problems were less easily resolved: in 1796 Thomas Watson had taken children from St Martin in the Fields, (at the apprenticeship fee of £2, until the age of 21) to work in his silk mill at Watford, but his death in 1802 cast the children once again upon the parish, this time upon the Watford parish. The mill ceased production, although the family retained ties in the district.<sup>47</sup> Since the children had established rights of settlement by virtue of apprenticeship and period of residence in the district, the Watsons had no responsibility to return the apprentices to their home parish, nor to maintain the children for the duration of their 'apprenticeships'. The Watford vestry allowed special supplementary payments to the Contractor of the poor in respect of the additional expense in feeding and clothing these children, one hundred pounds at the beginning of August<sup>48</sup> and a further fifty pounds in September<sup>49</sup> while making strenuous efforts to reassign them apprenticeships elsewhere:

16<sup>th</sup> March 1802

\_\_\_ Ordered that the Officers of the Parish with the consent of the Magistrates are empower'd to contract with any Manufacturer for the placing out the Children lately remov'd into this parish as Apprentices with a Premium not exceeding the Sum of Four Pounds p[e]r Head.'<sup>50</sup>

Care was taken in placing the children, and the vestry did not accept the first offers made, resorting to the possibility of advertising the availability of unplaced

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<sup>46</sup> *St Martin in the Fields Churchwardens and Overseers Minute Book* 19 October 1796 p.145  
CWA F2075

<sup>47</sup> His son, Thomas Samuel Watson, 'aged Eighteen or thereabout', was admitted in April 1804 to the Manor of Watford as heir to his father, Thomas Watson Esq., copyhold tenant of the Earl of Essex. HRO No. 10174<sup>a</sup> Manor of Watford 4 April 1804 Admission of Mr Thomas Samuel Watson.

<sup>48</sup> *Watford Vestry Mins* 3 Aug 1802 HRO D/P117 8/2

<sup>49</sup> *Watford Vestry Mins* 7 Sept 1802 HRO D/P117 8/2

<sup>50</sup> *Watford Vestry Mins* 16 March 1802 HRO D/P117 8/2

youthful paupers in '3 or 4 of the News Papers of the Manufacturing Counties offering to put forth the Children as Apprentices.'<sup>51</sup>

The Watford Vestry even appears to have taken some responsibility regarding a sick child from Watson's mill that had been taken into the Enfield Workhouse. Sick children could pose particular problems both for Vestry and mill proprietor. Silk was an expensive commodity, highly susceptible to damage from dirt or any kind of soiling. Among the children Charles and John Woollam took from the Vestry of St Margaret's Westminster in August 1803 was a child called Mary Berry, suffering from an inherited form of syphilis. She had a particularly unpleasant running sore, or boil, that erupted from time to time, and her distressing condition meant that at such times she could not be allowed anywhere near the silk. Mary had been treated with kindness and compassion in St Albans, she was a well behaved child, diligent in her work, and it was with regret that Charles wrote to the vestry Clerk of St Margaret's to arrange her return. The vestry proved reluctant to act, Charles Woollam grew impatient, but would not send the child back to London unaccompanied. Mary, despite her unfortunate circumstances, her birth out of wedlock, and a mother described as 'a vagabond in the streets' was obviously not just another abandoned child left on the parish, since while at St Albans, she was visited on several occasions, and by both parents.<sup>52</sup>

The Health and Morals of Apprentices Act of 1801-2 enacted that apprentice children from workhouses should work for no more than twelve hours a day, and that they should have clean, well ventilated accommodation. Arguably, workhouse apprentices were afforded better protection than the children of local people. Overseers of the poor were instructed to keep a register of apprentices, and magistrates not only to supervise the working of the act but to ensure that apprentices received elementary education. Conditions certainly varied between

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<sup>51</sup> *Watford Vestry Mins.* 16 March 1802 HRO D/P117 8/2

*Watford Vestry Mins.* 9 Feb -7 September 1802 HRO D/P117 8/2

<sup>52</sup> *Letter from Charles Woollam to Mr Stevenson, Vestry Clerk, St Margarets Westminster* 28 Jan 1804 CWA E3338 The experience appears to have soured relations on both sides, and no evidence is found of further apprentices from these parishes sent to St Albans.

mills and according to the Master, but in all, hours were long and the level of concentration required was high.

The textile mills of Watford and Rickmansworth provided ready employment for the parish poor. It is recorded in the Returns relative to the expense and Maintenance of the Poor, (Table 7.1) that in 1803 the poor of Watford were farmed at £1,200 per annum, and Rickmansworth at £900 p.a. In addition, Table 7.1 shows that although Watford incurred no expense in purchasing materials for employing the poor, the return of £312 12s., the amount entered as 'earned in the House of Industry or workhouse', was greater than that of any other district of south-west Hertfordshire considered in this study. Tring had, as yet, no silk mills, and the recently established Abbey Mills at St Albans does not at this time appear to have taken children from the local workhouses.<sup>53</sup>

**Table 7.1 The Poor: Expenditure and Earnings 1803**

	Column 8 Money expended in purchasing Materials for employing the Poor; Money expended in any House of Industry or Workhouse.	Column 9 Money so Earned in any House of Industry or Workhouse.	
		Out of House	In House
WATFORD	None	£312 12 0	
RICKMANSWORTH	£3 00	£90 00	
SANDRIDGE	£2 16 0	£62 19 8 <sup>1</sup> / <sub>2</sub>	
TRING	Not Known	£100 *	
ST. ALBANS	£5 18 10	~	£47 5 8 <sup>1</sup> / <sub>2</sub>
ST. MICHAEL	~	£3 16 6	£16 16 11
ST. PETER	£1 13 10 <sup>3</sup> / <sub>4</sub>	~	£12 3 7
ST. STEPHEN	£5 18 3	£31 14 0	~
SARRATT	~	~	

\* 'The Poor of this Parish are farmed under Contract. The Earnings of the poor, IN and OUT of the House, amounting to £100 belonged to the Contractor.' p.204

It is noted that while the poor of Watford are employed in the Silk Manufacture, at St Albans St Stephens 'The Poor are employed in the Linen Manufacture, the

<sup>53</sup> 1803-4 Vol.XIII *Abstract of the Answers and Returns relative to the expense and Maintenance of the Poor in England. 1803 County of Hertford* pp204-205.

Produce of which is consumed in the House'<sup>54</sup> This latter arrangement may have provided a significant reason for the Woollam brothers to seek additional labour from the London vestries. At this time and in this part of the county, straw plaiting, so widely practised outside the house, receives little mention as a suitable employment for the poor, although it is acknowledged that with regard to Sandridge the 'greater part of the Sum was earned by the Poor in Husbandry Work, the remaining Part in plaiting Straw.'<sup>55</sup> Mr R Vivian, the forthright Rector of Bushey, a neighbouring parish to Watford, recorded in his accompanying remarks 'The Female Children have lately been taught Straw-plaiting, but not at the expense of the Parish, and make considerable Earnings, until they are old enough to go into Service.'<sup>56</sup>

The sums expended and earned must be considered in relation to the number of paupers involved. As evident from Table 7.2, the Watford workhouse held more than three times the number of paupers resident in the Rickmansworth house, although the converse is apparent with regard to the number of children aged 5-14 relieved outside the house.

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<sup>54</sup> 1803-4 Vol.XIII *Abstract of the Answers and Returns relative to the expense and Maintenance of the Poor in England. County of Hertford* p.207

<sup>55</sup> 1803-4 Vol.XIII *Abstract of the Answers and Returns relative to the expense and Maintenance of the Poor in England. County of Hertford* p.204 By 1828 Sandridge Vestry had incorporated into its rules 6<sup>th</sup> No Inmate of the Workhouse to be sent out to work. *Rules of Vestry Sandridge (Cashio)1828 HRO*

<sup>56</sup> *Abstract of the Answers and Returns relative to the expense and Maintenance of the Poor in England. County of Hertford pp204-205. (Printed 1804)*

Vivien 's comments as a whole display many of the prevailing attitudes favouring the introduction of the New Poor Law.



**Table 7.2 Number of Persons relieved in selected Hertfordshire Workhouses 1803**

	Column 10 No. Persons Relieved from Poor's Rate. Permanently.		Column 11 No. Children of Persons Relieved Permanently, out of the House; and any other Children maintained out of the House	
	Out of House Not including their children	In House including children	Under 5	5 – 14yrs
WATFORD	105	130	10	14
RICKMANSWORTH	41	38	20	54
SANDRIDGE	Not Known		Not Known	
TRING	Not Known		Not Known	
ST. ALBANS	33	20	2	5
ST. MICHAEL	17	25	8	1
ST. PETER	64	30	7	4
ST. STEPHEN	30	50	7	16
SARRATT	21	~	8	28

1803-4 Vol.XIII *Abstract of the Answers and Returns relative to the expense and Maintenance of the Poor in England. 1803 County of Hertford* p 205.

The utilisation of child labour was deemed crucial to the economic viability of the manufacturing industries, whether factory or cottage based, due to the interlocking nature of the work whereby old and young depended upon one another.<sup>57</sup> Equally important was it to the skill of the future adult worker. In all interviews, manufacturers stress the need to acquire skills in youth, if an employee is to be worthy of his hire in later years, or indeed to earn a respectable wage:

... at twelve years most children who have been used to any other sort of work would be unfit for silk; their fingers would be coarse and rough. (A.11)

A young woman who has commenced in infancy may earn, when grown up, from six to seven shillings per week, whereas scarcely any who commence at fourteen or sixteen years of age would ever earn more than three or four shillings; in fact they are unteachable, and destroy the value of more silk than they earn in wages.<sup>58</sup> (A.66)

<sup>57</sup> Royle, 'The Factory System Defended' pp23-4

<sup>58</sup> PP 1834 XX *Supplementary as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire No. 114 Answers of T R Shute, Watford, Rickmansworth and Chesham. A.66 p.136

Girls were considered more suitable than boys, as witnessed in the minutes of the Berkhamsted Guardians for September 28<sup>th</sup> 1835 which refer to a letter from the manager of the silk mills at Tring, offering employment to children at the rates given below:

**Table 7.3 Wage Scale by Age and Sex : Tring 1835<sup>59</sup>**

AGE	BOYS		GIRLS	
	1 <sup>st</sup> 26 weeks	2 <sup>nd</sup> 26 weeks	1 <sup>st</sup> 26 weeks	2 <sup>nd</sup> 26 weeks
7-8	1s 0d	1s 6d	1s 3d	1s 9d
8-9	1s 3d	1s 9d	1s 6d	2s 0d
9-10	1s 6d	2s 0d	1s 6d	2s 3d
10-11	1s 9d	2s 3d	1s 9d	2s 3d

Such a strongly biased wage scale implies that among very young children, girls were quicker to adapt to the work, their fingers more nimble and their reactions better co-ordinated, perhaps their powers of concentration better developed. Their value to the mill, even in the short term, must have been considerably higher than that of boys, in order to warrant an extra 3d, which at age 7-8 constituted one-quarter of the weekly wage during the first twenty-six weeks of employment.<sup>60</sup> Wages paid at Tring in 1835 are broadly comparable with the average wage paid by Courtauld's mill in 1833, which Possee assesses at 30% below northern rates.

**Table 7.4 Courtauld's mills: Average Weekly Wage<sup>61</sup>**

	7-11 years	11-16 years	16-21 years	21-26
1833	1s 5d	2s 7d	4s	5s
1850	1s 5d	2s 7d	4s	5s

<sup>59</sup> Berkhamsted *Guardians Minute Books* 28 September 1835 Vol.1 HRO BG/BER 1

<sup>60</sup> An adult 'ordinary workman' in the silk industry of Coventry was estimated to be earning 12s., working six days a week. Weavers using rack looms might earn 25s a week. The general rate in the plain branches was 9s – 12s, and in the fancy branches, 14s – 16s *PP. 1834 Vol.IV Appendix to the first Report from the Commissioners on the Poor Laws*. pp 24-25

<sup>61</sup> Source:David Possee, *The Weaver and the Throwster* 1998 p.16

In 1840 adult wages at the Tring mills were said to average 12s to 15s for males and 5s 6d for females, children averaging 3s, and superintendents getting £1 a week.<sup>62</sup>

It is unlikely that there were many suitable children available in the Berkhamsted Union, since the Board reported in December that not only were there only 43 paupers in the Berkhamsted workhouse 'which is capable of holding 120 or more'<sup>63</sup> but recorded a resolution that '... the Master of the House should Keep a Book for entering an account of all the Straw manufactured into Plait and of the date of it...' <sup>64</sup> suggesting that the poor in the house are employed in the plait trade, and it is most probable that such work would have included any children eligible for employment at the Tring Mills.

At the same time, grave doubts had already been expressed regarding the value of textile factory 'apprenticeships' in equipping children to earn a livelihood as an adult. The skills learnt in the factory did not rank with the trade and craft apprenticeships that had been so jealously guarded through the centuries. The Berkhamsted Guardians shared these doubts, protesting on several occasions at the binding of apprentices from the London parishes to David Evans of Tring Mills.

### **Children in Employment**

The 1833 Factory Act was a compromise following the failure of the Ten Hours Bill, that failed to really satisfy any of the parties involved. It had little or no effect on the lives of silk-mill children, but the parliamentary evidence collected in relation to the Act tells a great deal of the discipline and rules under which they lived. The anonymous author of an 'Address to the Friends of Justice and Humanity in the West Riding of York' proclaimed its inadequacies.

It had been proved that children of very tender years had been subjected to Factory Labour, and we demanded that none under nine years should be allowed to work at all in those

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<sup>62</sup> Osborne, *Osbornes London and Birmingham Railway Guide*.p.125

<sup>63</sup> a situation which led directly to a decision to close the Tring workhouse, returning it to the landlord, William Kay, and auctioning the contents

<sup>64</sup> Berkhamsted *Guardians Minute Books* 21 Dec 1835 Vol.1 p.67 HRO BG/BER 1

establishments ~ this demand has been granted, except in the case of lace and silk mills. But when we have acknowledged thus much, we have declared all that is of any material value in Lord Althorpe's Act. What remains of it is for the most part either deceptious or unjust...<sup>65</sup>

And why are Silk Mills also excepted, with regard to employing children under 13 more than the 48 hours per week? The work is cleaner, and the atmosphere is purer, but *the human machine has a mind to teach as well as a body to tire*, and why should the silk manufacturer be allowed by clauses 7 and 8, to take a child of four years or five and work it ten hours a day, for in these mills there is no restriction of age in this respect.<sup>66</sup>

other textile mills, despite evidence of child labour collected from silk mill owners and employees, made little economic difference to the Hertfordshire mills, where very few were employed under the age of 8. Joseph Grout, proprietor of silk mills at Yarmouth, Norwich, Bungay, and elsewhere in East Anglia, saw no objection to restricting the working hours of children under the age of thirteen, but nevertheless told the Commission,

...The measure is quite uncalled-for with regard to the silk trade, as the labour of children is so extremely light, for it is only to watch a thread, and tie it when it breaks.<sup>67</sup>

Only one of the silk masters in Hertfordshire, Thomas Rock Shute, returned answers to the questions posed by the Commission, and he broadly echoed both

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<sup>65</sup> *Address to the Friends of Justice and Humanity ...*, from the Meeting of Delegates of the Short Time Committees, ...Assembled at the Yew Tree Inn, Birstall, 28 Oct 1833 p2

<sup>66</sup> *Address to the Friends of Justice and Humanity ...*, from the Meeting of Delegates of the Short Time Committees, ...Assembled at the Yew Tree Inn, Birstall, 28 Oct 1833 p.15

<sup>67</sup> PP 1833 Vol.XXI *Factories Enquiry Commission. First Report on the Employment of Children in Factories*. Evidence taken before the Central Board Session 29 Jan-29 Aug 1833 p11.

Elaboration of the duties involved revealed them to be rather more onerous, but nowhere does Grout, a manufacturer in East Anglia, admit them to be injurious:

But they have to stand, have they not? \_\_\_ They have to stand in most instances.

Is not such labour extremely irksome? \_\_\_ They have to walk backwards and forwards, which is only gentle exercise. If you saw them when they have left off work you would not say that they had been severely employed. Always when the weather is fair they run and jump about, and play for about an hour before they go to bed. They leave off at seven, and in summer they play during one or two hours.

the opinions and evidence of his fellow silkmasters, and of those manufacturers that in 1818 and 1819 opposed the factory bill introduced by Sir Robert Peel for the amelioration of the condition of children in cotton factories.

None of the employments are injurious; the labour is all much the same. At Rickmansworth, where the factory has been at work during only two years, I can form a better estimate of the effects of the employment on the children; their appearance has much improved, they appear to be better clothed, better fed, and look more healthy. I never knew an instance of a person growing deformed from the employment; I only know of two instances out of about five hundred persons, whom I at present employ, and those proceed from natural causes. If any person was to go round the factory, and select the most healthy and finest children there, I have little doubt that they would be those who keep their time most regularly and work longest; they earn more money, and are consequently better fed and clothed.<sup>68</sup>

His evidence not only stressed the congenial nature of the work, but hinted, like that of John Sharrer Ward, (who gave evidence before the Commissioners in 1816, and again in 1833) that in employing children in his manufactory, he was performing a public service.<sup>69</sup> Vernon Royle too, had echoed this underlying sense of service to the community in his defence of the factory system

The people are poor because they have no trade, no tools, nor can capitalists be found to lend them any; all we contend for is, that there is less suffering among the poor, at the present time, in the manufacturing districts, than there was in those districts before the manufactories were established in them.<sup>70</sup>

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<sup>68</sup> PP 1834 Vol.XX *Supplementary Report as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire 114 Answers of T R Shute, A68 p136

<sup>69</sup> Mr John Sharrer Ward, with a mill at Bruton in Somerset may have been related to the Woollams of St Albans. His son, Thomas Ward, managed a second silk mill at Frome. Mrs Chas. Woollam had been a Miss Betsy Ward, whose brother, Thos. Ward from nr Bridgewater in Somerset had interests in the silk trade. In March 1841 (by then widowed) she wrote to Lord Melbourne on behalf of 'her beloved Brother who is a sufferer by the late changes in the silk trade.' Herts R.O. D/ELB F39/30-31

<sup>70</sup> Royle 'The Factory System Defended' p.15

By contrast, Samuel Taylor Coleridge had written scathingly in 1818 of

... the assertion hazarded by the opponents of Sir R. Peel's Bill, that Children from six to sixteen years of age, who are kept at work, standing, from thirteen to fifteen hours in the twenty-four, in a heated and polluted atmosphere, are healthier and happier than those who are employed in trades where the said grievances do not exist; and in a still greater degree "*better off*," than Children who remain at home, or follow their fathers into the fields.<sup>71</sup>

Shute's assessment must bear comparison not only with earlier arguments, but with the evidence of Daniel Fraser and of William Rastrick, given to the Commissioners in 1832. As evidence of the hardships endured by children at the Rookery mill, Fraser cites three children; Elizabeth Taylor, now nearly fifteen, who had started at the mill at between seven and eight years old; Richard Love, between twelve and fifteen, who had been chastised for wasting silk; James Naylor, who was fined 7d out of his 2s wages, for losing two hours work one morning.<sup>72</sup>

These children appear to have been local village children, rather than pauper apprentices. The family names of Naylor, and Taylor, are common in the Oxhey and Watford districts, the 1851 Census offering several examples of an unmarried 'Elizabeth Taylor', including one resident in the Rookery Cottages ... she is, however, more than fifty years of age, as is the James Naylor resident in Boot Yard. These people may or may not have been related to the James and Elizabeth mentioned by Fraser, or it is even possible that he was recounting long past instances related to him by people no longer working at the mill. After all, he himself states the difficulty in gaining entry to the mills, and the greater difficulty in persuading employees to furnish evidence. Too much significance should not be read into the difficulty of entry to the mill, since it was not an unusual feature; the materials were delicate and costly; the processes jealously guarded against

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<sup>71</sup> Coleridge, *Remarks on the Objections which have been urged against the Principle of Sir Robert Peel's Bill*. p.2

<sup>72</sup> *Childrens Employment Vol 3: Reports of Factory Commissioners I 1833*. Evidence of Daniel Fraser 23 July 1832 p.537

industrial espionage in a highly competitive market.<sup>73</sup> It may seem preposterous to consider that Fraser could have cited incidents perhaps twenty or thirty years old, but much of the first-hand evidence for factory reform did stretch back many years: William Rastrick, aged 34, and no longer employed in textile mills, answers questions as to his experience in Shute's Watford mill from the age of eleven.<sup>74</sup>

Under Shute, the main throwing mill at Oxhey worked round the clock, open for eleven and a quarter hours each day, and manned by a separate shift at night. The mill was in operation six days a week, other than for two days at Christmas, two at Easter, two at Whitsun, and four half holidays which were given over the three days of Watford Fair, and on Shrove Tuesday. Overtime was offered four days in the week, for six months of the year, and although Shute stated that he employed no apprentices, the factory returns of 1839 as shown in Table 7.5, record 49% of employees at Watford under the age of 15, 71% of those at Rickmansworth, and 85% at Chesham. Children under the age of nine formed 16% of the workforce at Watford, 19% at Rickmansworth, and 23% at Chesham; the figures translate numerically as sixteen children under the age of nine employed in the Watford mills<sup>75</sup>, nine at Rickmansworth, and eight at Chesham. Only the Rookery operated at night, no-one under the age of fourteen being employed to work the ten and a half hour night shift, although it was admitted that approximately half, of a complement of thirty three night-hands, were between the ages of fourteen and eighteen.<sup>76</sup>

The Factory returns for 1839 record six silk mills in Hertfordshire employing a total of 784 people. Of this workforce 19% of males and 12% of

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<sup>73</sup> Osborne remarks upon the security aspects of mill management during his visit to Tring mill in 1840.

<sup>74</sup> In 1851, 17 year old Emma Restrick, a silk throwster at Shute's mill, is living with her grandmother in one of the Rookery cottages at Oxhey. Sched 54. Dist. 2b. Is there a connection?

<sup>75</sup> There were two mills in Watford parish, the larger of which was the Rookery Mill.

<sup>76</sup> 'I employ thirty-three night hands for spinning and throwing; half are boys from fourteen to eighteen years of age, and the others men and women, chiefly the latter.'

PP 1834 Vol.XX *Supplementary Report as to the employment of Children in Factories* Part II 25 March 1834. Answers of Manufacturers to Queries. Western District : Hertfordshire No. 114 Answers of T R Shute, Watford, Rickmansworth and Chesham. A.48 p.135

females were under the age of ten years old. Sixty-eight percent of males and 49% of females were under 15, while only 13% of males and 17% of females employed in this industry are aged 21 or above

**Table 7.5 Silk mill employees in Hertfordshire by age, gender, and parish 1839**

No. Mills	Parish	% Under 10			% Under 15			% 21 and above		
		M	F	All	M	F	All	M	F	All
1	St Albans	29.8	1.9	15.0	80.9	22.6	50.0	14.9	39.6	28.0
1	Hatfield	0	7.7	3.8	69.2	61.5	65.4	0.0	7.7	3.8
1	Rickmansworth	21.9	18.3	19.3	90.6	63.4	71.1	9.4	3.7	5.3
1	Tring	16	11.9	14.2	68.5	55.2	62.7	11.0	14.0	12.3
2	Watford	21.3	12.7	16.4	55.3	43.7	48.6	27.7	20.6	23.6
6	Total	19.1	12.0	15.3	68.7	49.4	58.4	13.1	17.0	15.2
	Chesham	19.3	28.9	23.2	80.7	92.1	85.3	3.5	7.9	5.3

Source: *Factory Inspectors Report 1839*

Two years later, Robert Saunders, Inspector of factories, visited mills in Hampshire, Devon, Somerset, Wiltshire, Berkshire, Buckinghamshire and Hertfordshire, and felt able to write in his report:

Further personal inspection and examination of children confirms me in the opinion that at 11 years of age 69 hours weekly labour is not prejudicial to their health and spirits, and in many factories I have no doubt but even younger children might with safety and advantage be thus employed, but I am not inclined to recommend as a general measure any under 11 to be employed 69 hours, unless it were determined to admit only one class, and thus exclude all persons not authorized to work for 69 weekly hours; in which case (but in no other) a full consideration of the increased difficulty that must occur to many manufacturers and operatives, I would as a choice of evils advocate that exclusion should be limited to all under 10, rather than to all under 11.<sup>77</sup>

As shown by a comparison of Tables 7.5 and 7.6, measures enacted between 1833 and 1851 to regulate the hours of factory labour significantly reduced the employment of children under the age of ten, cutting the proportion of this age

<sup>77</sup> Reports of Inspectors of Factories 1835-42 *Childrens Employment* Vol 2. pp.3-4. Report of Robert J Saunders, 5 Feb 1835



group from 15.3% of the total Hertfordshire workforce in silkmills, to just 4.8%. The most remarkable reduction is at Watford, where the proportion falls from 16.4% in 1833 to 2.4% in 1851. The proportion of children employed under the age of 15 has also fallen dramatically, from 58.4% in 1833 to 29.8%. A significantly more modest increase in the proportion of workers over the age of 21 than might be suggested by such precipitous falls in child employment, from 15.2% to 20.3%, indicates that the 'slack' has been absorbed by the increase in workers aged 15 to 20 years.

**Table 7.6 Silk mill employees in Hertfordshire by age, gender, and parish 1851**

No. Mills	Parish	% Under 10			% Under 15			% 21 and above		
		M	F	All	M	F	All	M	F	All
1	St Albans	7.4	12.2	3.5	45.3	41.5	16.0	31.6	34.1	12.1
0	Hatfield									
1	Rickmansworth	16.7	7.5	9.9	54.2	41.8	45.1	29.2	25.4	26.4
1	Tring	9.4	5.1	7.0	38.6	36.1	37.2	29.1	28.5	28.8
1	Watford	2.2	2.6	2.4	52.2	39.7	45.1	27.8	25.2	25.2
4	Total	7.4	6.1	4.8	45.2	39.0	29.8	29.5	27.7	20.3

*NB. These figures are calculated from the Census Returns for each SRD, and may not include mill workers living outside the area.*

**Table 7.7 Children as a proportion of Hertfordshire silkworkers  
1839-1868.<sup>78</sup>**

	% Children under 11			% Children between 11-13			% Under 13		
	M %	F %	All	M %	F %	All	M %	F %	All
1839	28.9	18.0	23.1	19.9	15.6	17.6	48.8	33.6	40.7
1847	*	*	*	*	*	*	31.8	28.0	30.0
1862	10.4	7.7	8.7	31.6	23.1	26.1	42.0	30.8	34.8
1868	13.3	6.7	8.8	23.0	18.9	20.2	36.2	25.5	28.9

\*Figures for 1847 not given in these age groups.

If the figures for 1839 are taken as a base line, the number of boys under the age of eleven fell by 60% between 1839 and 1862, and a further 15% between 1862 and 1868, contrasted with a 25% fall in the employment of young girls between 1839-62, and 38% between 1862 and 1868, although the proportional employment figures for girls remained almost constant between 1862 and 1868. The Factory Acts and child-centred legislation such as the Education Acts, must claim much of the credit for the lowered rates of child employment. Analysis of the overall proportional rise in the employment of children aged 11-13 during this period, most particularly from 1839-1862, must take account of the need to employ these slightly older children in the place of their younger comperes, and in Hertfordshire an increase in the local demand for silk workers as Woollam's new mill at Redbourn, (1857) with a workforce of whom, even in 1881, 64% were under the age of fifteen. The dramatic fall in real terms at the end of the 1860's may be partially explained by omission of figures for the mill at Rickmansworth in the factory returns.

<sup>78</sup> The age groups customarily studied in the census, of 0-9 years and 10-14 years (inclusive) do not always correlate exactly to the categories used in the reports of the factory inspectors, which conform to the legislative regulations. In the 1839 report used above, full coverage is given to all ages, and to their distribution through individual mills, but later reports note only the county statistics for children under thirteen years of age, in silk mills those between eleven and thirteen years, of boys between thirteen and eighteen, of girls over the age of thirteen, and of men over the age of eighteen. Tables using these figures therefore supplement the census figures, showing how the proportion of children making up the total labour force of the Hertfordshire silk mills changed during the nineteenth century.

County figures disguise the local response to the decline in child labour, but Table 7.8 shows how the composition of the workforce changed at local level, and how silkmasters responded to legislative and economic constraints.

**Table 7.8 Child silkworkers in individual mills and parishes proportional by age and gender 1839-91<sup>79</sup>**

	% Under 10				% Under 15							
	1839 M	1851 M	1839 F	1851 F	1839 All	1851 All	1839 M	1851 M	1861 M	1871 M	1881 M	1891 M
St Albans	29.8	7.4	1.9	12.2	15	3.5	80.9	45.3	*	*	19.5	29.6
Hatfield	0		7.7		3.8		69.2					
Rickmansworth	21.9	16.7	18.3	7.5	19.3	9.9	90.6	54.2	77.1	*		
Tring	16	9.4	11.9	5.1	14.2	7.0	68.5	38.6	*	*	38.9	35.6
Watford	21.3	2.2	12.7	2.6	16.4	2.4	55.3	52.2	*	*		
Redbourn									86.7	72	64.3	70.6

	% Under 15						% Under 15					
	1839 F	1851 F	1861 F	1871 F	1881 F	1891 F	1839 All	1851 All	1861 All	1871 All	1881 All	1891 All
St Albans	22.6	41.5	*	*	32.9	31.2	50	16	*	*	17.5	30.6
Hatfield	61.5						65.4	*				
Rickmansworth	63.4	41.8	54.8	*	*	*	71.1	45.1	62.0	*		
Tring	55.2	36.1	*	*	17.7	*16.1	62.7	37.2	*	*	23.1	20.6
Watford	43.7	39.7					48.6	45.1				*
Redbourn			42.9	53.0	32.0	29.9			56.0	59.0	38.9	39.7

Spaces left blank denote mills not in operation, \*figures not available.

### Apprenticeships at Tring

The practice of assigning pauper apprentices did not end with the 1819 Childrens Employment Act, nor with the 1834 Act, nor even with the 1847 or 1851 Acts, despite Pamela Horn's assertion that parish apprenticeship in textiles

<sup>79</sup> Figures for 1839 calculated from the Factory Inspectors Report, figures thereafter calculated from the decennial census. Later Factory Inspectors Reports tend to record county figures and are not always consistent as to selected age groups eg 1847 records all those under 13, all between 13 & 18, and all above 18. The 1862 & 1867 Reports record all those under 11, all between 11 & 13, males between 13 & 18, females above 13, and males above 18, but in addition, the 1867 Report differentiates between those employed in spinning and those in weaving.

was 'virtually dead' by the 1820s.<sup>80</sup> Dorothy George states that parish apprenticeship 'lasted till 1844'<sup>81</sup> but the Tring mill continued to take female children aged 11 to 14 years from the London Vestries until 1867.<sup>82</sup>

From Tring, the master of the Silk Mills wrote in 1838 to the Aylesbury Guardians in the neighbouring county of Buckinghamshire, to recruit extra labour. In response, the Guardians ordered 'that the Relieving Officers do make a return at the next Meeting of all persons receiving relief from this Union who have children from 8 to 16 years of age and capable of work at the Tring Factory.'<sup>83</sup> The Aylesbury guardians took their duties seriously, visiting the Tring Mills in August 1838 and March 1839 in order to inspect the conditions and assess the care of the children. Both Reports are generally favourable, finding the accommodation clean and the children healthy. The first report concentrates upon the material well-being of the children, that they are well fed, well housed, and well behaved, while the second report takes greater account of their moral development and education, the lack of observance given to the Sabbath causing particular concern. This latter report also voices grave concerns regarding 'their very slender earnings which earnings were in most instances no more than barely sufficient to purchase for them the commonest necessaries of life.'<sup>84</sup> Having been acquainted with the contents of the report, the managers response was cordial, but guarded: trade was depressed, and some children still less than proficient, but, he wrote, he would do what he could to 'make some addition to the earnings of those whose activities warrant me in doing so'<sup>85</sup> This suggests that conditions at Tring were little better than at Halstead where it was recorded in 1831-2 that some workers had been in receipt of the full poor rate because of inadequate wages;<sup>86</sup> in March 1839 the

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<sup>80</sup> Horn, *Children's Work and Welfare* p 25

<sup>81</sup> George, *England in Transition* p.130

<sup>82</sup> In the Hertfordshire census for Tring 1871, there are 40 designated 'apprentices' living in Brook Street, of whom 21 are under the age of 15. Tring 12 Sched 24

<sup>83</sup> *Aylesbury Guardians Minute Book* : 6 June 1838 pp156-157 Bucks RO Ref.G2/3

<sup>84</sup> *Aylesbury Guardians Minute Books* 20 March 1839 pp309-310 Bucks RO Ref G2/3

<sup>85</sup> *Aylesbury Guardians Minute Books* 10 April 1839 Bucks RO Ref G2/3

<sup>86</sup> PP. 1831-2 Vol.XV *Report from the Committee on the Bill to regulate the Labour of Children in the Mills and Factories of the United Kingdom* p.535 Q. 10718

Aylesbury Guardians recorded their reluctance to continue paying allowances to children at the Tring mill.

The education of the children at Tring was not to be neglected. Daniel Fraser had given evidence in 1832 that there was neither Sunday school nor week day evening school at Oxhey for the children of the Rookery, but here in Tring there were plans for a community school that would benefit everybody in the immediate district. The silk mill would educate as well as employ, expending some part of the profits accumulated by the cheap labour of the children, on their schooling.

I have now nearly completed my arrangem[en]ts for establishing a Day School intended not only for the benefit of the Children employed in the Mills but for the infant part of the population in the Neighbourhood. I beg to solicit the co-operation of the Board to enable me to carry these plans into effect much good may be done by their impressing upon the minds of the children and those under whose care they are placed the necessity of their attending to our mutual wishes.<sup>87</sup>

Such an arrangement was neither innovative nor, at this date, unusual. Rowbotham, however generous in opening the school to the local community, and however philanthropic the intentions of David Evans & Co., overall, was fulfilling his obligations to the apprentices in his employ. The 1802 Health and Morals of Apprentices Act, stipulated that every apprentice:

..... shall be instructed, in some part of every working day, for the first 4 years at least of his or her apprenticeship ..... in the usual hours of work, in reading, writing, and arithmetic, or either [*sic*] of them, according to the age and abilities of such apprentice, by some discreet and proper person, to be provided and paid by the master or mistress of such apprentice, in some room or place in such mill or factory to be set apart for that purpose...<sup>88</sup>

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<sup>87</sup> *Aylesbury Guardians Minute Books* 1839 10 April 1839 Letter from Henry Rowbotham. Bucks RO Ref: G2/4 For the recommendations of the inspectors of the Aylesbury Union regarding the establishment of a school, see Appendix VI pp.376-7

<sup>88</sup> *Health and Morals of Apprentices Act, 1802* (42 Geo. III, c.73) VI

Since he employed no apprentices, Shute was under no obligation to provide schooling at Oxhey, nor at Rickmansworth, and, as Robert Saunders remarked in 1835, schooling for any of the silk mill children was likely to be erratic:

As the employment of Children in silk mills is permitted for ten hours each day, and the two hours' attendance at school not so practicable as in cases where they are employed only eight hours, their attendance varies from an hour to an hour and a half each day.<sup>89</sup>

In subsequent years, Rowbotham took children from St George's Hanover Square and St Marylbone under the following terms :

... each Child to be provided with two entire suits of new Clothing, a Bible and Prayer Book, and Five Guineas premium, two Guineas to be paid at the time of binding in this County, the residue two or three Years hence to all then living.<sup>90</sup>

Again, the terms were largely determined by the Health and Morals of Apprentices Act, which in article III stated that each master or mistress should supply every apprentice 'with two whole and complete suits of clothing, with suitable linen, stockings, hats and shoes; one new complete suit being delivered to such apprentice once at least in every year.' In his letter Rowbotham was careful to offer as reference, that 'The Parish of St George have twice supplied me with Children, and after a trial of 7 years, are now equally disposed to send them, if they had any worth my Notice.'<sup>91</sup> Some of these were certainly still employed at the mill in 1851, since twenty-five resident females between the ages of thirteen and thirty-five list their birthplace as 'St George's' or 'St Marylebone' in the 1851 Census, and of whom seventeen still worked at the silk mill. Thirty five girls between the ages of eleven and seventeen give St Margaret's as their place of

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<sup>89</sup> Reports of Inspectors of Factories 1835-42 *Childrens Employment* Vol 2  
Report of Robert J. Saunders, 5 Feb 1835 p.60

<sup>90</sup> *Minutes of the Proceedings of the Governors of the Poor* 1846-47 CWA E5216 14 April 1847 p150 Letter to the Governors of the Poor of St Margaret's and St John's Parishes, Westminster.

<sup>91</sup> *Minutes of the Proceedings of the Governors of the Poor* 1846-47 CWA E5216 14 April 1847 p150 Letter to the Governors of the Poor of St Margaret's and St John's Parishes, Westminster

birth, and seven between eleven and fourteen, St Pancras. All these were mill girls, living at Brookend, either in the apprentice house, or in the case of four of the youngest, living at the lodge. Mary Nicholson was matron to the apprentices at Brookend, and her husband is listed as 'Master of the Silk Factory'<sup>92</sup>

Two distinct groups of girls, discernable by age, but also traceable in the lists compiled by the governors of the Poor at Westminster, are to be observed at Tring: thirteen of the older girls were part of a group sent to Tring in June 1847, while a younger group of twelve, aged eleven to thirteen, had arrived only in January of 1851.<sup>93</sup>

From 1847 to 1851, Henry Rowbotham was in close correspondence with the Governors of the Poor of St Margaret's Westminster, requesting additional children, or discussing their welfare. The conditions under which the children lived and worked were recorded in the '*Report of the Medical Officers to the Board of Governors and Directors of the Poor of the Parishes of St Margaret and St John the Evangelist, Westminster, following a Visit to Tring Silk Mills, 13 May 1847.*' (Appendix VI) Children over the age of eleven worked twelve hours a day, nine on Saturday, while those under eleven worked seven hours, having 'the opportunity of going to school for three hours'. The working day began at 5.30am, the children having risen at 5. Half an hour was allowed for breakfast, one hour for dinner, work finishing at 7pm, after which the children had two hours to play or to mend their clothes.

The authors of the report, John Lavies, Surgeon, and J Wright, MD were thorough in their enquiries and open in their opinions:

We should strongly object to so lengthened a period of daily occupation, but, we were informed by the Manager, that very shortly the new Factory Regulations would come into operation, whereby the Children would be required to work 10 hours only,

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<sup>92</sup> *Census* 1851 Tring 7d, Sched 29

<sup>93</sup> For a list of children named as sent to Tring, see *Proceedings of the Governors of the Poor* 1847, 1851 Appendix VI pp.378-383

thereby affording them a longer time both for Instruction and Recreation.<sup>94</sup>

This means that the working day at Tring in 1847 was longer than that alluded to by Saunders, and actually longer than that of the Rookery in 1833, twelve hours rather than eleven. Despite the poor state of trade that had already brought many mills to short time working, the mill at Tring did not curtail working hours until forced to do so by the adoption of the Factory Act, which fixed a ten hour day for all 'young persons' and women.<sup>95</sup> As Hopkins points out, after years of struggle, the gain was no more than to establish comparable hours of work in textile factories, to those customary in the Midland workshops.

... the gaining of a ten and a half hour day which, in the form of the twelve hour day, less one and a half hours for meals, had been the accepted working day for many years in the workshops of Birmingham and the Black Country.<sup>96</sup>

The inspecting medical officers found that 'the kind and quantity of food are good and sufficient', but in view of the popular belief in the Dickensian half-starved factory child, it may be instructive to compare the diet of the mill children to that of the Tring Workhouse, (as recorded in response to complaints from inmates) in 1834.

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<sup>94</sup> *Report of the Medical Officers to the Board of Governors and Directors of the Poor of the Parishes of St Margaret and St John the Evangelist, Westminster, following a Visit to Tring Silk Mills, 13 May 1847.* CWA E5219

<sup>95</sup> Realising that by working children in relays, the normal adult working day could be extended, Grey's Factory Act of 1850 (amended by the Factory Act 1853) increased the maximum to 10½ hours, but fixed the working day between 6am and 6pm.

<sup>96</sup> Hopkins, *Childhood Transformed.* p.77



**Tring Mills Dietary 1847<sup>97</sup>***Daily*

1lb Bread

*Breakfast*

1 Pint Milk

*Dinner*

6oz Meat

Cooked with vegetables

4 days a week.

Soup or Rice or Suet Pudding

3days.

No Beer

*Supper*

About 3oz Cheese

**Tring Workhouse 1834<sup>98</sup>***Breakfast*

5oz : Bread and

1oz : Lard in addition – as much Gruel as they please

*Dinner*

7oz : clear Meat

 $\frac{1}{2}$  lb : Dumpling

3oz : Bread

Vegetables in proportion

*Supper*

5oz : Bread

1oz : Lard in addition and as much Gruel as they please

A pint Small Beer on alternate days

Women allowed  $\frac{1}{2}$  oz Tea and 2oz Sugar Per Week

<sup>97</sup> *Report of the Medical Officers to the Board of Governors and Directors of the Poor of the Parishes of St Margaret and St John the Evangelist, Westminster, following a Visit to Tring Silk Mills, 13 May 1847. CWA E5216*

<sup>98</sup> *Tring Guardians Minute Books* : 2 July 1834 'Several applicants from the Workhouse complained that the food was not fit for the inmates and expressed great dissatisfaction therewith.' HRO D/P 111 18/1 For a comparison between this scale, and the allowances of the workhouses at Berkhamsted and Hatfield, see Appendix VI pp.372, 374

From these alternative schedules, that of the mill children seems the more generous and wholesome, given their age and sex. A teenage boy would perhaps find either quite inadequate. The absence of sweet or sweetened foods of any kind is most marked, as is the absence of fruit. The diet is economical, and strictly utilitarian in that it contains sufficient nutritional value to maintain the body in a fit and healthy state for work, but no hint of luxury or indulgence.

### The Binding of Children

On at least one occasion Rowbotham chose the apprentices himself, selecting from a group aged between eleven and thirteen years of age, assembled to meet him at the workhouse.<sup>99</sup> 'Alfred' writing in 1857, may be quoted as an authority for this being common practice:

... The mill-owners communicated with the overseer of the poor, and when the demand and supply had been arranged to the satisfaction of both the contracting parties, a day was fixed for the examination of the little children, to be inspected by the mill-owner or his agent. Traffickers contracted with the overseers for removing their juvenile victims to Manchester, or other towns.<sup>100</sup>

Of the 17 selected for Tring, 11 were orphans, three had a mother, one a stepmother, one had a father in the house, and the last was 'supposed to have a father'. A further six children had relatives that objected to their removal so far away. Harriett and Emma Minshull, aged thirteen, and eleven and a half, respectively, were apparently eager to go, but their aunt, Mrs Yardley, objected. Sent to Tring between the 10<sup>th</sup> and 17<sup>th</sup> of June<sup>101</sup> as part of a group of nineteen girls, they were removed from thence and returned to London on 26<sup>th</sup> June,

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<sup>99</sup> *Minutes of the Proceedings of the Governors of the Poor, 1846-47 CWA E5216 8 June 1847*

<sup>100</sup> 'Alfred' (Samuel Kydd) *The History of the Factory Movement from the Year 1802, to the Enactment of the 10 hours Bill in 1847.* p16

'Alfred' is also quoted as an authority in Cook-Taylor *The Factory System and the Factory Acts.*, p36

<sup>101</sup> *Minutes of the Proceedings of the Governors of the Poor, 1846-47 CWA E5216 8, 10, 17 June 1847*

before their being bound as apprentices. Rowbotham paid the expenses of their return, but his chagrin was evident in his notification to the Board,

I regret these Children have been removed before the binding took place, as I hear it unsettles the others and is likely to make them discontented .... It is a great loss to have children leaving and pulling to pieces our Material for a fortnight and I expect the Board will make me some allowance for the damage done.<sup>102</sup>

In order to bind the children apprentices at Tring, consent had to be obtained from both the Westminster and Berkhamsted Guardians, but, perhaps not surprisingly, it appears to have been very much easier to obtain approval from the Guardians of their parish of origin. On 13<sup>th</sup> Sept, the Berkhamsted Guardians recorded their opposition to binding the sixteen remaining children of the group above,

... on the ground that the parish of Tring is more than 30 miles from those parishes and from where the children were residing on being sent on trial and therefore contrary to Article 58 of the Commissioners General Order and the Clerk is to attend before the Justice should the proposed binding be proceeded with and support the objection.<sup>103</sup>

The objection was not upheld, the overseers of St Margarets and St Johns, Westminster, forwarding in November, a copy of a letter from the Commissioners consenting to the binding of all sixteen children.<sup>104</sup>

In March of 1849 the Churchwardens and Overseers again visited Tring, finding the girls in excellent health, cleanly clothed, and that their food was of good quality. They were less impressed with the accommodation provided, 'Their Bedding appeared to be scanty, and not satisfactorily clean' but in the absence of Henry Rowbotham, Mr Parker promised that all should be remedied.<sup>105</sup> This had been an unexpected visit, fifteen girls were interviewed separately, and made no

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<sup>102</sup> Letter 26 June 1847, *Minutes of the Proceedings of the Governors of the Poor, 1846-47* CWA E5216

<sup>103</sup> *Berkhamsted Guardians Mins* 13 Sept 1847 Vol 3 p167 HRO BG/BER 3

<sup>104</sup> *Berkhamsted Guardians Mins* 15 Nov 1847 Vol 3 p167 HRO BG/BER 3

<sup>105</sup> *Minutes of the Proceedings of the Governors of the Poor 1849-50* pp76-77 CWA

complaint, proffered explanations were undoubtedly acceptable, since in December, Rowbotham once more informed the Governors of the Poor that he had a vacancy for six girls. 'I shall' he wrote, 'prefer girls not exceeding 12 years of age, and if Orphans so much the better'<sup>106</sup> In March 1851 there were 54 apprentices between the ages of twelve and eighteen at the Tring mills,<sup>107</sup> where in April, the Census records a total of 284 silk mill workers in the Tring area, of whom 126 were male, and 158 female, giving an overall sex ratio of 80, and of whom by far the majority were under the age of twenty: 69% of all silkworkers in the district were aged nineteen years or under.

**Table 7.9 Tring Silkworkers aged 0-19 years inclusive (1851)**  
expressed as a percentage of all Tring silkworkers

Sex Ratio	Male %	Female %	Total %	Apprentices %
75	67	71	69	28%

As all these apprentices fall within this 0-19 age group, then it is calculated that apprentices constitute 28% of all those under twenty, and it becomes plain that the mill at Tring depended to a very high degree upon the labour of its pauper apprentices. This is most strongly emphasised when it is considered that this level of apprentices, if all were female (as these were) would constitute 49% of females under the age of twenty, 35% of the entire female workforce, and 19% of the entire workforce at the mill. The sex ratio of mill hands drops from 80 overall, to 75 among those under twenty, but this is still very much higher than the national figure of 43 overall.<sup>108</sup>

Pauper apprentices continued to arrive from London, although the Berkhamsted Union Board of Guardians voiced misgivings. Objections were not

<sup>106</sup> *Minutes of the Proceedings of the Governors of the Poor 1849-50* : 4 December 1849 CWA

<sup>107</sup> *Minutes of the Proceedings of the Governors of the Poor, 1851* pp 284-50 20 March 1851  
*Report of the Churchwardens and Overseers visit to the Apprentices and Children on probation at Tring Mills, Herts.* CWA E5219

<sup>108</sup> See Tables 3.7 and 3.8, Chapter 3, pp. 71-72 for national sex ratios in the silk industry.

grounded in distaste for child labour in the mills, but on the failure of silk throwing to ensure the future prosperity of the individual once the apprenticeship was ended. In 1867 the Board refused categorically to sanction the binding of 20 children from the Westminster parishes to Mr Evans at Tring mills, stating their objections in the strongest possible language:

The Board received a notice from St Margarets and St Johns Westminster, proposing to bind 21 Children to Mr David Evans of Tring Silk Mills to learn the trade of a silk throwster and enquiring if the Bindage is open to any objection and the Board on the grounds set forth in their minutes of the 22 July direct the Clerk to inform the Director that the binding is open to the most serious objection and that the Board will by every means in their power oppose such bindage.<sup>109</sup>

The minutes of 22 July record the Board's objection '...on the ground alone that the binding of Children to work at which as a rule they will be unable to earn their living when out of their time Consider the proposed binding as open to the most serious objection...'

Nevertheless, the 1871 census records a large number of children and young persons from Westminster, the older of whom may well have come to Tring before 1867, but there are also several aged twelve or thirteen, and two aged 11 years, which suggests that their binding may have taken place while they were under age. There was a precedent: in 1851 it was reported that the Factory Inspector refused to believe that a child called Rosanna Pearce was of suitable age, although she appears to have been bound anyway.<sup>110</sup> Few of the apprentices appear to have remained in the Tring area after the expiry of their apprenticeship, fewer still remaining in the silk mills. Although it is difficult to trace accurately the movements of female children as they mature and marry, there is little

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<sup>109</sup>*Berkhamsted Guardians Mins* 16 Dec 1867 Vol 6 p298 HRO BG/BER 6

<sup>110</sup>*Proceedings of the Governors of the Poor* 1849-50. 31 Jan 1850 p401 CWA E5218 In areas where local children worked in the mills schools could play an important part in monitoring under age workers. The Log Books of St Marys School Rickmansworth record that in 1864 of 3 girls taken to work all day at the mill, one was under the age of 11, and ought not to have been taken. A note was appended to see Mr Penny, the mill foreman, about the matter. Ref. 2709 RHS

evidence in any of the Tring Census records from 1851 through to 1891, of significant numbers of these apprentices remaining in the district.<sup>111</sup> Emma Ward, who came to Tring in 1847 as one of a group of girls from St Margarets Westminster, remained unmarried and continued to work at the mill until some time after 1871. In 1851 she is living in the apprentice house with all the other girls, but in 1871 she is lodging with a fellow one-time apprentice girl, now married with a young child. Mary Ann Reeve is identifiable (probably) as the child Mary Ann Aldridge, who arrived in Tring in 1851, because there is no other child of that name within two years of suitable age.<sup>112</sup> In addition to evidence of birth, age, and name, she is listed in 1871 as being an unemployed silk throwster. Her husband William, a gardener, is therefore the 'breadwinner', but Mary Anne is far from idle: as well as the baby, one year old Sarah Jane, to care for, she has two lodgers, both employed at the silk mill. Emma, at 34, is close to her own age, and Ellen Bostock, at 21, a decade younger, but also from the London parish of Westminster. Ten years later, Emma and Ellen are no longer to be found among the silk workers of the town, Mary Ann has not returned to the mill, her two children are both at home, and their lodger is an elderly widower.<sup>113</sup> The Reeves are still living in Frogmore Street in 1891, with their son Frederick, but without lodgers.<sup>114</sup>

By 1881, all silkworkers under the age of fourteen are recorded as born in the vicinity of Tring, and only one is designated as being a 'lodger', or as having no obvious relationship to the head of house. In addition, there are only three married women of suitable age and birthplace, still engaged in the production of silk, who may conceivably have been among those children selected by Henry Rowbotham in June 1847, or sent in 1851.

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<sup>111</sup> The pauper apprentice girls are loosely identifiable by their place of birth, and tentative identification can be made thereafter using a combination of age and christian name. Problems arise when the name is a common one, such as Elizabeth, or Mary Ann, and there are several children of similar name close in age.

<sup>112</sup> In the 1851 census Mary Ann Clark, of similar age, who came to Tring with the same group of girls, is listed under the name of 'Ann', living in the Apprentice House

<sup>113</sup> *Census* 1881 RG11/144 1449 6 5

It is curious that in the early years of the Tring mill, the manager seems not to have applied for the labour of the Tring poor. Having taken so many out of district apprentices, it might have been expected that the Tring poor might have been similarly employed. Between 1829 and 1835 there are recorded in the Vestry minutes, several instances of measures to employ the male able-bodied poor,<sup>115</sup> but no mention is made regarding employment of the female poor, or the children of the poor. The dominance of the straw plait industry in this area offers one explanation for this omission. Inside and outside the workhouse, a high proportion of the women and children of Tring were engaged in straw plaiting.<sup>116</sup> The workhouse at Tring was not only equipped with Kitchen, Pump Room, Mill Room, Bakehouse, Brewhouse, Barn, and Pigsty, but also with a Plait Room furnished with a plait mill, for the employment of the poor.<sup>117</sup>

In 1851, 45.4% of children in the Berkhamsted region under the age of 15 were engaged in the plait trade<sup>118</sup>, in the environs of Tring itself, (districts 7a-7i) this figure drops to 20%, but of those children in employment, 68.5% were so occupied, as against 20.5 % of children working in the silk mill. These districts include the urban parts of Tring, where occupations for children, as for adults, were more diverse.

**Table 7.10 Tring 1851 :Percentage of Children 0-14 years working with Straw or Silk.**

	Of All Children			Of Working Children		
	%M	%F	% All	%M	%F	% All
<b>Straw</b>	13.4	26.1	20.0	52.8	79.7	68.5
<b>Silk</b>	5.8	6.2	6.0	22.7	18.9	20.5

<sup>114</sup> *Census* Tring 1891 Dist. 11 Sched 20

<sup>115</sup> In 1826 the Tring Vestry had even considered 'the Utility of defraying the Expenses of the Passage of such Families who may be inclined to emigrate to America' so great were the demands upon the poor rate. *Tring Vestry Minutes* 10 Feb 1826 HRO D/P 111 8/20 For the organisation of labour for male paupers, see Appendix VI

<sup>116</sup> See Goose . 'Workhouse Populations in the Mid-Nineteenth Century : The Case of Hertfordshire'.

<sup>117</sup> Workhouse of the Parish of Great Tring : 'An Inventory of Household Effects ' dated 20 July 1826 Inspected and valued by Thomas Knight. HRO D/P 111 18/4

<sup>118</sup> Goose, *The Berkhamsted Region*. p.41

In the outlying villages, such as Puttenham, where 80% of working women worked at straw plaiting,<sup>119</sup> all working female children were similarly engaged in plaiting, as were 67% of boys. Indeed, 44% of all children, and 81% of working children were already employed in the plait trade, leaving few surplus children to meet Henry Rowbotham's criteria stated above, of 'not exceeding the age of twelve'.

Major J. G. Burns noted in his Report to the Commissioners:

The silk manufacturers in Herts and Bucks, who are under the Act, complain much of their trade being injured by the early age at which plaiters commence work. By the time they are old enough to be employed in these works they can earn as much or more than they at first can afford to pay; and such is the preference for the straw plait, as being less restrained, that they continue in it even on smaller gains than what they could earn in silk factories.<sup>120</sup>

Burns was not the first to note this preference of the local population, the author of Osborne's railway guide having remarked upon it in markedly similar fashion,<sup>121</sup> and the correspondent of the *Morning Chronicle* attested, with some disapproval, to the extreme youth of the plait workers.

...the straw-plait affords employment, however, not only to the adults of both sexes, but to children of the most tender age. From the age of three years many of them are sent straight to the straw-plait school, where they are taught to plait; but in very few of them is anything else taught. Probably, the worst feature in connection with this kind of work is that it affords employment to

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<sup>119</sup> Goose, *The Berkhamsted Region*. p.30

<sup>120</sup> PP 1843 Vol. XIV *Childrens Employment Commission* Appendix to the Second report of the Commissioners. Trades and Manufactures p A11(92)

<sup>121</sup> 'The straw plait affords employment to a wide circle of the population, and being an operation that can be performed almost anywhere, it does not interfere so much with the liberty of the people, and from not imposing much restraint is preferable to the work of the mill; on a fine summer's day, numbers of women and children may be seen at their cottage doors, walking in the street, or sitting on the green sward in the neighbouring fields, with the straw plaiting going on in their hands, and at the same time enjoying the open atmosphere of nature, and the freedom of conversation'...Osborne, *Osbornes London and Birmingham Railway Guide*. p 127



children so young. As soon as they are able to earn a few pence during the week by their exertions, they are almost certain to be kept constantly to it, and no opportunity is afforded for giving any education to the children.<sup>122</sup>

A comparison of figures for the whole of Hertfordshire from 1851 to 1891 presents a deceptive picture of stable employment levels of children in the silk industry because it takes no account of distribution factors and the opening or closing of individual mills. In fact, the number of child labourers per mill was already in decline. Redbourn opened in 1857, employing some 50 persons from the immediate parish, of whom 28 were children.<sup>123</sup> The full tally of employees may have been double that number. In 1871 the Census entry for Alfred Harvey, manager of the Silk factory records the employment of 140 persons<sup>124</sup> although no more than 100 are to be found in the immediate parish. It should also be noted that a count of silk workers, or silk factory employees will inevitably miss some engineers, scavengers or those that would now be classed as auxiliary, or 'support staff'.

By 1881, Berkhamsted, which in 1851 had the highest proportion of very young child silk workers, has none under the age of 10, and very few under the age of 15. (21 males and 28 females, as compared with 65 boys and 56 girls in 1851, that is, approximately one-third of boys, and half the number of girls hitherto employed.) At St Albans, the numbers are similarly halved between 1881 and 1891, from 114 workers under the age of 15, to 60, although it is apparent that despite the intervention of Education Acts and employment regulations, the proportion of juvenile workers actually rose from 23% of employees in 1881 to 30% in 1891. Redbourn too demonstrates a continuity in child employment during these years: the number of children aged 10-14 increased marginally between 1881 – 91 (from 50 to 56 individuals) as did the proportion of workers in this age group, from 39% to 40%, giving, as shown in Table 7.9, an overall average of 28.5%.

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<sup>122</sup>*Morning Chronicle* 5 April 1850

<sup>123</sup>Census count 1861.

<sup>124</sup>Census Redbourn Sched 20, Dist. 9

The purpose of the Factory Acts was not to end, but to regulate the employment of children. Oastler was right: the labour of children was far too valuable to lose altogether. The Hertfordshire silk manufacturers all used child labour, differing only in their approach. At Tring, pauper labour continued to supply the shortfall in available local labour while elsewhere the practise had died out by 1820.

## CHAPTER 8. SILKWORKERS AND THEIR FAMILIES

In all directions the family is being dissolved by the labour of wife and children, or inverted by the husband's being thrown out of employment and made dependent upon them for bread;<sup>1</sup>

Friedrich Engels 1845

Wilde has suggested that the 'traditional' textile towns of the Pennine region were heavily reliant upon an adult male labour force, 'a more permanent craft labour force committed to silk',<sup>2</sup> indicating, together with a comparatively low proportion of children in the silk mills of the region, most particularly Derbyshire and Yorkshire, 'that here more skill was employed in silk manufacture than in other parts of England.'<sup>3</sup> This would appear to be a rather optimistic assumption. In good years, the sheer number of manufacturing premises in the region would cause pressure on the existing labour force, and ensure comparatively high levels of male employment, and in poor years, neither factory returns nor the census take account of under-employment among outworkers. He dismisses the 'mechanised silk industry in the south' as 'very rudimentary', stressing the regional dominance of silk throwing, and the lesser degree of skill needed in that branch.<sup>4</sup>

It is true that in Hertfordshire the predominant role of the mills was in silk throwing but, as previously emphasised, the district nevertheless records a much higher than average involvement of male silkworkers. It is not claimed here that greater skill was a motivating factor, but rather a comparative dearth of available female labour, largely due to high female involvement in the straw plait trade.

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<sup>1</sup> Engels, *The Condition of the Working Class in England* English Trans. p.216

<sup>2</sup> Wilde, *Growth, Decline and Locational Change in the English Silk Industry of the Nineteenth Century: A Study in Historical Geography*. p.162

<sup>3</sup> Wilde, *Growth, Decline and Locational Change in the English Silk Industry of the Nineteenth Century: A Study in Historical Geography*. p.162

<sup>4</sup> Wilde, *Growth, Decline and Locational Change in the English Silk Industry of the Nineteenth Century: A Study in Historical Geography*. p.163

The comparatively wide choice of occupation open to women meant that, by and large, wives and mothers were not faced with the situation of either not working at all, or of having to accept the discipline of factory hours, leaving a husband to return home to an empty house, and young children in the care of elder siblings, neighbouring kin, or child minders. The existence of cottage-based industry offered an employment, sometimes lucrative, sometimes very much less so, that could be fitted round the care of home and family.<sup>5</sup> Not that the straw plaiters fared any better in the opinions of contemporary social observers than did the factory girls of the northern and midland shires; their morals were considered to be equally lax, and their education as neglected. Indeed, there is evidence that almost every occupation of the working class, from domestic service to mining, was at some time viewed as harbouring immorality. Margaret Hewitt restores a measure of perspective, quoting a witness to the Interdepartmental Committee on Physical Deterioration of 1904: 'The standard of morals in a factory very largely reflects the standard outside it.'<sup>6</sup>

### **The Condition of the People**

'The manufacture of silk may be said to be the only one in Macclesfield'<sup>7</sup> proclaimed the correspondent of the *Morning Chronicle* in 1849, but in the Hertfordshire towns silkwormers, agricultural labourers, gas fitters and railway employees lived cheek by jowl in the crowded courts and alleyways. Wages might be higher in the mills than in the fields, and women and children might contribute

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<sup>5</sup> Like the silk industry, straw plaiting was subject to the vagaries of fashion but also to the common problems of cottage industry and female labour: 'In the case of the female worker, employers assumed that her earnings were subsidiary to others in the same household. Wages were never set at subsistence level (as they were presumed to be in the case of most male employments), but rather, as low as the pool of labour would bear.' Valenze *The First Industrial Woman*. p.114

<sup>6</sup> Hewitt, *Wives and Mothers in Victorian Industry*. p.60

<sup>7</sup> *Morning Chronicle* 22 Nov 1849 Letter XI 'The Silk Trade'

more, and more consistently, to the family budget,<sup>8</sup> but in Watford households of silkworkers are consistently found in the poorer parts of the town; Red Lion Yard, Meeting Alley, Hudsons Yard, Boot Yard, Chequers Yard, Old Yard, and a maze of other such Yards. Some were notorious, the Watford Vestry had noted in 1847 that some areas of the town were in desperate need of improvement, Old Yard, for example, had an open cesspool sufficiently noxious to affect cottage rents ‘...cottages there command an increased rent as the[y] are removed from the Cesspool — that nearest pays 1/6<sup>d</sup> per week, the next 2/- and those beyond 2/6<sup>d</sup>.’<sup>9</sup> yet Clarke found the condition of the courts and alleys still distressingly bad two years later, and indeed some thirty years later Alfred Thomas Brett MD, in his Annual Report for the year 1879, declared:

Many of the cottages in the courts and alleys in Watford are hardly fit for human habitation. It would do a great good if we could have artisans dwellings, after the manner of the Peabody Buildings, and I think they would pay a reasonable interest if erected.<sup>10</sup>

Old Yard in 1851 held 65 people, of whom 11 were employed in the silk mills. This may seem a relatively small proportion, but perspective alters in consideration that of the 13 households resident in Old Yard, six were at least partially dependent upon employment in the silk mills.<sup>11</sup> One family in Old Yard having as yet no connection to the silk mills, was that of James and Sarah Bolton. James was a farm labourer, and Sarah, with four young children at home aged

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<sup>8</sup> Horrell and Humphries, taking the period 1790-1865, concluded that women and children contributed between 18% and 22% of family incomes, and that since periods of low or falling contributions were accompanied by absolute or relative poverty, such periods were not the effects of higher male earnings, nor a ‘demand for women’s and children’s leisure’.

‘Womens Labour Force Participation and the Transition to the Male Breadwinner Family 1790-1865’ : *Economic History Review* XLVIII, I 1995 p.101

<sup>9</sup> *Watford Vestry Mins.* 20 Oct 1847 p.97

<sup>10</sup> *Annual Report of the Sanitary Condition of the Watford Urban District.* Alfred Thomas Brett M.D., of Watford House. 1 Jan 1880 LBH Mins 5 March 1880

<sup>11</sup> Old Yard counts five heads of household as farm labourers, two railway labourers, two on parish relief, a charwoman, a gardener, and one with no given occupation. *Census* 1851 Watford

eight, six, four, and six months, probably had no time to work.<sup>12</sup> It is suggested that in manufacturing towns children as young as eight were left in charge of younger siblings, or hired out as domestic helpers,<sup>13</sup> but there is no incontrovertible evidence here to support that contention.

Even within this band of low-cost housing, standards and status varied. Boot Yard held a majority of low status labourers, and minor craft workers such as lath renders, while Chequers Yard held labourers, but also tradesmen and craftsmen ... hatters, bricklayers, needleworkers. Hudsons Yard followed a similar pattern, although the aggregate status of residents appears marginally higher, fewer labourers, and a greater number of artisans.<sup>14</sup> Of the 77 inhabitants, seven were silkworkers, three of whom were 15 years old or under. In 1871, of the 52 residents, six were silk throwsters, one adult female, the rest 15 years old and under, none from families resident in 1851, and chiefly the children of labourers.<sup>15</sup>

Evidence from the 1851 Census confirms that, despite localised variation, some 40% of Hertfordshire silkworkers under the age of 20 were the children of labourers, 20% being the children of agricultural labourers.

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<sup>12</sup> *Census 1851 Watford 1c. Sched 118* See 'Robbery of Silk' Chapter 4 and Appendix

<sup>13</sup> *PP Reports from Commissioners 1843 Vol III Childrens Employment Commission. Appendix to 2<sup>nd</sup> Report, Trades & Manufactures Part I. p.A6*

'The intellectual and moral condition of the children of parents engaged in the paper manufactories in the neighbourhood of Maidstone, is, alas! too much like the condition of all the other children in this country whose parents are compelled to labour for the means of subsistence. In cases where the mother as well as the father works in the factory, they generally leave home about 6 or 7 o'clock in the morning; and if there happen to be one of the children old enough to take care of the others, and but a young age is deemed sufficient for this purpose in many cases, infants being left in the care of children from 8 to 10 years of age, the parents not returning till 7 or 8 o'clock in the evening'....

<sup>14</sup> The households of labourers, artisans, and small tradesmen included that of William Hudson the draper, whose unmarried daughters would still be living in the same house twenty years later, in receipt of income from 'Houses and Dividends'. *Census 1851 Watford 1b Sched 36; 1871 Watford 3 Sched 140*

<sup>15</sup> In 1851 47% of all male heads of families connected to the silk trade in Hertfordshire were recorded as labourers. In Rickmansworth the figure is much higher at 67%, but relative to all labourers in the district 16% had connections to the silk trade. (51% of 'silk' family heads and 8% of all labouring heads were connected only through their children in the mills).

**Table 8.1 The Parental Occupations of Silkworkers aged 0-19 years: 1851**

	SilkWorkers		Parental Occupations					
	0-19 yrs		Labs (all types)		Ag Labs		Silk	
	No.		No.	%	No.	%	No.	%
Oxhey	36		16	44.4	14	38.9	13	36.1
Watford	103		47	45.6	30	29.1	1	1.0
Rickmansw.	61		38	62.3	32	52.5	0	0.0
St Albans	112		37	33.0	7	6.3	0	0.0
Tring <sup>16</sup>	108		33	30.6	14	13.0	16	14.8
<b>Herts</b>	<b>420</b>		<b>171</b>	<b>40.7</b>	<b>97</b>	<b>23.1</b>	<b>30</b>	<b>7.1</b>

Source: CEB's Hertfordshire 1851

While it is unsurprising that Rickmansworth, a small rural town, should have a high proportion of labouring parents, and St Albans, the largest commercial town in Hertfordshire considerably fewer, with parents earning their living in a wide variety of occupations, the case of Tring fits neither pattern. Tring was a market town with an industrial factory, that from necessity employed many young 'migrant'<sup>17</sup> workers lodged in mill dormitories or by the parish in families with which they had no kinship tie.

In St Albans the sanitary state of the town appeared to be no better than that of Watford, according to the 'great complaints' recorded

...of the noxious effluvia arising from bone-boiling establishments, piggeries, etc., contiguous to dwellings. These nuisances demand suppression, more especially as typhus fever has been prevalent, and fatal in many cases.<sup>18</sup>

The pattern of residence is repeated. Juvenile silkworkers are to be found living in

<sup>16</sup> Figures for Tring omit the 50 apprentice girls living at Brookend in the charge of a matron, and a high number of lodgers living independently of their parents. This effectively halves the number of silkworkers aged 0-19 in this district. In no other area of this study does the presence of lodgers affect the balance of the figures to any significant degree. In the Watford districts few silk-working lodgers of this age are unaccompanied by their parents; St Albans has none unaccompanied.

<sup>17</sup> Some of these 'migrant' workers were local, like Lucy Luck, (b.1848) who had lived with her parents in Harrow Yard. *Census 1851 Tring Dist 7g Sched.73*. Following desertion by her father the family was taken into the workhouse. Her brother was sent to work in the silk mills, lodging with 'the man who used to ring the mill bell' and Lucy went to work at the Tring mill in 1856-7 when she was 'not quite nine years old' lodging with a tailor and his wife. Luck, *A Little of my Life*.p1-2

<sup>18</sup> *The Hertford Mercury* 10 Oct 1857 p.3ii

the poorer streets and courts, and again tend to be the children of labourers and menial workers rather than of skilled artisans, although there are exceptions: of the five sons of William Harvey, tailor, two are silk throwsters, and two labourers.<sup>19</sup> Occupational status was certainly an important factor influencing the ability of parents to provide adequately for their children both during childhood, and in equipping them to earn a livelihood in later life, but having studied the autobiographies of working men during this early industrial period, David Vincent concludes that ‘... financial insecurity was the lot even of those working men who had the good fortune to avoid recruitment into the ranks of the casual labourers or the factory proletariat, and spent their lives in seemingly prosperous and well protected skilled trades.’<sup>20</sup>

The status of silk throwing as a skilled or even a semi-skilled trade is questionable given the youth of most silkworkers and the speed with which they were trained, but adult silkworkers were generally among the higher status inhabitants of the street or court in which they lived.<sup>21</sup> Of the twenty-two households recorded in Half Moon Yard, seven are headed by tradesmen or higher craftsmen, seven by grooms, gardeners, or straw plaiters, and eight by labourers. In Snatchup Alley, the seven silkworkers are all aged 15 years or under, and come from just three out of the 12 resident households. John Munt, labourer, had eight children living at home, aged between three and 19 years, of whom the eldest son was a labourer like his father, and the next four, aged nine to 15, were silkwinders.<sup>22</sup> The household, therefore, might have a combined income of around 25-30s per week, when all were in work. Daniel Warner, labourer, and his wife Charlotte, a plaiter, had six children, two of whom, aged 13 and nine, were

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<sup>19</sup> *Census 1851 St Albans Dist. 4a Sched 252*

<sup>20</sup> Vincent, *Bread, Knowledge and Freedom: A Study of Nineteenth-Century Working Class Autobiography*. p.68

<sup>21</sup> For example, in Half Moon Yard lived William and John Oakley, neighbours, and quite possibly brothers, William still living with his parents, William Oakley the elder, a Brewer. *Census 1851 St Albans Dist. 4a Sched 254 and 255*

<sup>22</sup> *Census 1851 St Albans Dist. 1b Sched 124*



silkwinders; two more, aged 12 and 18, were straw hat workers,<sup>23</sup> most probably working outside the home in one of the many hat factories in St Albans. Both these families had a higher proportion of working members than non-working, and a comparatively high number of children in the home. Of the twelve households here, one was headed by a pauper, but of the remainder only three were headed by craftsmen or tradesmen, all others being headed by labourers. The prevalence of multiple wage earners in these families, including a high proportion of working children, strongly suggests that the ideal of a 'male breadwinner wage' was far from being a general reality in these districts. Indeed, it appears that children were aware just how necessary to the family economy was their labour, and that often they knew what items would be paid for by their work, taking pride in their contribution that eased the burden upon their parents.<sup>24</sup>

Christopher Yard shows an even clearer example of the reliance placed upon child labour to sustain family income. Here, of 15 households, 10 have resident children under the age of 16, silkwork is almost the only occupation of juveniles,<sup>25</sup> and these are, with one possible exception, the children of labourers.<sup>26</sup> These families all record three or more sons and daughters, not all necessarily juveniles, working and still living at home; three families each have three working children between the ages of eight and 15. Here again, families do not appear to conform to assumptions that 'the presence of older children can be expected to decrease the probability of a child's participation at any given age as the income needs of the family were more likely to be met from the earnings of older siblings.'<sup>27</sup>

Why were the parents of silk factory children likely to be of the unskilled labouring class? Two reasons outweigh all others: firstly, the silk mill owners

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<sup>23</sup> *Census 1851 St Albans Dist. 1b Sched 507*

<sup>24</sup> Vincent, *Bread, Knowledge and Freedom: A Study of Nineteenth-Century Working Class Autobiography*. p 81-2

<sup>25</sup> Only one child was otherwise employed

<sup>26</sup> In one lodging family where the husband is absent, and the wife a silk throwster.

were prepared to employ children at a very early age, and for poor families it was important that every member should contribute to the family budget as much, and as soon, as possible. For a child to remain a 'scholar' even at a free charity school, had hidden costs countable in lost earnings. Secondly, there would be no apprenticeship premiums to pay. Parents may have considered, and who can say that they were not right, that work in the factory would be preferable to the labouring life. Joseph Arch wrote of the 'dark doom of the labourer's child'<sup>28</sup> which denied opportunities by reason of ignorance and poverty, and there is ample testimony that the life of an agricultural labourer could be quite as unhealthy as that of the factory worker. 'The sickly son of an agricultural labourer had as little chance of growing up to a healthy manhood as had the sickly son of a miner or a mill hand; it was a regular case of extremes meeting in a vicious circle.'<sup>29</sup> Arch, as the son of an agricultural labourer, was understandably biased, but even in the early twentieth century others noted the general, and perhaps unexpected lack of stamina of the agricultural labourer:

When an agricultural labourer begins to work on a railway, he is disposed to lie down at three o'clock in the afternoon, fatigued and incapable of continuing his efforts. After an interval of twelve months, receiving higher wages, and having better food, he will get into fitter condition to perform his task without difficulty.<sup>30</sup>

There is only minimal and highly localised substantiating evidence in the districts of south west Hertfordshire for the findings of Horrell and Humphries that 'Girls were less likely to work than boys if their father had a mining or agricultural occupation, more likely to work if their father worked in a factory,' although paternal occupations may indeed be 'correlated with differing employment

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<sup>27</sup> Horrell and Humphries, "'The Exploitation of Little Children": Child Labor and the Family Economy in the Industrial Revolution'. p505

<sup>28</sup> Arch, *The Story of his Life, Told by Himself*. p.27

<sup>29</sup> Arch, *The Story of his Life, Told by Himself*. p.29

<sup>30</sup> Brassey, *Work and Wages : The Reward of Labour and the Cost of Work*. p.v

opportunities for girls and boys' in their samples.<sup>31</sup> As shown in Table 8.2a, in central Watford 42% of both general and agricultural labourers<sup>32</sup> daughters/step-daughters/granddaughters between the ages of 9 and 14 worked, and 47% of sons. For girls, silkwork was the only occupation, for boys still the most favoured: approximately 30% of labourers' children aged 9-14 were silkworkers. Between the ages of 15 and 20 (inclusive) 86% of daughters and almost 97% of the sons of labourers, are employed. For females aged 9-20 the silk mill offered greatest employment, while after the age of 15 boys tended towards general or agricultural labouring although silk-work was still the next-favoured option.<sup>33</sup>

**Table 8.2a The Occupations of Labourers' Children in Watford Town 1851**

	Age 9-14				Age 15-20			
	Female		Male		Female		Male	
	No.	%	No.	%	No.	%	No.	%
Scholar	20	52.6	23	45.1				
At Home	1	2.6						
Unemployed					1	3.6	1	3.4
Silk	12	31.6	15	29.4	13	46.4	3	10.3
Blank	1	2.6	4	7.8	3	10.7		
Errand Boy			4	7.8			2	6.9
Straw					1	3.6		
Paper					3	10.7		
Ag Lab							10	34.5
Lab							8	27.6
All	38	100	51	100	28	100	29	100
Not working	22	57.9	27	52.9	4	14.3	1	3.4
Working	16	42.1	24	47.1	24	85.7	28	96.6

Source: *CEBs* 1851 Watford. This table includes daughters, step-daughters and granddaughters; sons, step-sons and grandsons.

<sup>31</sup> Horrell and Humphries . "The Exploitation of Little Children": Child Labor and the Family Economy in the Industrial Revolution'. pp501-2

<sup>32</sup> In these Hertfordshire districts it is most probable that 'general labourers' worked at least part of the season as agricultural labourers. St Albans, as the most heavily urbanised district, is perhaps that least likely in which such doubling would occur, but even here a number of agricultural labourers lived in the urban parishes of St Albans and St Peters.

<sup>33</sup> See also Chapter 5: Case Study Table 5.18 p.176

A comparison with the working patterns of labourers' children in St Albans reveals the effects of the straw plait and hat trade. Here, 66% of girls under the age of 15 worked, and 62% of boys, a considerable increase on the proportions found in Watford. In St Albans the silk mill was again the chief employer of the boys, where 26% worked, but 35% of girls are employed in the plait trade, leaving only 17% at work in the mills. Older sons and daughters aged 15-19 show similarly high levels of employment to that found in Watford, but the spheres in which they work differ widely. Straw plaiting, and textile based occupations other than silk throwing – hat and bonnet sewing, millinery, needlework – occupy more than 80% of girls, only 8% working with silk, as against 46% of Watford girls. The straw plait has some impact even upon the diversity of occupations open to labourers sons: in St Albans 16% work in straw, 12% with silk and only 45% record labouring occupations; in Watford 10% work with silk and more than 60% become labourers.

**Table 8.2b The Occupations of Labourers' Children in St Albans 1851**

	Age 9-14				Age 15-20			
	Female		Male		Female		Male	
	No.	%	No.	%	No.	%	No.	%
Scholar	21	33.9						
Unemployed					5	10.4	2	4.1
Textiles	8	12.9	1	1.5	20	41.7		
Silk	11	17.7	18	26.5	4	8.3	6	12.2
Straw	22	35.5	17	25.0	19	39.6	8	16.3
Errand Boy			1	1.5			3	6.1
Ag Lab							4	8.2
Lab							18	36.7
All	62	100	68	100	48	100	49	100
Not working	21	33.9	26	38.2	5	10.4	2	4.1
Working	41	66.1	42	61.8	43	89.6	47	95.9

Source: *Census 1851 St Albans 1a-c, 4a-4c*. This table includes daughters, step-daughters and granddaughters; sons, step-sons and grandsons.

Tring takes this trend a step farther, where 76% of girls under 15, and 71% of boys worked. Sixty five percent of girls worked at straw plaiting and only 6% with silk,

while 40% of boys also worked with straw, leaving few labourers' children of suitable age to commence work in the mills. Thus the need to bring pauper apprentices into the Tring mills is partially explained by the lack of locally available juvenile labour. In all three districts a similarly high percentage of 15-19 year olds were employed, but Tring had the lowest proportion of silkwomen from this cohort of young adults.

**Table 8.2c The Occupations of Labourers' Children in Tring 1851**

	Age 9-14				Age 15-19			
	Female		Male		Female		Male	
	No.	%	No.	%	No.	%	No.	%
Scholar								
Unemployed								
Textiles					1	1.6		
Silk	5	6.3	7	7.7	3	4.9	6	12.8
Straw	51	64.6	36	39.6	43	70.5	14	29.8
Errand Boy			1	1.1				0.0
Ag Lab			12	13.2			12	25.5
Lab							3	6.4
All	79	100	91	100	61	100	47	100
Not working	19	24.1	26	28.6	8	13.1	4	8.5
Working	60	75.9	65	71.4	53	86.9	43	91.5

Source: *Census 1851 Tring 7a-i*

In sum, the Hertfordshire mills relied heavily upon local labour, the bulk recruited from the children and wives of labouring men. However, in Tring the children of labourers were chiefly engaged in the straw plait, necessitating the continued employment of pauper apprentices; in St Albans there is a strong bias toward the straw plait and greater opportunity of divers occupations; in Watford they are to be found almost exclusively employed in the mills.

Mary Merryweather implied a similar prevalence of labourers' wives and daughters in the silk mills of Essex, her observation emphasising the importance of child and female labour to the family in remarking the inconvenience experienced and accepted by the labourer as a result:

the labouring men, excepting those employed in the silk trade and the other mechanical trades found in a small town, are agricultural labourers, drawn here in greater number on account of the employment given to the women and girls of their families: often to their own serious inconvenience, having to walk miles to their work.<sup>34</sup>

### **Analysis of Households with one or more members employed in the silk industry 1851-1891**

Were households with one or more members employed in the silk industry discernibly different from other households? In this study of such families, they will henceforth be referred to as 'silk' families in order to differentiate members from those of other households. Households directly or indirectly dependent upon the silk mills fall into a number of different categories, the chief of which are those in which the Head, or other members of the immediate family, gain their livelihoods from working at the mills. Closely allied to this group are the households in which more distant relatives, brothers or sisters-in-law, nephews, nieces, or lodgers, contribute less directly to the family finances. Anderson, in his study of textile workers in 1851 in Preston, found that '... of the wives of textile factory working husbands, ... 34 percent worked in factories.'<sup>35</sup> In south-west Hertfordshire, households in which husband and wife are both engaged in the silk manufacture amount to only 3% overall, although those in which wives are listed as silkworkers total 7.3%, and in 2.3 % of households, the wife was the only silkworker. This is far below the given figures for Preston, but the same phenomena noted by Anderson, that the wives of senior personnel and similarly higher paid groups did not work in the factories, is also evidenced here, where the wives of mill managers and foreman are not recorded among working wives.

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<sup>34</sup> Merryweather, *Experience of Factory Life: being a record of fourteen years' work at MrCourtauld's Silk Mill at Halstead, in Essex*.pp. 6-7

<sup>35</sup> Anderson, 'What can the mid-Victorian censuses tell us about variations in married women's employment.' p.13

Indeed, in these Hertfordshire districts, only 21% of the wives of silkworkers were also engaged in silk manufacture, the same percentage as were employed elsewhere, 58% having no stated occupation at all.

Husbands and wives in employment at the mills tend toward similar status, but such couples are rare.<sup>36</sup> Overwhelmingly, it is the younger generation in a household that is engaged in silk manufacture: 54.5% of silk households show only sons, daughters, or grandchildren, (of any age) employed in silk manufacture, as against 11% where the Head of the household alone is so employed, and 4% in the case of the head of house plus one or more of their offspring. Five per cent of households have only children and lodgers engaged in silk manufacture, and 9% are connected only through their lodgers.

**Table 8.3 Households having one or more members engaged in silk manufacture shown as a percentage of all households 1851**

	Heads of 'Silk' Households					
	Male Head		Female Head		All	
	No.	%	No.	%	No.	%
Oxhey	34	27.2	10	58.8	44	31
Watford Town	56	9.5	22	13.3	78	10.4
Rickmansworth	43	6.4	12	8.9	55	6.9
St Albans	79	8.1	31	10	110	8.5
Tring	80	10.5	31	18.8	111	11.9
<b>Total</b>	<b>292</b>	<b>9.4</b>	<b>106</b>	<b>13.4</b>	<b>398</b>	<b>10.2</b>

NB Watford includes districts 1a-1e, and St Albans 1a-1c and 4a-4c.  
Source: CEBs 1851 Hertfordshire

Averaged over all study districts, Table 8.3 demonstrates that 10% of households depended to some extent upon the silk mills, but in Oxhey over 30% of all households and almost 60% of all female-headed households have at least one

<sup>36</sup> For example, at Rickmansworth Jacob and Sarah Dunn are both 'Silk throwsters', while Robert and Hannah Carter, are both labourers at the silk mill. Did these couples work together? With regard to James and Caroline Lawton the records show that he is a silk throwster, one of the few from Cheshire (Congleton), she a 'Silk Throwster's Overlooker' born in Watford.  
*Census* 1851 Rickmansworth 1b Sched 86 and *Census* 1851 Rickmansworth 1b Sched 21

member working in the mills. This latter figure is exceptional: in Tring the figure is 19%, in urban Watford 13%, and in Rickmansworth no more than 9%.

However, as shown in Table 8.4 these three districts have a higher proportion of female headed households among the overall population, and each offers substantial sectors of alternative female employment. In the case of Tring, this is the straw plait, in Rickmansworth, some straw plaiting, but chiefly rag cutting for the paper manufacture, and in Watford, domestic service.

**Table 8.4 Heads of Household in the Silk Producing Districts by Gender 1851**

	Male Head		Female Head		All
	No.	%	No.	%	No.
Oxhey	125	88.0	17	12.0	142
Watford Town	587	78.0	166	22.0	753
Rickmansworth	667	83.2	135	16.8	802
St Albans <sup>37</sup>	979	75.9	311	24.1	1290
Tring	764	82.2	165	17.8	929
All Households	3122	79.7	794	20.3	3916
All Silk Households	292	73.4	106	26.6	398
Silk Households as % of All Households		Male 9.4%		Female 13.4%	All 10.2%

Source: CEBs 1851 Hertfordshire

From these two tables it is seen that a marginally higher proportion of female headed households (13%) have members engaged in the silk industry than do those with male heads (9%). Among silk families, the proportion of female headed households is significantly higher in Oxhey and marginally so in Tring, than in the general population, but the reverse holds true in the remaining districts. The difference between 20% of households overall headed by females, and that of 27% among silk workers families is a significant indicator of the favourable

<sup>37</sup> In the districts of St Albans 4a-4c, situated closest to the Abbey Mills, the percentage of female headed households is as high as 31%, of which more than half (18.9% of all silk households) are headed by widows. Widows head 15.4% of households in urban St Albans dependent to some extent upon the silk industry, in comparison to a figure of 14.4% for the overall percentage of widow households.



employment opportunities open to women in this sector. It should also be remembered that there is a considerable skew towards females in the overall sex ratio of the mid-nineteenth century population of south-west Hertfordshire.<sup>38</sup>

**Table 8.5 Households with one or more members engaged in silk manufacture, expressed as a percentage of all households 1871.**

	Male Head		Female Head		All Heads	
	No.	%	No.	%	No.	%
Oxhey	24	15.4	4	17.4	28	15.6
Watford Town	55	5.5	14	7.3	69	5.8
Tring (9-12)	45	17.8	18	34	63	19
Redbourn	55	*	17	*	72	*

\* Figures not available. Source: CEBs 1871 Hertfordshire

By 1871, as shown in Table 8.5 the composition of Oxhey had changed dramatically. From 30% of households in 1851 containing silk workers, the proportion has fallen to 17%, the decrease spread fairly equally between male and female-headed households, and the actual number of households involved has approximately halved. The involvement of Heads of household has generally declined, as also the absolute number of silk workers, as shown in Table 8.7.

**Table 8.6 Percentage of Heads of 'silk' households employed in the silk industry 1851-1891**

	Oxhey	Watford 1a-1e	Rick'th	Tring	St. Albans	Redb'n	All
	%	%	%	%	%	%	%
1851	50.0	7.7	7.3	20.7	23.6	*	19.8
1871	42.9	13.0	*	19.0	*	6.9	*
1881	*	*	*	24.4	44.7	4.6	19.9
1891	*	*	*	13.9	17.3	19	15.6

Source: CEBs 1851-91

Table 8.6 shows that overall the percentage of heads of household, and therefore the principal wage-earner, employed in the silk industry declined by approximately

<sup>38</sup>While the sex ratio for England in 1851 stood at 96, and for all Hertfordshire at 99, the sex ratio for the Berkhamsted Region stood at 90; for the St Albans Region at 91, and for the Watford Region at 96. See Goose, *The Berkhamsted Region*. p.28. & Goose *.St Albans and its Region*. p.37 this thesis, Chapter 5 Table 5.4 p.139

25% over a 40 year period. Despite local fluctuations between 1881-91 the long-term countywide trend was of declining involvement for heads of household. Tring and St Albans continue to count high numbers of female-headed households, and it is among these women, often widowed or 'independent', that silkworkeing heads of household tend to be found.

Between 1851 and 1861 the actual number of silkworkeers living in Oxhey fell by 30%, but although the Rookery mill was in Oxhey, many workers lived in the adjoining Watford district, and therefore assessment of these declining figures cannot be considered in complete isolation. As Watford grew, both the workforce and the importance of the mills declined.<sup>39</sup> By 1871 the number of households in which at least one family member worked at the silk mill had fallen from 44 in 1851, to 28. The 22 heads of household that had gained their living in the mill are reduced to 12, and instead of 26 households with children working in the mill, there are only nine. Perhaps the silk winders and throwsters came in closer family groups, rather than from dispersed households? There are indeed households where two or more siblings are employed at the mill, but this is not invariably the case, nor does it occur in sufficient numbers to account for the change in the character and occupational pattern of the district. The central district of Watford, (districts 1a-1e, 1851 and 1-6, 1871) in which silkmill workers were previously to be found, does not supply the deficiency found in Oxhey, although the fall in the number of workers, as in the number of households, appears less dramatic. In 1851 76 households held a total of 126 silkworkeers, and in 1871, 69 households hold 106 silk workers. The bald statistics are, however, somewhat deceptive, and the impact of the change must have had serious adverse affects upon both the workers and inhabitants of Watford and Oxhey because any reduction in household income would have consequential effects for local tradesmen of all kinds.

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<sup>39</sup> '280 people at Watford' *Census 1861 Oxhey 7B Sched 18*



Red Lion Yard, Watford



Chequer's Yard, Watford

**Table 8.7 The Declining Workforce : Watford and Oxhey 1851 to 1871**

	Silk workers 0-14		Oxhey Silk workers 15-24		All		Silk workers 0-14		Watford Silk workers 15-24		All	
	M	F	M	F	M	F	M	F	M	F	M	F
1851	12	10	11	17	38	39	35	34	13	33	52	74
1871	9	6	2	17	24	29	15	34	3	23	30	76
Loss %	25	40	82	0	37	26	57	0	77	30	42	-3

Source: *CEBs 1851, 1871 Hertfordshire*

It is apparent in Table 8.7 that older male workers have been the primary loss, the number of males over the age of 15 having fallen by more than four-fifths in Oxhey and by three-quarters in the Watford district, and also noticeable that the adult female workforce in Watford has increased both in real terms and in proportion to juvenile workers, appearing to confirm fears that reductions in child labour would lead to the increased use of cheap female labour at the expense of adult male employment in order to cut production costs. It was a widely held belief that by undercutting the cost of male wages, female labour was a prime cause of male unemployment and poverty among factory families. Gomersall takes the argument a stage further, suggesting that 'the woman worker, particularly the married woman worker, not only had less 'right' to work, she was a cause (and a consequence) of working-class poverty.'<sup>40</sup>

In the 1871 Census for this Watford district, there appear some 21 female silk weavers, (and 4 male) where none are so described in 1851; these workers are by no means all adult, illustrating both a diversification of production and involvement in the weaving process of younger workers. Despite a net decrease in the overall number of workers, 1871 shows an increase in the proportion of silkworkers between the ages of 15-24, indicating agreement with Richards and

<sup>40</sup> Gomersall, *Working-Class Girls in Nineteenth-Century England : Life, Work and Schooling*.

Hewitt<sup>41</sup> that the typical factory girl was unmarried and between the ages of 15 and 21.

The mill at Redbourn opened in 1857, but the census of 1861 records only 50 of the workforce resident within the parish of Redbourn of whom four-fifths were juveniles. Of the 37 households having one or more members engaged in silk manufacture 26 were connected only through the children. In all of Redbourn only one adult female silkworker was listed as married,<sup>42</sup> and there was a single adult male (a widower) employed. The decline in employment levels shown so clearly in Oxhey and Watford (Table 8.7) is reversed in Redbourn as the number of employees resident in the parish approximately doubled between 1861 and 1871. The low level of adult employees at this time correlates loosely to the argument of Henry Ashworth<sup>43</sup> that a young workforce indicated a young industry ~ in this case a new mill in a new location.

**Table 8.8 Silkworkers in Redbourn 1861 and 1871**

	Silkworkers		Redbourn				Sex Ratio		
	0-14		15-24		All		0-14	15-24	All
	M	F	M	F	M	F			
<b>1861</b>	13	15	0	17	14	36	87	*	43
<b>1871</b>	23	36	7	24	32	68	64	29	47
<b>Gain%</b>	43	58		29	56	47			

Source: CEBs 1861, 1871 Hertfordshire

In 1881 there are only two children under the age of 10 recorded as employed in the Hertfordshire mills, one male and one female, both at St Albans. Children under the age of 15 still accounted for 23% of silk workers overall, but by 1891 no

p.15

<sup>41</sup> Richards, 'Women in the British Economy since about 1700: an interpretation'. p.346

Hewitt, *Wives and Mothers in Victorian Industry*. p.10

<sup>42</sup> Alan Featherstone found that during the 29 years to 1887 of 31 'Silk Mill Brides' (aged 18 to 37) only 14 were under the age of 21. Featherstone *The Mills of Redbourn*. p 67

<sup>43</sup> Ashworth, *Letter to the Right Hon. Lord Ashley, on the cotton factory question, and the ten hours' factory bill*. 1833

children were employed under the age of ten<sup>44</sup> although the overall balance of the workforce is remarkably similar to that of 1851. In 1851 70% of Hertfordshire silkworkers were 15 years old or above, and in 1891 this figure has increased by just one percent, to 71% of silk workers<sup>45</sup>. As shown in Table 8.9 Tring employed the lowest proportion of workers under 15, approximately 21%, the mills at St Albans and Redbourn employing 27% and 40% respectively. Each mill takes roughly one-third of their workforce from the 15-20 age group, but Tring counts 46% of the workforce above the age of 20, against 40% at St Albans and only 27% at Redbourn. Could this still reflect the age of the mills, or does it indicate a specific policy to recruit and retain young adults? It is here postulated that the workforce profile reflects the labour force available in these districts, allied to a strong preference for youthful labour.

**Table 8.9 Silk mill employees in Hertfordshire by age, gender, and parish 1891**

No. Mills	Parish	Sex Ratio			% Under 15			% 21 and above		
		0-14	21+	All	M	F	All	M	F	All
1	St Albans	63	91	67	18.2	37.9	27.4	54.5	24.1	40.3
1	Redbourn	75	9	32	70.6	29.9	39.7	8.8	32.7	27.0
1	Tring	67	29	30	35.6	16.1	20.6	44.4	46.3	45.9
3	All Districts				41.1	23.5	28.5	36.6	38.9	38.3

Source: CEBs 1891 Hertfordshire

The national figure for the proportion of silk workers under age 14 in 1890 is 7%, (9% of males, 6% of females) and by 1895 the figure is 3.7% with 27% of silkworkers under the age of 18.<sup>46</sup> Thus the figures for the remaining Hertfordshire

<sup>44</sup> there were two children aged 10 employed at the Tring mill

<sup>45</sup> Nationally, the percentage of silkworkers under the age of 13 fell from 17% in 1850 to just 7% under the age of 14 in 1890, so a figure for Hertfordshire of almost 30% for children under 15 is undoubtedly higher than average. The national figure in 1847 for those under 18 47%, and the national figure for young persons under the age of 18 and working full time in 1895 was 23%. Percentages calculated from Factory Inspectors Reports. The years 1850-1890 do not give numbers for girls between the ages of 13-18.

National figures taken from Mitchell and Deane, *Abstract of British Historical Statistics*. p.211.

<sup>46</sup> Mitchell and Deane, *Abstract of British Historical Statistics*.p.211

mills indicate substantially higher than average proportions of juvenile and adolescent workers.

Table 8.6 shows a decrease in the percentage of household heads employed at all mills other than Redbourn from 1851-1891, but the number of households dependent in some degree upon the silk industry in Tring increased, as did the number of heads of household, particularly males, employed in the mills. (Table 8.10) This is reflected in the higher proportion (46%) of adult workers over the age of 21, despite the low sex ratio (29) for workers of that age. Similarly, all three variables fell at St Albans, although the sex ratio was considerably higher than the national average at all age groups.

**Table 8.10 Households with one or more members employed in silk manufacture by gender of head 1891.**

	St Albans			Redbourn			Tring		
	M	F	All	M	F	All	M	F	All
Household Head									
All Households	2059	533	2592	361	87	448	775	165	940
Silk Households	124	26	150	71	14	85	104	27	131
Heads emp. in Silk	23	3	26	2	1	3	17	11	28
% Heads emp in Silk	18.5	11.5	17.3	2.8	7.1	3.5	16.3	40.7	21.4
% silk households	6.0	4.9	5.8	19.7	16.1	19	13.4	16.4	13.9

Source: CEBs 1891 Hertfordshire

### Marriage and Employment

It is evident that the majority of women in the Hertfordshire silk and paper mills were unmarried, and that age contributes very substantially to this profile. Although early marriage was widely believed to be associated with the factory districts, evidence given to commissioners stating that marriage before the age of 20 was common, and to meet with married girls of 15 not uncommon,<sup>47</sup> it is difficult to prove the overall validity of such statements. In all Hertfordshire in 1851, there is only one married silkworker under the age of 20. William Norris,

<sup>47</sup> See also Hewitt, *Wives and Mothers in Victorian Industry*.p.37

aged 19, is a silk throwster at Watford, his 18 year old wife Ann, a straw manufacturer. They lived in the High Street with Ann's parents, her father a brewer's drayman, and four brothers aged 6 to 13. Early marriage for the only daughter would have been a distinct asset to the Ashby family, bringing two adult incomes into the home.<sup>48</sup> There is no discernible difference here in Hertfordshire between the age of marriage for silkworkers, and that for the general population; few married persons are listed below the age of twenty, and fewer still where both husband and wife fall into that category.

**Table 8.11 Ever Married Persons aged 15-19 in the Silk producing districts of Hertfordshire 1851.<sup>49</sup>**

Districts	Age 15-19						Age 15-19 Percentage of Married persons		
	Married Persons			All Persons			M %	F %	All %
	M	F	All	M	F	All			
Watford	5	4	9	349	331	680	1.4	1.2	1.3
Tring	2	5	7	229	289	518	0.9	1.7	1.4
St Albans	2	1	3	264	329	593	0.8	0.3	0.5
<b>Total</b>	<b>9</b>	<b>9</b>	<b>18</b>	<b>686</b>	<b>806</b>	<b>1492</b>	<b>1.3</b>	<b>1.1</b>	<b>1.2</b>

Table 8.11 contrasts the number of married teenagers with the entire age-group population of those districts, illustrating how small a proportion of the Hertfordshire population married in extreme youth. Of the eighteen young married persons, almost half were living with relatives, the remainder having an older spouse.<sup>50</sup>

Statistics for Hertfordshire support the proposition that factory hands did not marry any earlier than their contemporaries following other trades. Hewitt

<sup>48</sup> *Census* 1851. Watford 1c Sched 14

<sup>49</sup> For the purpose of comparison, Table 8.11 mirrors, in contracted form, part of the data given in Chapter 5, Table 5.9 In these tables, Tring = Districts 7a-7I; Watford = combined Watford & Rickmansworth districts; St Albans = Districts 1a-1c + 4a-4c. Source: CEBs 1851 Hertfordshire

<sup>50</sup> An exception must be the two married males of the St Albans district: these were two inmates of the prison, so that although they could not be counted as living with relatives, nor were they living independently, their normal abode and the age or occupation of their wives, remaining equally obscure.



agrees that the existence of factories did not necessarily influence age at marriage, but implies that early marriage did depend to some degree upon class, 'an excess of people married between fifteen and twenty years of age in a given population might be merely a reflection of the class structure of the district'.<sup>51</sup> If that is so, how does Hertfordshire stand where the low incidence of teenage marriage is particularly marked? In a recent study of the complete St Albans region, Goose notes the 'rarity of teenage marriage, with just 1% of the population marrying before the age of 20, a consistent feature of all parishes, and a situation that prevailed in the county as a whole at this date.'<sup>52</sup>

The Overseers of the Poor at Hatfield in Hertfordshire were convinced, as early as 1834, that the New Poor Law had proved influential in fostering a more provident attitude towards marriage. In relation to the allocation of work in the parish Chadwick asked first whether efforts had been made 'to put an end to the preference given to married men, or in other words, to the bounties on improvident marriages?' Assured that no difference was made other than that of sending younger men to the more distant work, Chadwick pursued the subject:

What has been the effect, as regards marriages, of altering the system, and paying according to the value of each man as a labourer, so far as that has been done? \_\_\_ I believe they think more about marriage. They would often formerly, as I have been informed, marry without having provided a home or a bed, or any thing, leaving all to the parish. I am not aware of any such marriages having taken place recently.<sup>53</sup>

Nevertheless, matters had apparently reverted sufficiently for the special correspondent to the *Morning Chronicle*, author of a series of letters detailing the circumstances of the labouring poor in the various counties of England throughout 1849-1851, to count Hertfordshire as an 'immoral' county, having not only a high

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<sup>51</sup>Hewitt, *Wives and Mothers in Victorian Industry*.p.43

<sup>52</sup> Goose, *St Albans and its Region*.p.42

<sup>53</sup> *Appendix to the First Report from the Commissioners on the Poor Laws* PP 1834 Vol. IV p.67A Report of E. Chadwick, Dispauperised Parishes, Hertfordshire.

proportion of ignorance above the average, but a high proportion of ‘improvident’ marriages, equating improvidence with those marriages where the groom was under the age of 21. He finds the figures for Hertfordshire, taken from the returns of the Registrar General, to be 69% above the average, in contrast to Cambridgeshire at 29%, and Essex at 35%. Bedfordshire stands highest at 142%, but he has no hesitation in grouping Hertfordshire and Bedfordshire together and castigating both.

On reference to the two counties of Herts and Beds, it will be seen that there is an aggregation of every social evil. Vast numbers, as we have already seen, of the women and children of these counties, are employed in the light domestic manufactures of lace-making and straw plaiting, which appear to have the effect (among other ill consequences) of encouraging the evils of bastardy and of improvident marriages, with a consequent increase in the population \_\_ who in their turn become dependent upon a fluctuating and badly -remunerative trade, the effect of which is to be seen in a vast amount of pauperism and crime.<sup>54</sup>

From the county figures which he tables it would appear that there is some correlation between lower figures for ‘improvident marriages’ and the return of higher figures for bastardy, except in the case of Nottinghamshire, where both figures are comparatively high. Bastardy returns for Hertfordshire, while marginally above average, are substantially lower than the majority of counties cited, notably the rural districts of Norfolk and Suffolk, and even the neighbouring counties of Essex and Bedfordshire.

Was this report an accurate representation of Hertfordshire? The silk producing districts of south west Hertfordshire as portrayed in the 1851 census do not confirm the existence of a high number of early marriages. Particular attention is paid in the *Morning Chronicle* to males under 21, but here it is clear that males are even less likely to marry early than are females. As shown in Table 8.12, in the three regions of Watford, Berkhamsted and St Albans, inclusive of non-silk

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<sup>54</sup> *Morning Chronicle*: 2 Jan 1851 p.6ii Labour and the Poor. Letter XLII The Spinning House

producing districts, fewer than 2% of individuals marry under the age of 20, and less than a quarter between the ages of 20 and 24. With these figures in mind, correlation to 69% above a national average for 1849-51, (or indeed for 1847) must be in doubt, a doubt which must extend to the accuracy of the calculated figures reproduced in the *Morning Chronicle*.

**Table 8.12 Percentage of the Population Never Married, by Age and Sex 1851**

Age group	Tring <sup>55</sup>			Watford <sup>56</sup>			St Albans <sup>57</sup>		
	M %	F %	All %	M %	F %	All %	M %	F %	All %
15 – 19	99	98	98	99	98	98	100	99	99
20 – 24	76	71	73	81	72	77	80	72	76
25 – 29	36	42	39	42	39	41	40	42	41

Source: CEBs 1851

Low marriage figures for this under 20 age group in 1851 are not an anomaly. Oxhey and Watford Town, two urban areas of silk and paper factory production where the prospect of an assured double income might be expected to encourage early marriage, may stand as representative of this area in 1871, recording a total of only seven married persons under the age of 20.

<sup>55</sup> Includes districts of Aldbury, Frithsden, Gt. Berkhamsted, Lt. Gaddesden, Northchurch, Puttenham, Tring, Wigginton. Figures taken from Goose *The Berkhamsted Region*.p.31

<sup>56</sup> Includes districts of Abbots Langley, Aldenham, Batchworth, Bushey, Cashio, Chorley Wood, Croxley, Leavesden, Mill End, Oxhey, Rickmansworth, Sarratt, Watford, West Hyde. (omitting Workhouse) Calculated from the *Census: Watford Registration District 1851* Piece Nos. RG 12 1117-1122.

<sup>57</sup> Includes districts of St Albans, St Michaels, St Peters, St Stephens, Harpenden, Redbourn, Sandridge, Wheathampstead. Figures taken from Goose, *St Albans and its Region*.p.43

**Table 8.13 Never Married Persons aged 15-19 in Watford and Oxhey 1871**

	Never Married Persons aged 15-19				All Persons aged 15-19	
	Male No.	%	Female No.	%	Male	Female
<b>Watford</b>	260	99.2	273	98.6	262	277
<b>Oxhey</b>	33	100.0	67	98.5	33	68
<b>Total</b>	293	99.3	340	98.6	295	345

Source: CEBs 1871 Hertfordshire

A slight increase in the number of early marriages (involving only five individuals) is indicated in Watford Town between 1851<sup>58</sup> and 1871, against a small decrease in Oxhey, percentage figures for early marriage remaining less than 1% for men and less than 2% for women despite a 35% increase in the age- group population. The districts represented in Table 8.14 include both rural and urban divisions, and as noted in Chapter 5 the percentage figures for both male and female marriage are lower in the urban industrial districts of Watford and Oxhey than in the more rural parts of the region. This confirms observations made by Goose with reference to the Berkhamsted region,<sup>59</sup> and to a lesser degree, the St Albans region.<sup>60</sup>

<sup>58</sup> See Chapter 5, Table 5.9.

<sup>59</sup> Goose, *The Berkhamsted Region*. p.32 'There is no indication that either women or men married earlier in either of the market towns of Berkhamsted or Tring. Indeed, in the more urban of the two, Great Berkhamsted, the opposite is true, and particularly of women...'

<sup>60</sup> Goose, *St Albans and its Region*. p.44 'if again in more muted form, the St Albans data confirms the results found in the Berkhamsted region, and contradicts the hypothesis that early marriage, particularly for women, may have been more common in town than in countryside in the nineteenth century.'

**Table 8.14 Never Married Persons aged 15-19 in the Watford and Rickmansworth Districts 1881**

SRD Area	Age 15-19 Never married			Age 15-19 All			Age 15-19 % Never Married persons			
	M	F	All	M	F	All	M %	F %	All %	
1434 Aldenham & Bushey	182	170	352	182	170	352	100	100	100	
1435 Bushey	126	154	280	126	155	281	100	99.4	99.6	
1436 Watford Town & Leavesden	168	190	358	168	190	358	100	100.0	100.0	
1437 Watford Town	178	188	366	179	190	369	99.4	98.9	99.2	
1438 Cashio	137	136	273	138	138	276	99.3	98.6	98.9	
1439	Workhouse and Leavesden Asylum									
1440 Rickmansworth & Sarratt	338	269	607	340	278	618	99.4	96.8	98.2	
1441 Abbots Langley	119	104	223	120	105	225	99.2	99.0	99.1	
All	1248	1211	2459	1253	1226	2479	99.6	98.8	99.2	

Source: *Census 1881 Watford SRD*

The percentages overall for early female marriage in the Watford Districts show no change between 1851 and 1881. The 1851 figure of 1.4% married males has halved to 0.7%, but as shown in Tables 8.10 and 8.13 the 1851 figure of 1.2% of married females at age 15-19 has remained constant although the population of both sexes has more than trebled during the intervening years. Closure of the Watford and Rickmansworth mills following several years of uncertain viability thus appear to have made little or no impression upon the incidence of early marriage. From the above Tables it is very clear that early marriages were not the norm in these semi-rural and provincial factory districts at mid-century, nor was there latitude for any substantial decrease thereafter that could be attributed either to better education, or to closure of the mills.

## Wives, Mothers, and Work

If it is asked, is female work essential in factories, I answer, I think it is. In all the families of the working classes, the wages of the women and children add, if I may use the expression, the luxuries of their condition to the mere necessities earned by the men, since all their wants now, are greater than when, to paraphrase the quotation, “man delved and woman span.” All that is needful is, that their service shall be compatible with the sacred obligations of virtue ~ shall not be beyond their strength, and shall be remunerative, and given preferentially to the unmarried.<sup>61</sup>

In the whole of the 1851 Watford and Rickmansworth Districts, 19 female silk workers are recorded as being married, accounting for 17% of all adult female silkworkers. (Table 8.15) Never-married females make up 78% of the female workforce over the age of 14, with only 5% widowed. This latter figure actually disguises the wide discrepancy between Watford, where there are no widows employed, Rickmansworth at only 3%, and Oxhey, where 14% of adult female silkworkers are widows. Horner calculated that in 1847 27% of women workers in factories were married<sup>62</sup> which means that in Hertfordshire only St Albans, where 26% of adult female silk workers<sup>63</sup> were married came close to this ‘industrial norm’. The Tring mills had the lowest percentage of married females at 12%<sup>64</sup>, Rickmansworth 15%, Watford, Cashio, and Leavesden recorded 14%, but Bushey and Oxhey combined recorded 22%, while Hertfordshire as a whole returned a figure of 17%. This contrasts with ‘male married’ which return corrected figures of 41% for Hertfordshire, 54% combined Watford and Rickmansworth, 36% Tring, and 37% St Albans. This must, however, be set against sex ratios (of

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<sup>61</sup>PP.1860 Vol.XXXIV *Reports of Inspectors of Factories* : Robert Baker Esq. 30 April 1860 p.60

<sup>62</sup> Richards, ‘Women in the British Economy since about 1700: an interpretation’. p.346

<sup>63</sup> These percentages are calculated from workers aged 15 and above, the inclusion of those aged under 15 would lower the percentages so greatly as to render them meaningless.

<sup>64</sup> Tring had a very high number of ‘apprentices’: 54 in 1851, ranging in age from 11 to 17. In 1871 there were 39, ranging in age from 11 to 19. *Census 1851 Tring 7d Sched.1, 29. Census 1871 Tring 12 Sched 24.*

employees aged 15 and above) which also vary from 49 in Watford and Rickmansworth, to 72 in Tring, and 113 in St Albans.

The figure of 56% of male silkworkers unmarried in 1851 remains virtually constant until 1891, while the percentage of unmarried females rises to 82%.

**Table 8.15 Male and Female Silkworkers aged 15 years and above by Parish and Marital Status 1851<sup>65</sup>**

<b>Females.</b>	<b>Mar</b>	<b>%</b>	<b>Unm</b>	<b>%</b>	<b>Widow</b>	<b>%</b>	<b>All</b>	<b>Sex Ratio<sup>66</sup></b>
Watford 1a-1e	5	12	36	88	0	0	41	41
Oxhey	6	21	19	65	4	14	29	90
Cashio 3a-3c	0	0	2	100	0	0	2	0
Leavesden	1	100	0	0	0	0	1	0
Bushey	1	33	2	67	0	0	3	100
Rickmansworth	5	15	28	82	1	3	34	15
Chorley Wood	1	100	0	0	0	0	1	300
<b>Sub-total W &amp; R</b>	<b>19</b>	<b>17</b>	<b>87</b>	<b>78</b>	<b>5</b>	<b>5</b>	<b>111</b>	<b>49</b>
<b>Tring</b>	<b>12</b>	<b>11.9</b>	<b>87</b>	<b>86.1</b>	<b>2</b>	<b>2.0</b>	<b>101</b>	<b>72</b>
<b>St Albans</b>	<b>12</b>	<b>26.1</b>	<b>30</b>	<b>65.2</b>	<b>3</b>	<b>6.5</b>	<b>46</b>	<b>113</b>
<b>All Herts</b>	<b>43</b>	<b>16.7</b>	<b>204</b>	<b>79.1</b>	<b>10</b>	<b>3.9</b>	<b>258</b>	<b>69</b>
<b>Males</b>	<b>Mar</b>	<b>%</b>	<b>Unm</b>	<b>%</b>	<b>Widower</b>		<b>All</b>	
Watford 1a-1e	6	35	11	65	0	0	17	
Oxhey	17	65	9	35	0	0	26	
Cashio 3a-3c	0	0	0	0	0	0	0	
Leavesden	0	0	0	0	0	0	0	
Bushey	1	33	2	67	0	0	3	
Rickmansworth	3	60	2	40	0	0	5	
Chorley Wood	2	67	1	33	0	0	3	
<b>Sub-total W &amp; R</b>	<b>29</b>	<b>54</b>	<b>25</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>54</b>	
<b>Tring</b>	<b>26</b>	<b>35.6</b>	<b>46</b>	<b>63.0</b>	<b>1</b>	<b>1.4</b>	<b>73</b>	
<b>St Albans</b>	<b>19</b>	<b>36.5</b>	<b>30</b>	<b>57.7</b>	<b>0</b>	<b>0</b>	<b>52</b>	
<b>All Herts</b>	<b>74</b>	<b>41.3</b>	<b>101</b>	<b>56.4</b>	<b>2</b>	<b>1.1</b>	<b>179</b>	

Source: CEBs 1851

<sup>65</sup> Tables 8.16 to 8.19 show the changing proportional composition of the silk mill workforce in Hertfordshire between 1851 and 1891, and should be considered in relation to Tables 7.6, 7.7 and 7.8 pp. 251-253 in Chapter 7, which consider changing age/gender proportions.

More than 47% of these married women fell into the 15-29 age group, as did almost 75% of 'adult' silkwormers, but only 24% of married men. (Appendix VII) By 1871 the ratio of married women working with silk has changed little in the countywide context, increasing by less than 1%, participation by married males having fallen by 3%. This disguises the greater changes that have taken place at individual mills within the county. Employment of married women at St Albans has fallen dramatically both in numerical terms and as a proportion of the female workforce: from 26% in 1851 to 2% in 1871, although the overall number of 'adult' females employed has risen. This pattern is reversed at Tring, possibly due in some measure to the refusal of the Berkhamsted Guardians to sanction the continued apprenticeship of pauper children.

**Table 8.16 1871 Male and Female Silkwormers aged 15 years and above.<sup>67</sup>**

<b>Female 1871</b>								
	<b>Mar</b>	<b>%</b>	<b>Unm</b>	<b>%</b>	<b>Widow</b>	<b>%</b>	<b>All</b>	<b>Sex Ratio</b>
<b>Watford 1-6</b>	5	6.6	70	92.1	1	1.3	76	37
<b>Oxhey</b>	9	31	17	58.6	3	10.3	29	83
<b>Rickmansworth</b>	2	10.5	17	89.5	0	0	19	26
<b>Tring</b>	21	28.4	50	67.6	3	4.1	74	49
<b>Redbourn</b>	12	37.5	12	37.5	0	0	32	28
<b>St Albans</b>	1	1.8	53	94.6	2	3.6	56	86
<b>All Herts</b>	50	17.5	219	76.6	9	3.1	286	52
<b>Male 1871</b>								
	<b>Mar</b>	<b>%</b>	<b>Unm</b>	<b>%</b>	<b>Wid'er</b>	<b>%</b>	<b>All</b>	
<b>Watford 1-6</b>	8	28.6	19	67.9	1	3.6	28	
<b>Oxhey</b>	9	37.5	13	54.2	2	8.3	24	
<b>Rickmansworth</b>	3	60	2	40.0	0	0	5	
<b>Tring</b>	18	50	15	41.7	1	2.8	36	
<b>Redbourn</b>	3	33.3	4	44.4	0	0	9	
<b>St Albans</b>	16	33.3	30	62.5	2	4.2	48	
<b>All Herts</b>	57	38.0	83	55.3	6	4.0	150	

Source: CEBs 1871 Hertfordshire

<sup>66</sup> Sex Ratio: Males per hundred females

<sup>67</sup> In all Tables, individuals with no recorded marital status are included in totals, but not assigned to any other category.



The number of silkworkers aged 15 and above remained remarkably constant between 1851 and 1871, the sex ratio dropping, however, from 69 to 52 indicating a tentative move towards cheaper labour. Between 1871 and 1891 two mills closed, and the overall population of silkworkers fell accordingly. As seen in Table 8.17 the percentage of married women in the Hertfordshire mills fell to 10%, and the sex ratio of adult workers dropped to 35. This indicates that the surviving mills were indeed making increasing use of female labour at the expense of male adult labour.

**Table 8.17 1891 Male and Female Silkworkers aged 15 years and above**

**Female 1891**

	Mar	%	Unm	%	Widow	%	All	Sex Ratio
Redbourn	6	8	68	90.7	1	1.3	75	13
Tring	16	12.8	100	80	6	4.8	125	23
St Albans	7	7.9	69	77.5	1	1.1	89	69
All Herts	29	10.0	237	82.0	8	2.8	289	35

**Male 1891**

	Mar	%	Unm	%	Wid'er	%	All
Redbourn	3	30.0	7	70.0	0	0.0	10
Tring	14	48.3	13	44.8	2	6.9	29
All St A	23	37.7	35	57.4	0	0.0	61
All Herts	40	40.0	55	55.0	2	2.0	100

Source: CEBs 1891 Hertfordshire

Between 1851 and 1891 the number of married women employed in silkwork at St Albans shows a decline by almost half, the percentile proportion having fallen 18 points from 26% to 8%, but much of this decline, if not all of it, was probably due to labour availability rather than any definite employment policy.<sup>68</sup> The number of widows has also

<sup>68</sup> The surprisingly high figures for 1851, low figures for 1871, and more broadly compatible figures for 1891, suggest random employment based more probably on age and sex than marital status.

fallen, but the most dramatic fall has been in the sex ratio of adult employees: from 113 in 1851 to 69 in 1891. This figure contrasts spectacularly with that for adults employed at the younger Redbourn mill where the sex ratio for adult workers is 13.

### Working Wives

**Table 8.18 Working Wives in the Silk Districts of Hertfordshire 1851**

#### Silk Families 1851: Working Wives

	All Wives	Working Wives	Straw	Silk	Dom Serv	Paper or Rags					
		%	%	%	%	%					
Bushey	8	1	12.5	0	0.0	0	0.0	0	0.0	0	0.0
Cashio	4	0	0.0		0.0		0.0		0.0		0.0
Leavesden	3	1	33.3	0	0.0	1	33.3	0	0.0	0	
Oxhey	34	8	23.5	0	0.0	6	17.6	1	2.9	0	0.0
Rick	45	26	57.8	0	0.0	5	11.1	5	11.1	4	8.9
St Albans (1a-1c, 4a-4c)	85	44	51.8	8	9.4	12	14.1	7	8.2	0	0.0
Tring (7a-7i)	91	52	57.1	27	29.7	12	13.2	5	5.5	0	0.0
Watford (1a-e)	64	18	28.1	2	3.1	5	7.8	3	4.7	0	0.0
<b>Totals</b>	<b>334</b>	<b>150</b>	<b>44.9</b>	<b>37</b>	<b>11.1</b>	<b>42</b>	<b>12.6</b>	<b>21</b>	<b>6.3</b>	<b>4</b>	<b>1.2</b>

#### Hertfordshire Silk-working Districts 1851: Working Wives All Households

	All Wives in district	Working Wives	Straw	Silk	Dom Serv	Paper or Rag					
		%	%	%	%	%					
Bushey	429	56	13.1	5	1.2	1	0.2	25	5.8	0	0.0
Cashio	141	12	8.5	2	1.4	0	0.0	8	5.7	0	0.0
Leavesden	209	39	18.7	14	6.7	1	0.5	8	3.8	0	0.0
Oxhey	120	24	20.0	0	0.0	6	5.0	6	5.0	10	8.3
Rick	655	100	15.3	6	0.9	5	0.8	29	4.4	32	4.9
St Albans (1a-1c, 4a-4c)	963	207	21.5	85	8.8	12	1.2	42	4.4	0	0.0
Tring (7a-7i)	788	284	36.0	198	25.1	11	1.4	11	1.4	0	0.0
Watford (1a-e)	573	104	18.2	18	3.1	5	0.9	25	4.4	5	0.9
<b>Totals</b>	<b>3878</b>	<b>826</b>	<b>21.3</b>	<b>328</b>	<b>8.5</b>	<b>41</b>	<b>1.1</b>	<b>154</b>	<b>4.0</b>	<b>47</b>	<b>1.2</b>

Source: CEBs 1851 Hertfordshire

It is to be observed that in 1851 those families where one or more members worked with silk exhibit a trend towards a higher proportion of working wives. In the population as a whole 21% of wives worked, but 45% of those from silk families record employment. Table 8.18 shows that silkwork is the favoured occupation of working wives in the silk group ~ but only marginally so, the straw plait exerting a strong influence among the wives of both groups. Domestic service occupied a comparatively small number of women, considering that at mid-century more than one in seven of working people were so employed.<sup>69</sup> However, like factory workers, the tendency was for domestic servants to be unmarried.

The 'silk family' group may be perceived as weighted in favour of working wives since the silk industry itself was so heavily female dominated, and even in Hertfordshire the number of females engaged in the industry far exceeded males. In addition, only districts in which silkworkers resided are included in the above table. While this may also be perceived as weighting the evidence, it has the merit of constricting the sector of the population under consideration to the inhabitants of predominantly, though not exclusively, areas of similar social structure, permitting the comparison of like with like. Thus all districts demonstrate similar characteristics pertaining to provincial market towns.

### **The Working Mother**

Especial condemnation was reserved for those working mothers of young children, neglected and abandoned to the care of the childminder and, it is asserted, copious measures of Godfrey's Cordial.<sup>70</sup> The Hertfordshire mills at mid-century show generally low levels of working mothers with young children as is evident

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<sup>69</sup> Deane, *The First Industrial Revolution*. p.255. Among married women, the incidence of char and laundry women, as non-living in servants, is particularly high.

<sup>70</sup> This and other similar syrups and soothing cordials were opium based, Godfreys being a compound of opium, treacle and infusion of sassafras. Mixed ad hoc, it varied in strength from supplier to supplier, with potentially disastrous consequences of narcotic poisoning. Jevons, 'Married Women in Factories'. p.43

from Table 8.19. In Oxhey, where married women's participation in the labour force stood at 20% overall, and 23% among silk families, there were no working mothers with children under age 10. In Tring the situation was altogether different: although a high proportion of married women worked, few worked in structured employment such as the mills. By far the majority were straw plaiters, and of those represented in Table 8.19 as having young children at home, seven worked at the silk mill, two were lace makers, and 18 were straw plaiters. A number of these women had more than one child under the age of 5, and 7 had children under 10 both at home and working. Three of the children already worked at the silk mill, but they were not the children of female silk workers ~ their mothers were all straw plaiters. Typical of the silk workers was Sarah Smith<sup>71</sup> a silk throwster, as were her two elder sons aged 10 and 12, but her 6 year old son Henry was a straw plaiter, probably destined for the mill at 8 years old.

**Table 8.19 Silk Families: Working Wives with Children 10 years old or less 1851**

	No. of Working Wives	With at least one child at home	With at least one child working
Watford Districts	11	8	0
Oxhey	0	0	0
Rick	13	6	3
St Albans 4a-4c	26	19	2
Tring	52	27	10

Source: CEBs 1851 Hertfordshire

A comparison of Tables 8.18 and 8.20 shows a decrease in the absolute number of silk family wives, but an increase in the number of those wives working. Changes in the percentage of working wives throughout the population are small, but the high increase among silk family wives reflects not only the fewer families dependent on the mills, but that those families still dependent are among the poorest of the labouring classes. The implications are that the need for married women to work has intensified.

<sup>71</sup> Census 1851. Tring 7e Sched.117

**Table 8.20 Working Wives in Selected Silk Districts of Hertfordshire 1871****Hertfordshire Silk Families 1871: Working Wives**

	Married Females			Sectors of Employment showing percentage share of ever married working females.							
	All		Working	Silk		Straw		Dom Serv		Paper or Rag	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%
Redbourn	63	51	81.0	12	23.5	31	60.8	0	0	0	0
Watford	47	36	76.6	5	13.0	0	0	4	11.1		
Oxhey	24	11	45.8	9	81.8	0	0	2	18.2	0	0
Tring 9-12	50	32	64.0	11	34.4	16	50.0	*	*	0	0

**Hertfordshire Silk-working Districts 1871 Working Wives : All Households**

	Married Females			Sectors of Employment showing percentage share of ever married working females.							
	All		Working	Silk		Straw		Dom Serv		Paper or Rag	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%
Watford	901	132	14.7	5	3.8	7	5.3	56	42.4	3	2.3
Oxhey	149	34	22.8	9	26.5	3	8.8	10	29.4	0	0
Tring 9-12	247	96	38.9	11	11.5	62	64.6	*	*	0	0

Source: CEBs 1871 Hertfordshire

Childbirth remained hazardous, however many children the mother had already delivered safely, and there were many to claim that mill work increased these dangers. 'That the physical energies of the factory women are injured is proved by the fact, that miscarriages are exceedingly common amongst them. We have had many opportunities of noting this circumstance both in girls engaged in silk and cotton mills.'<sup>72</sup> Engels agreed, asserting 'that factory operatives undergo more difficult confinement than other women is testified to by several midwives and accoucheurs, and also that they are more liable to miscarriage.'<sup>73</sup> Some mill owners declared categorically that they employed no pregnant women,<sup>74</sup> but if this were true, such mills were undoubtedly in the minority, Cooke Taylor declaring in

<sup>72</sup> Gaskell, *Artisans and Machinery*. p189

<sup>73</sup> Engels, *The Condition of the Working Class in England*. p 179

<sup>74</sup> PP 1834 Vol. XIX p.296

1873 '... the allegation is ... that the mothers often work too near the period of confinement and too soon after'<sup>75</sup> Mary Ann Belcher, aged 34, died suddenly in January of 1873 at her home in Watford Fields, leaving four children. She had worked at Shute's silk mill, and six months pregnant with her fifth child had gone to work as usual on the Monday morning, returning home at seven in the evening. She had her tea and supper, then went to bed, her husband working night shifts on the Watford tunnel. Congestion, difficulty in breathing, and swelling of the face and neck preceded her death later that same evening, attributed to 'convulsions from pregnancy'.<sup>76</sup> Mary had been a child silkworker, recorded in the Census of 1851 together with her brother, John, one year her junior, as a 'silk throwster'.<sup>77</sup> Sometime between 1861 and 1871 she had married James Belcher, a general labourer from Harpenden,<sup>78</sup> and in 1871 she, James, and their four children were recorded as a separate household, but on the same schedule as her mother, Catherine Rivett, a widow whose household comprised her three grandchildren. Two of these grandchildren were working adults, and therefore a definite asset to the family budget, Alfred Rivett (23) was a journeyman bricklayer and George Butler (22) a bricklayers labourer. The third grandchild, Catherine Rivett (11) was still a 'scholar'.<sup>79</sup>

Mary may have been able to continue working in the mill throughout her married life, because her mother was close enough at hand to look after her children during the day, although she records no occupation in the 1871 census, implying that she was one of those women that, finances permitting, took time off work to be at home while her children were young. An investigation into the

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<sup>75</sup> Taylor, 'The Employment of Married Women in Manufacture'. p.610

<sup>76</sup> *The Herts Advertiser and St Albans Times* 25 Jan p 6iv

<sup>77</sup> *Census* 1851 Watford ED 1e Sched 61. Her maiden name was Rivett, her mother, Catherine Rivett, reported as being with her when she died.

<sup>78</sup> James Belcher is listed in the 1861 Census as an unmarried labourer lodging at the Wheatsheaf Inn in the lower High Street, Dist 7B Sched 7, and in 1871 as a 'Stable Labourer' Dist 4 Sched 197; in 1873 *The Herts Advertiser and St Albans Times* 25 Jan 1873 p6iv reported that he was a railway labourer.

<sup>79</sup> *Census* 1871 Watford Dist 4 Sched 197.

working lives of married women in Leek and Macclesfield, carried out by Margery Lane in 1901 as part of an enquiry undertaken by the Women's Industrial Council, came to the conclusion that 'married women's work is necessary under present conditions, and that it is possible to carry it out without causing much domestic unrest'.<sup>80</sup> Conditions were not so very different from those prevailing half a century earlier, and the same concerns regarding health and home management were expressed:

... under favourable circumstances, it is possible for a woman to continue working at the mill after marriage without any very visible harm to herself or her family. \_\_\_\_\_but it must be added that favourable conditions are rare. A woman needs to be healthy in mind and body, to be sure of sufficient support from her husband to enable her to take a proper rest at confinements, and to be certain that the children will be properly looked after in her absence. When these conditions are absent the mother or children, or both, are likely to suffer.<sup>81</sup>

Few studies, contemporary or later, have considered that the sanitary state of the district in which working class families were likely to live, amid what Garret terms the 'industrial squalor' might have had greater influence on child mortality than the occupation of the mother.<sup>82</sup>

In her study Lane found that many mothers stayed at home while their children were still in infancy, while others who did not 'generally stay at home two or three months at confinements'<sup>83</sup> and in 1871 the children of Mary Ann Belcher were aged between five years and eight months.<sup>84</sup> It is possible that family circumstances had changed sufficiently, perhaps with the departure of her adult nephews and the loss of their financial contribution to the joint households, that

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<sup>80</sup> Lane, 'Leek and Macclesfield' p 213

<sup>81</sup> Lane, 'Leek and Macclesfield' p 210

<sup>82</sup> Garrett, 'Was women's work bad for babies? A view from the 1911 census of England and Wales.' p.312 Garrett also suggests that women with fewer children were more able to work, rather than that work actually limited fertility. (p.287) In short, she concludes that although women's work *was* bad for babies, it was not necessarily for the reason of bad motherhood.

<sup>83</sup> Lane, 'Leek and Macclesfield' p 211

<sup>84</sup> Mary Ann 5; Alice 4, William Henry 3, Eliza 8 months. Watford 1871 Dist 4 Sched 197

she found it necessary to work during her fifth pregnancy. The family was at the most vulnerable stage of the poverty cycle: Catherine Rivett the elder was recorded in 1871 as being already in receipt of parish relief, and without the support of other family members it would be highly unlikely that James Belcher, on a labourers' wage, could have provided adequately for six or seven dependants.<sup>85</sup> The story of structural change within families like these illustrate the disparity between the reality of an uncertain existence in which the death or departure of an adult wage earner could mean the difference between modest comfort and harsh poverty, and the idealised but generally unattainable image of family life that gained currency during the mid-Victorian period.

A comparison of the employment patterns of married women in 1851 and 1881 following closure of the silk mills at Watford and Rickmansworth show little proportional change overall. The population had doubled, but the proportion of working married women fell by only 0.5%, from 15% to 14.5%. Within this figure there had been movement: a fall in straw plaiting, an increase in the domestic service sector and in textile work other than silk production, greater employment of married women in paper mills and rag factories. By 1891, 15% of all wives in the three remaining silk producing districts were employed against 21% of silk family wives. Within individual districts, proportions varied as shown in Table 8.21 from the extreme of Tring, where 8% of all wives worked, but among silk families 26% of wives worked, to the more equitable areas of St Albans, (17% of silk family wives against 16% of all wives) and Redbourn. The silk mills were now concentrated within the districts of the straw plait, and despite decline of the trade, wives from both sectors, families with or without members employed in silk work, were more likely to be involved in straw plaiting than in any other

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<sup>85</sup> Margery Lane comments '... the standard of living sinks as the number of dependants increases. Those are best off who have no young children, or only one or two; or where there are several adults in a family. The largest families have often the smallest incomes. A man and wife with a numerous flock of young children must expect to see plenty of trouble before their good time comes. Under modern industrial conditions the blessings of a quiverful of sons and daughters sometimes seems rather dubious.' Lane . 'Leek and Macclesfield' p 205



occupation. Although many silk family wives were also occupied in silkwork, the straw plait remained a major employer, claiming at least a third of working wives in all districts and categories other than from silk families in Redbourn.

**Table 8.21 Working Wives in the Silk Districts of Hertfordshire 1891**

**Hertfordshire Silk-working Districts 1891 Working Wives : Silk Households**

	All		Working		Working Wives		
	Wives	Wives	%	Silk	%	Straw	%
Redbourn	75	16	21.3	6	37.5	3	18.8
Tring	107	27	25.2	16	59.3	9	33.3
St Albans	120	20	16.7	8	40.0	8	40.0
<b>Total</b>	<b>302</b>	<b>63</b>	<b>20.9</b>	<b>30</b>	<b>47.6</b>	<b>20</b>	<b>31.7</b>

**Hertfordshire Silk-working Districts 1891 Working Wives : All Households**

	All		Working		Working Wives		
	Wives	Wives	%	Silk	%	Straw	%
Redbourn	347	63	18.2	6	9.5	21	33.3
Tring (6-13)	739	72	9.7	16	22.2	24	33.3
St Albans <sup>86</sup>	2032	320	15.7	8	2.5	108	33.8
<b>Total</b>	<b>2679</b>	<b>399</b>	<b>14.9</b>	<b>30</b>	<b>7.5</b>	<b>139</b>	<b>34.8</b>

Source: CEBs 1891 Hertfordshire

### Migration

The proximity of the Hertfordshire silk mills enabled the movement of workers without the loss of kinship ties. While there is little evidence of general migration between the mills of different owners, key personnel were subject to career movement. Thomas Rock Shute advanced at least two of his Watford employees, giving them positions of authority at the Rickmansworth mill. Henry Penny was a silk throwster labourer, living in the Rookery cottages in 1851, as was the silk throwster George Gray. Both held positions as foreman at the Rickmansworth mill by 1861. Gray, at 29, was still unmarried and in lodgings<sup>87</sup> but the entries suggest that for Henry and Maria Penny the intervening ten years

<sup>86</sup> For all 1891 tables 'St Albans' includes St. Albans districts 9-12 and St Albans St Peters 1-5

<sup>87</sup> George Gray 1861 *Sched 135 Rickmansworth Dist 1*

had brought sadness. In 1851 they had a six month old daughter named Elizabeth. In 1861 they have a three year old daughter, also named Elizabeth. The most probable conclusion is that the first Elizabeth died young, and, as was quite common, the parents gave the next surviving girl child the same name. Following closure of the Rickmansworth mill, Penny moved back to Watford, opening a Beer House at 206 High Street.<sup>88</sup>

At Redbourn it is particularly noticeable that from the first, the workforce was overwhelmingly constituted from the children of local residents. While three-fifths of all workers were born in Redbourn, almost four-fifths were born in Hertfordshire, and at no greater distance than Rickmansworth.<sup>89</sup> Only three workers were obvious long-distance migrants: Hannah Simpson (27) her sister Lucy Ann Baylis(16) and their cousin Caroline Gill (21). These three unmarried women from Worcester all worked in the silk mill, supported themselves, and lived alone at Church End.<sup>90</sup> By 1871, as the mill became more established, the percentage of local born workers actually increased from 60% to 72%, and those from Hertfordshire from 76% to 89%. Two of the most important positions at the mill, of manager and of engine driver, were held by men from St Albans, where they had undoubtedly served their time in the Abbey mills.

Of all the silk mill districts, the town of Watford grew most spectacularly during the second half of the nineteenth century, but the silk mill workforce counted few long distance migrants. In 1871 the main catchment area of the Rookery mill still lay in Watford town and Oxhey, where 65% of silkworkers were born. In total, 83% of silkworkers were born in Hertfordshire, 5% in neighbouring Buckinghamshire, the remainder scattered amongst Middlesex and more distant counties.<sup>91</sup> The overwhelming majority of workers at all the mills came from

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<sup>88</sup>Henry Penny: 1861: Rickmansworth 1, Sched 145 (Silk Mill Cottage) 1881:1437, Folio 59 p.

<sup>89</sup>In *St Albans and its Region*. Goose notes the problems posed by a town containing more than one parish, and the uncertain accuracy of entries where the recorded birthplace, here 'St Albans' may refer to town or parish. p.126

<sup>90</sup>*Census* 1861: Redbourn Dist 9 Sched 100

<sup>91</sup>Given the geographical position of the Watford, Rickmansworth and Tring mills, migrants from

native Hertfordshire families although the senior personnel, managers or overseers, might well come from other silk producing centres, as proprietors called upon outside expertise and experience. At Tring, both Henry Rowbotham and his successor, John Akers, came from Macclesfield, the former remaining more than 20 years in the service of David Evans, the latter remaining as Manager until the closure of the mill. At the Rookery Mill each decennial census recorded a different manager. Whether this reflected discontent in their situation, a desire to move to a larger, and higher profile mill in a more overtly industrial area, or merely a personal preference for their native county, is matter only for conjecture but these too were largely personnel brought from silk producing areas outside the county.<sup>92</sup> Only at Rickmansworth and Redbourn are mill managers consistently of local origin.

## Conclusion

During this latter period of the silk industry in Hertfordshire from about 1850-1891, the mills at Tring, Redbourn and St Albans retained their prosperity at the price of reducing the workforce and the substitution of male adult labour by female and juvenile labour. The sex ratio came closer to parity with the national ratio although remaining much higher at age 0-14, and indeed, at the St Albans mill in 1891 where at all ages the sex ratio was consistently higher than the national average.

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neighbouring counties may have travelled shorter distances than had those from within the northern boundaries of Hertfordshire.

<sup>92</sup> Managers of the Rookery Mill according to the decennial census. 1851: Thomas Batt Hall, London Oxhey 2B Sched 20. 1861: James Holland, Macclesfield, Cheshire. Oxhey 7B Sched 23 1871: Henry Walworth, Congleton, Cheshire. Oxhey 8 Sched 21

It is asserted in many studies of the textile districts that much of the mill workforce was sourced from the wives and daughters of adult male mill workers.<sup>93</sup> 'Of 10,000 married women employed in 412 factories in Yorkshire and Lancashire, half had husbands in the same factory' writes Neff.<sup>94</sup> Nowhere in the Hertfordshire mills does a similar situation arise. As noted above, the number of married couples working in the same mill are minimal, and instances of children following parents into the mills are sufficiently rare to be worthy of comment.<sup>95</sup> Despite a marked tendency for children to follow the occupations of their parents in the agricultural sectors, the sons of agricultural labourers tended to become agricultural labourers, and the daughters of straw plaiters tended to become straw plaiters themselves, there is little continuity of occupation observable in the sons and daughters of silk workers. On the contrary, a high proportion of silk mill children were not the children of silk workers at all, but of labouring men.

Despite charges of early and improvident marriage levelled at factory workers it has been found that in Hertfordshire mill workers married no earlier than their contemporaries. Their children started work no earlier, and in the case of male workers, their children were less likely to work either in the mills, or at a young age. Ill effects attendant upon working wives have likewise not been proven, anecdotal evidence alone hinting at the dangers to pregnant women.

There was a higher proportion both of female-headed households and of working wives among silk worker families, but general charges of neglecting

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<sup>93</sup> As Chapman assumed the workforce of the Tring mill came from the wives and daughters of the print workers at Crayford. Chapman . 'David Evans and Co. : The Last of the old London Textile Printers.'. p.43 See also Chapter 4 above.

<sup>94</sup> Neff, *Victorian Working Women : An historical and literary study of women in British industries and professions 1832 - 1850*. p 27

<sup>95</sup> In 1851 John Leppar (aged 42) of Meeting Alley in Watford, was working in the silk mills, as was his fourteen year old daughter Emma 1851 *Census* Watford Sched 108 Dist 1a. In 1871 John Leppar was listed, still living in Meeting Alley, as a General Labourer. By 1871 Emma is absent, but his son Charles is listed as a general labourer, *Census* 1871 Watford Sched 74 Dist 1, and in 1881, although John is now absent, Charles has become a milkman. *Census* 1881 Watford: Piece 1436

family and home levelled at mill wives by Factory Inspectors and contemporary reformers, seem to have little place here where a majority of wives worked from home. The proportion of wives engaged in straw plaiting is even higher among silk families than among others, lending further credence to the conclusion that until the decline of both the silk and plait trades it proved a major obstacle to factory expansion in Hertfordshire.

## CHAPTER 9. CONCLUSION

Made by protection and undone by free trade, not strictly incompetent but always in difficulties ...<sup>1</sup>

*J. H. Clapham*

### The Long View

The conclusion reached by Clapham with regard to the silk trade is, in general, a just one. English manufacturers lacked the natural climatic advantages of France and Italy which secured comparatively cheap and reliable supplies of the highest quality raw material; the centralised and specialised organisation of Tours or Lyon; the cheap and plentiful labour source of their European competitors. With these handicaps, even the qualified success of the English silk industry is astonishing.

...in the manufacture of English goods, the labour was of greater value than the material, while, in France, the value of labour, as well as of the material, was much less; owing therefore, to the pressure from taxation, and other circumstances it was impossible for the English manufacturer to compete with his foreign rival.<sup>2</sup>

From the second half of the eighteenth century British manufacturers increasingly turned towards cheaper Asian silks, so that by the beginning of the nineteenth century imports from India and China amounted to between 40% and 50% of total consumption. Problems of continental supply had forced manufacturers to look seriously at the internal resources of the Empire, but despite attempts to prove otherwise, it is undeniable that Asian silks, although suitable for stockings, some ribbon work and mixed fabrics, were of lower quality than the

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<sup>1</sup> Clapham, *An Economic History of Modern Britain*. p.127

<sup>2</sup> *Hansard* Vol. XXIII : 25th April - 27th May 1834 col. 1275

continental product.<sup>3</sup> By the 1860's Chinese silk accounted for 60% of British demand<sup>4</sup> and the Hertfordshire mills of Charles Woollam, like many others that had once used only Italian silk, gradually switched to the cheaper product as the trade declined.<sup>5</sup>

The decline of the silk industry has been widely attributed to the loss of protective tariffs, although free trade did fuel some growth in demand at the low-cost end of the market ~ chiefly supplied from hand-loomers because these were capable of using poorer quality silk than machines. It is also true that not all contemporaries saw the expansion as profitable:

‘silk’ it is said ‘is a luxury’ .... the only advantage of a free trade in that article is ‘that the wives and daughters of the higher classes pay less for their dresses than they did formerly, and that maid servants can now appear as smart as their mistresses.’<sup>6</sup>

In recalling the conduct of the silk manufacture during his youth, Charles Woollam, however, ascribed much of the decline in the trade, not to the Cobden-Chevallier Treaty of 1860, but to the opening of the Suez Canal in 1869.

Pressed for an explanation, Mr Woollam described the ocean routes of the old silk trade, by the influence of which London became the world's emporium, so far as silk was concerned. That is to say, London became the recognised market, to which all Eastern silk was brought by sea, and foreigners who wanted it must perforce come to London for it. Large quantities of the raw material came into the Port of London, and were immediately sent abroad again. That was at the time when the

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<sup>3</sup> Federico reports that the concern of English manufacturers unable to obtain Italian silks was matched by the hysteria in Italy at the loss of British markets, which from the 1830's onwards were largely supplied from the east. Federico, *An Economic History of the Silk Industry 1830 - 1930*.p.76

<sup>4</sup> Federico, *An Economic History of the Silk Industry 1830 - 1930*.p.76 Japanese silk accounted for 20%, the Mediterranean countries and India together accounting for the remaining 20%. In 1864 throwsters experienced severe problems due to partial failure of the Bengal crop and reduced exports from China following the Taiping rebellion. *PP 1865 Vol.XX* Report of Robert Baker 31<sup>st</sup> Oct 1864 p.37

<sup>5</sup> *Herts Advertiser and St Albans Times* February 2<sup>nd</sup> 1901 p.5v Interview with Mr Chas. Woollam. Samuel Cunliffe Lister, a silk manufacturer of Bradford, employing over 3,000 workers at Manningham and Addington imported all his silk from India, China and Japan. *The Textile Manufacturer* October 15th 1881 p.357

<sup>6</sup> *Hints on the Practical Effects of Commercial Restriction on Production, Consumption, and National Wealth. with remarks on the claims of the Silk Trade by a Consumer.* 1833 Tract.

merchant vessels were bound to come via the Cape of Good Hope. The opening of the Suez Canal, while it gave a magnificent impetus to trade as a whole, had this disastrous effect upon the silk trade of London. Marseilles, being on the new route, was able to take the place of London as the landing port, and Lyons, the French silk town, became the market, and the fact of its greater proximity to Germany and Switzerland made it very easy to pick up trade that had hitherto belonged to this country.<sup>7</sup>

Reports of distress in the silk manufacturing districts are common throughout the period of this study ~ in Spitalfields,<sup>8</sup> in Congleton and Burnley,<sup>9</sup> in Macclesfield,<sup>10</sup> and Coventry,<sup>11</sup> but this was not peculiar to the silk trade, nor even to the textile trades. All the fashion trades, factory or cottage-based, were subject to similar vicissitudes. Lace-making, straw-plaiting, stocking-knitting all suffered periods of decline when trade was poor, the hardship accentuated by the concentration of these trades in particular towns or regions. The enduring problems of the silk industry are reflected in wage fluctuations and the number of mills lying idle, but these are both the result of an industry that offered high risks for high returns. The true nature of the problem lay in the production of high-cost goods from an imported material, with a narrow and inelastic market.

### The Wider View

In general terms this study has shown the importance of the regional perspective in any assessment of industrial development. Some national themes

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<sup>7</sup> *Herts Advertiser & St Albans Times* 2<sup>nd</sup> Feb 1901 p5v-vi The Suez Canal route was open only to steam ships, due to conditions adverse to the clipper ships in the Red Sea, but the journey time from India to London could be cut from around three months, to something nearer three weeks. In 1875 Disraeli purchased a controlling interest in the Suez Canal, but this did not help the British silk industry.

<sup>8</sup> *The Times* Jan 3rd 1786 1b; Jan 31st 3a.

<sup>9</sup> *Hansard* Vol. 63 3rd May - 16th June 1842 Col.1154

<sup>10</sup> Prout, *A Practical View of the Silk Trade 1829* : & *The Textile Manufacturer* Oct 15th 1875 p.414

<sup>11</sup> *The Textile Manufacturer* March 15th 1875 p.153



are indeed reflected in Hertfordshire ~ the provision of employment for the poor;<sup>12</sup> gender division relevant to spheres of employment; the importance of child and female labour to the family economy; the beginnings of economic growth and industrialisation during the second half of the eighteenth century.<sup>13</sup> Silk throwing was the first factory-based industry of the modern era to be established in Hertfordshire, and the links to pre-existing parent companies in mature centres of production are particularly evident during the eighteenth and early nineteenth centuries. Thus, although Hertfordshire was a new centre, the mills were not part of a blind speculation, but in the control of experienced manufacturers.

Silk manufacturers came to Hertfordshire because it had abundant water power. As textile mills converted to steam, and were able to move away from the river edges into urban areas<sup>14</sup> the conditions of advantage changed. Although the Grand Junction Canal enabled the easy transport of fuel, there were no indigenous mineral deposits of coal or iron to allow the further spread of industrialisation through the county. As the early silk mills closed, there was little other industrial activity to fill the void. Could it be that the very proximity and influence of London drained capital from the county? In a study of de-industrialisation in the Weald, an extreme case where early proto-industrialisation failed to translate into full industrialisation, it was found that subordination of regional interests to national and international interests, combined with a form of 'asset-stripping' by landowners based in London and elsewhere, had materially contributed to its later

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<sup>12</sup> *Rimmer was advocating the farming of silk worms in the neighbourhood of Watford as late as the 1880's, even as the mills were closing. 'Silk also is manufactured at some mills here; and it has often occurred to me that cottagers might greatly increase their resources by keeping silk-worms. They are easily attended to, and produce a certain crop .....~ it is work for which women and children are peculiarly adapted, and cocoons might easily be raised along the runs of a farm-house, where they would be out of the way, and bring in a handsome return.'* Alfred Rimmer: *Rambles round Eton and Harrow* p190

<sup>13</sup> Deane and Cole suggest that despite continuing argument concerning the degree of industrialisation and rate of growth 'an unprecedented acceleration in the rate of economic expansion associated with the beginnings of modern industry took place in Britain in the second half of the eighteenth century'. Deane and Cole. *British Economic Growth*. p.278

<sup>14</sup> Harley, 'Reassessing the Industrial Revolution: A Macro View' *The British Industrial Revolution: An Economic Perspective*, ed. Joel Mokyr. p.194

state as an under-developed region.<sup>15</sup> As shown in preceding chapters, Hertfordshire was not under-developed, and thrived on its London connections, but it did remain under-industrialised following a most promising beginning.

### Some Questions Answered

The proposition that prolonged industrial growth was dependent upon a sequence of mixed industries<sup>16</sup> must be given qualified support, since although the principal mills remained profitable for approximately 100 years, the industry did not expand beyond the existence of six or seven silk mills operating in Hertfordshire at any one time. As noted by Deane, the textile industries reached their peak in the middle of the nineteenth century when 10% of the population and 21.4% of the occupied population were recorded as working in that sector<sup>17</sup> the silk industry attaining the peak of its growth in the early 1860s.<sup>18</sup> This pattern was loosely followed in Hertfordshire, where the period of maximum employment extended from the 1850s until the early 1870s. In very many aspects, however, the silk industry in Hertfordshire did not reflect the national picture, nor did the composition of the workforce conform to national profiles, the sex ratio proving consistently higher than the national average.

Was the competition for labour and resources experienced by the textile mills in Hertfordshire more or less severe than in other districts where new mills sprang up? The fact that there were comparatively few silk mills in relation to the available water-power argues the existence of negative factors other than the national fluctuations in the state of the silk trade that curbed further expansion. Labour supply did indeed prove a major problem. While there may have been a

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<sup>15</sup> Hudson, *The Industrial Revolution*. pp.128-130

<sup>16</sup> Hudson, *The Industrial Revolution*. p.115

<sup>17</sup> Deane and Cole. *British Economic Growth*. p.211

<sup>18</sup> Deane and Cole, *British Economic Growth*. p.210

'reserve' army of labour in the northern textile towns,<sup>19</sup> there was in Hertfordshire a labour shortage, characterised by higher than average rates of male employment in mills, and the continued employment of pauper children into the late 1860s. Nationally, in 1851 30% of children aged 10-14 were in paid employment, and more boys (37%) than girls (22%)<sup>20</sup> but in the Hertfordshire silk manufacturing region the figures range from the Watford districts which maintain the national average, declaring 37% of boys and 23% of girls employed, to the high returns of Berkhamsted, where 45% of boys and 56% of girls worked, and St Albans, where 51% of boys and 50% of girls worked.<sup>21</sup> Such high rates of juvenile employment are not a consequence of silk factory labour, but of the straw hat and plait trade. This same geographical pattern is repeated in regard to higher than average percentages of adult female labour, attributable to the same cause. It is thus clear that although the silk mills were important to the domestic economy, the pre-eminent role in each area other than Watford, belonged to the straw industry.

Despite early expectations of finding that the most severe competition ~ in terms of labour, site position, and the possible pollution of water resources ~ would come from the paper industry, it was the straw plait trade that assumed greatest importance in restricting the growth of factory-based textile manufacture in Hertfordshire. Fluctuations in the straw plait trade did not free labour for the mills in a consistent manner ~ here there was no symbiotic relationship between straw and mill-work as postulated between mill and agricultural workers in Essex.<sup>22</sup> Periods of high demand in the plait trade tended to draw all within its aegis. 'St Albans and Hemel Hempstead are in full activity; old and young are at

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<sup>19</sup> Engels, *The Condition of the Working Class in England* p.118

'... it is clear that English manufacture must have, at all times save the brief periods of highest prosperity, an unemployed reserve army of workers, in order to produce the masses of goods required by the market in the liveliest months.'

Mokyr, Ed. *The British Industrial Revolution : An Economic Perspective* p.98 'The notion of large reserves of unemployed workers awaiting a rise in labor demand is much in dispute, although O'Brian and Engerman (1991) and others rely on contemporary opinion that Keynesian unemployment was a serious problem in the eighteenth century.'

<sup>20</sup> Hair, 'Children in Society 1850-1980'. p.47

<sup>21</sup> Goose, *St Albans and its Region*. p.99

<sup>22</sup> Sharpe, *Adapting to Capitalism, Working Women in the English Economy, 1700-1850*. p.3

work, so great is the demand for manufactured straws.’<sup>23</sup> Continuity of employment as envisaged by Ure<sup>24</sup> is also questionable. While some workers like Mary Ann Belcher began as child silk workers and remained in the mills thereafter, there is evidence that many moved into paper manufacture, rag cutting, or like Lucy Luck preferred to plait straw. Hertfordshire mill workers, unlike those of the Northern and Midland counties, did not live in delineated districts wholly, or even principally dependent on mills or factories, but in mixed urban-rural communities where agriculture was still a major employer. In many ways the plural society ‘with factory, weaving and farming communities impinging on each other’<sup>25</sup> described by Thompson as representative of the industrial districts of the 1830s persisted in Hertfordshire until the twentieth century.

### Mill Workers

During the course of this study it became increasingly apparent that the story of the factory-based textile industries in Hertfordshire, as in all England during the eighteenth and nineteenth centuries, was inextricably bound up with that of the changing socio-economic role of women, children, and of the workhouse poor. Adult men were confined almost entirely to supervisory, engineering, or labouring roles, and the ‘typical’ textile worker therefore emerges as either child or female. Peter Gaskell asserted in 1836:

There is no employment to be found for adult males; on the contrary, they are becoming daily more and more a clog in the way of the masters, and the hand loom, with its necessary companion, utter poverty, is alone open to them.<sup>26</sup>

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<sup>23</sup> *Beds, Bucks, and Herts Chronicle* March 8<sup>th</sup> 1828 p.2iv

<sup>24</sup> Ure, *The Philosophy of Manufactures* p.342.

<sup>25</sup> Thompson, E.P *The Making of the English Working Class*.p.340

<sup>26</sup> Gaskell, P *Artisans and Machinery*. p.172

While the Hertfordshire mills employed a higher proportion of men than the national average, women still constituted a sizeable majority of the workforce.<sup>27</sup> The years of industrial revolution witnessed a slow change in attitudes towards women and work, towards children and education, towards the poor and parish responsibility, and towards the methods of production, which really came to fruition only in the latter part of the nineteenth century. Concepts of the 'angel of the house', of 'childhood', of universal education, and the 'deserving poor' belong to the world of middle and upper class Victorians that could afford domestic servants and non-working wives. Theodore Koditschek maintains that the degradation and devaluation of the role of working people in the industrialization process was a matter of gender, as well as of class, so that 'women's work, so central in traditional preindustrial society, was relegated in principle to the invisibility of domestic housework or, even worse, to a unique sub-proletarian purgatory of domestic service which bought those who experienced it the worst of both worlds.'<sup>28</sup> This change in perception of the role of women is central to the present debate regarding the 'male breadwinner wage', but there is much virtue in that phrase 'in principle' ~ in practice, the number of women employed in mills and factories rose following the introduction of legislation restricting child employment.

Rates of female employment have been estimated from returns such as that for Courtaulds, where in 1873, 'the Halstead mills alone were employing 1,337 workpeople, 1,223 of whom were women and girls.'<sup>29</sup> The combination of local economic dependency in a climate of growing national industrialisation, allied to the overwhelming numerical superiority of women and children employed in the textile mills, has attracted many feminist and gender history studies in which the importance of female labour to the success of the 'industrial revolution' in Britain

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<sup>27</sup> Sex ratios for the silk industry in Hertfordshire as given in Chapter 3, show a decline from 97 in 1841 to 69 in 1851, falling continuously thereafter to a low of 41 in 1881 and 1891.

<sup>28</sup> Koditschek, Theodore. 'The Gendering of the British Working Class.' p.341 It may seem simplistic to assert that for some women, domestic service provided an escape from poverty, and that not all service equated to a purgatorial servitude.

<sup>29</sup> Ward-Jackson, C. H. *A History of Courtaulds*. p.57

is frequently contrasted with the lack of real power exercised by women as individuals. The nineteenth century silk industry made particularly extensive use of both child and adult female labour, and contradictory contemporary accounts echo the modern debate as to the effects of such labour upon the workers themselves: reports of underpaid labour and starvation wages are juxtaposed with the reports of factory girls in silk dresses and finery, behaving in ways above their station. If, as Pam Sharpe suggests, 'The control of young females was possibly even more vital to the success of a silk mill than to other businesses'<sup>30</sup> it becomes a matter of importance to assess the extent of control exercised in a region of generally high female employment outside the factory gates. Were the silkmasters of Hertfordshire either willing, or financially able, to exert such patriarchal authority? Evidence suggests that they were not, although rules of conduct enforced inside the gates did extend outside them. Henry Rowbotham acted promptly to control the young women in his charge following a breach of discipline ~ thereby defending his own reputation and that of the mill. The authority of Charles Woollam as protector and disciplinarian was both invoked and flouted by his young employees, and Thomas Rock Shute exacted no more than just punishment in dismissing only those members of the Bolton family found guilty of theft. Like the Fielden family, major industrialists of the Todmorden district that supported good causes, and treated their workers well, exercising a 'squirearchic paternalism',<sup>31</sup> the Hertfordshire silk manufacturers never attempted to exercise monopolistic control and power in the manner of the Gregs at Styal.

Women played an equivocal role in the workforce, desired by mill owners as cheaper, less troublesome, and sometimes more adept at their work, than their male counterparts, but they were also popularly perceived as depressing male wages and displacing skilled workmen, thereby threatening the stability (and accepted hierarchy) of the family. Judy Lowen argues that:

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<sup>30</sup> Sharpe, Pamela. *Adapting to Capitalism, Working Women in the English Economy, 1700-1850*. p.52

The efforts of 'skilled labourers' throughout the period of industrialization to protect and maintain their privileged position worked systematically to the detriment of women workers. Fraternal organizations such as Friendly Societies and trade clubs flourishing during this period not only safeguarded the bargaining powers of their members, but assured the maintenance of male domination in household arrangements.<sup>32</sup>

Joyce Burnette argues that the difference in male-female wages have been much exaggerated,<sup>33</sup> while the extent to which female factory employment affected the wages, and indeed, employment prospects, of male workers in the same and outside industries, has constituted a long-standing debate, latterly explored by Anderson in a recent study of Preston textile factory workers.<sup>34</sup> Arguments that increased female employment resulted in the depression of male wages suggested by Pinchbeck<sup>35</sup> and Sharpe<sup>36</sup> are not however, supported by Hunt in a study of family earnings, where he argues forcibly that neither wages paid to female and adolescent workers nor the employment levels of the population greatly influenced the spatial variations in men's wages.<sup>37</sup> As to whether female employment was actually necessary in factories, Robert Baker, Inspector of Factories, concluded that it was essential, although intimating that it was regrettable, and should be confined ideally to single females.

In all the families of the working classes, the wages of the women and children add, if I may use the expression, the luxuries of their condition to the mere necessities earned by the men, since all their wants now, are greater than when, to paraphrase the

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<sup>31</sup> Feilden, John *The Curse of the Factory System* p.xii

<sup>32</sup> Lown, *Women and Industrialisation : Gender at Work in Nineteenth Century England*. p.24

<sup>33</sup> Burnette, 'An investigation of the female-male wage gap during the industrial revolution in Britain'. Burnette concludes that 'Women of the industrial revolution suffered more from declining demand for their labour than they did from wage discrimination.' p.279

<sup>34</sup> Anderson, 'What can the mid-Victorian censuses tell us about variations in married women's employment.' pp. 9-30.

<sup>35</sup> Pinchbeck, *Women Workers and the Industrial Revolution 1750-1850*. p.312

<sup>36</sup> Sharpe, 'The Women's Harvest: Straw-Plaiting and the Representation of Labouring Women's Employment, c.1793-1885.' pp 129-142

'... male wages were noticeably lower in parishes with female work of any type, including straw plaiting.' p.134 However, this is a 'chicken and egg' question: were wages low because women worked, or did women have to work because wages were so low?

<sup>37</sup> Hunt, *Regional Wage Variations in Britain 1850-1914*. Ch.3 pp107-128

quotation, “man delved and woman span.” All that is needful is, that their service shall be compatible with the sacred obligations of virtue ~ shall not be beyond their strength, and shall be remunerative, and given preferentially to the unmarried.<sup>38</sup>

In tune with the national trend, the majority of female silk workers in Hertfordshire were both young and single ~ indeed, between 1833 and 1891 no more than 30% of all silk workers were over the age of 21, and as late as 1891 over 34% were under the age of 15.<sup>39</sup>

Women in pre-industrial society were perceived as housewives and mothers, but also as valued contributors to both the household and national economy, yet by the nineteenth century, when a high proportion of industrial workers were women, the status of women’s work and women workers was characterised in the stereotypical Victorian factory girl, who was at once ‘condemned for her immoral behaviour and pitied for her arduous workday’,<sup>40</sup> Engels describing factory conditions as ‘the crowding into a small space of people, to whom neither mental nor moral education has been given’.<sup>41</sup> Approval of the industrious lower-class working wife is balanced by condemnation at the implied neglect of child and home, while the desire to provide children with industrious pursuits, rather than expose them to the vice of idleness, and consequently ‘moral turpitude’, led to the active promotion of early employment<sup>42</sup> not least by charitable organisations and children’s societies. Nevertheless, for all the contemporary writers denigrating the industrial woman, there were also some prepared to defend the honour of the factory girls ~ the Churchwardens and Overseers of St Margarets, Westminster, were certainly more concerned for the moral state of the silk mill children during their time in the workhouse than during their apprenticeship at the Tring mill,

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<sup>38</sup> PP 1860 Vol.XXXIV Reports of Commissioners (p.530) Reports of Inspectors of Factories: Robert Baker Esq. April 30<sup>th</sup> 1860 p.60

<sup>39</sup> Calculated from Factory Returns 1833 and Census Returns 1851-1891.

<sup>40</sup> Valenze, *The First Industrial Woman*. p.3

<sup>41</sup> Engels, *The Condition of the Working Class in England*. p.169

<sup>42</sup> Horn, *Children's work and welfare, 1780-1890*. p.1



There are fifty four apprentice Girls between the age of twelve and eighteen, and when due allowance is made for the contaminating influence of the older portion of the inmates of the Workhouse to which they have been subjected more or less since they first breathed until sent to Tring, it is only surprising that they behave so well.<sup>43</sup>

### **The role of the poor**

The Old Poor Law embodied the right to work, for those who could, and the right to subsistence for those unable to do so, either through age or infirmity. Abuse of these principles and in particular the failure of overseers as the servants of the parish to provide work came to be seen as a cause of both high poor rates, and idleness among the poor. Consequently, long before the introduction of the New Poor law in 1834, a number of local workhouses developed their own systems for managing the poor. Some farmed out the labour of the poor to the highest bidder; some provided labour within the workhouse itself; such as winding silk or picking cotton, some adopted a 'roundsman' system; yet others arranged for the migration of their poor. Children, sometimes entire families, were sent from workhouses in London and the south east to find a new life in the factories of the north where agricultural wages tended to be higher than in the south. There, the factories provided work for a large number of people who needed to be supplied with every-day necessities including food. Agriculture was thriving, and good workmen could command decent wages. In purely agricultural regions, labour supply outstripped demand, and the result was often starvation wages, supplemented by the parish. 'Perhaps no group in nineteenth century England, except the child workers in the earlier factories, were so much the victims of circumstances over which they had no control as the agricultural labourers of the south' wrote Dorothy

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<sup>43</sup> Minutes of the Proceedings of the Governors of the Poor : St Margaret Westminster , CWA E5219.

Marshall.<sup>44</sup> South-west Hertfordshire stood between these two extremes, a mainly agricultural region having some industrial activity, each offering a check to prevent the excessive driving down of wages by reason of surplus labour. Wages of agricultural and general labourers were not high enough to be accounted a 'family wage', and it was from these families, especially children, that a large proportion of mill workers were drawn.

Workhouse inmates in Hertfordshire were variously set to work in the House, set to labouring work outside, or 'leased' to local farmers and textile manufacturers, just as in Coventry 'young and able-bodied persons are employed either at corn or silk mills, and in the labour of the house.'<sup>45</sup> The agreements between mill proprietors and Guardians followed a similar pattern to those in other districts, the proprietors honouring their obligations to their apprentices, but little more. Relations between proprietors and Guardians appeared generally harmonious, inspections finding few instances of even minor neglect, and none of cruelty, throughout Hertfordshire. The mills at Watford and St Albans had ceased to employ pauper apprentices by 1830, but as seen in Chapter 7, pauper children were taken to labour in the Tring mills from parishes outside Hertfordshire until 1867. The inability of these children to make a living from silk throwing, once out of their apprenticeships, greatly troubled the poor law guardians of Berkhamsted, and with reason, since it has been calculated that subsistence income for 'a family of average size' in 1867 was £64 per annum.<sup>46</sup>

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<sup>44</sup> Marshall, *Industrial England 1776- 1851*. p.85

<sup>45</sup> PP 1834 Vol. IV Appendix to the First Report from the Commissioners on the Poor Laws p.22a

<sup>46</sup> Justman and Gradstein, 'The Industrial Revolution, Political Transition, and the Subsequent Decline in Inequality in 19th-Century Britain.' p.123 The average family is here taken to contain 4 persons.

## Final Conclusions

Despite the underlying variations highlighted in this thesis, the status of the silk industry in Hertfordshire did reflect the national importance of the industry. It was prestigious, specialised, at times highly profitable, yet could never attain such size as to be a major employer other than in a severely localised context. The Hertfordshire mills were as susceptible to the problems of supply and demand, of competition, and of fluctuating import duties, as any other silk producing district in England. There was hardship for the workforce in slack times, but this was lessened, if not obviated, by the opportunities for alternative employment, so that there is little evidence of suffering commensurate with that documented by Tiratsoo with regard to Coventry<sup>47</sup> or by Malmgreen in relation to Macclesfield.<sup>48</sup> Few Hertfordshire families were wholly dependent upon the silk mills for their livelihood, and there appear to have been no petitions for aid in the manner of the Spitalfields weavers.<sup>49</sup>

Concentration upon the throwing branch of the industry limited the primary influence of the mills to factory employees, and the widespread attraction of the straw plait trade deterred, if not absolutely prevented, the development of weaving shops in the districts of south west Hertfordshire. Mills survived in the long term by diversifying production and cutting labour costs, the latter posing particular problems as it became more difficult to employ pauper children, farming the poor ceased to be common practice, and Government measures took children out of the workplace and into schools.

The Hertfordshire mills remained viable for more than a century, contributing in no small measure, particularly during the late eighteenth and early nineteenth centuries, to the prosperity and urban growth of the region. Nevertheless, it is hard not to conclude that the real over-arching problem of the

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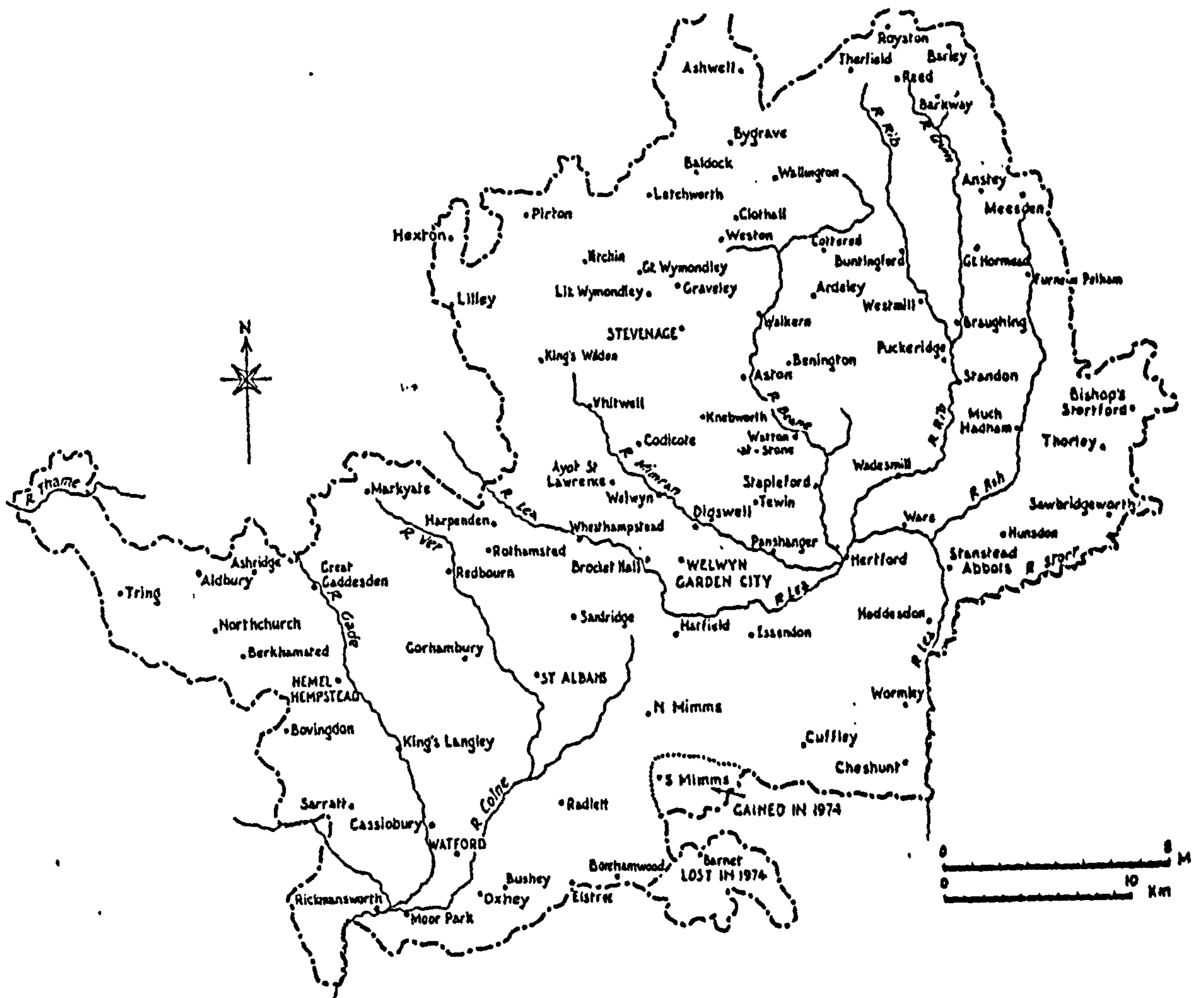
<sup>47</sup> Tiratsoo, *Coventry's Ribbon Trade in the mid-Victorian period : some social and economic responses to industrial development and decay*.

<sup>48</sup> Malmgreen, *Silk Town : industry and culture in Macclesfield 1750 - 1835*

<sup>49</sup> See this thesis Chapter 2 p39

silk industry in Hertfordshire was essentially the same as that of the English silk industry as a whole: the processing and production of highly-priced finished goods, with a narrow and inelastic market, from an already highly-priced imported raw material.

# APPENDICES



Hertfordshire

## APPENDIX I

### THE SILK MOTH AND ITS PRODUCT

#### The Life Cycle of *Bombyx Mori*, the Silk Moth :

The eggs, or 'grains' of the silk moth hatch at a temperature of around 55°F,<sup>1</sup> following an incubation period of approximately ten days. Once hatched, the optimum temperature rises to between 65 - 75 °F.<sup>2</sup> The caterpillars must be fed on the leaves of the white Mulberry. The Black Mulberry, although similar in many ways, is unsuitable as a food source for the silkworm caterpillar because although the new leaves are soft and edible, they quickly toughen, rendering them inedible; the leaves of the white variety remaining soft. Gorging on the leaves, the caterpillars shed their skins four times during the two weeks that it takes for the worm to grow to between 3 and 4 inches long. The outer cocoon is then spun, the twin filaments of the glutinous substance which form it coming from the mouth parts, or spinnerets of the silkworm, (much as the spiders web) and which when unwound can measure over 1000 metres.<sup>3</sup> Ure is more conservative in his estimate:

'the silk of a cocoon weighs two and a half grains, and affords a length of thread equal to from 750 to 1160 feet.'<sup>4</sup>

Schober's comment that an 'average-sized cocoon contains about 2,500 to 3,700 metres of silk fibre, but in mechanical reeling only a small fraction of this, some 600 to 700 metres, can be reeled'<sup>5</sup> goes some way to explain the apparent wide discrepancy in quantity estimates. The filaments stick together

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<sup>1</sup> Andrew Ure, writing on the production of silk in 1835, stipulates an incubation temperature of between 54 and 59°F . Ure *The Philosophy of Manufactures : or, an exposition of the Scientific, Moral, and Commercial Economy of the Factory System of Great Britain.* p.23

<sup>2</sup> Ure advocates exposure of the eggs '...to a warmth gradually increasing till it reaches the temperature of 86 °F., at which it must be kept stationary.' He warns particularly against the temperature being allowed to fall below 66 °F , although a temperature as high as 92 °F may be tolerated '...but from 68 ° to 86 °F is the ordinary range.' Ure *The Philosophy of Manufactures.* p.231

<sup>3</sup> Silk Museum, Braintree

<sup>4</sup> Ure, *The Philosophy of Manufactures.* p.239

<sup>5</sup> Schober, *Silk and the Silk Industry.* p.58-59

forming a flat thread and the worm, by moving its head folds the thread around itself in a figure of eight, wrapped from the outside, inwards. If the chrysalis that forms inside the cocoon is allowed to develop into the white, flightless moth, it will first moisten an area at one end of the cocoon to soften it, then break a hole in the cocoon through which the imago can escape. It is therefore necessary to kill the chrysalides before they emerge, in order to preserve an unbroken filament suitable for reeling. Some are indeed permitted to develop for the full eighteen or twenty days, in order to mate and produce the eggs for the next crop, but the majority are suffocated `...either by exposing the cocoons for five days to the sunshine, by placing them in a hot oven, or in the steam of boiling water.’<sup>6</sup>

## Reeling

Subsequent stages also require the extensive use of water, and a degree of skill in the reeler, on whose skill depends the quality of the raw silk. Reeling could entail a five-year training period, so complex was the process considered to be. Poor reeling, having too many loops, knots, split ends or crossed threads can cause the thread to tangle or break during later stages of winding or throwing.

‘In making its cocoon, the worm lays it’s thread in the form of figure 8’s, and cements it together with silk gum, or sericin, and before the thread can be reeled it is necessary to soften the gum ... with ordinary cocoons immersion in water at 80° to 90° C. for twenty-five to thirty seconds is sufficient to soften the outer layer of the cocoon so that the end of the thread can be found. The softening of the inner layers should take place gradually during the reeling, as a premature disintegration would cause much waste, and would give an uneven thread.’<sup>7</sup>

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The outer layer of “strusa,” or floss, as well as the inner husk, or “galettame,” go to form waste, and are utilised in schappe spinning. The middle part of the thread is best, and from it is formed by merely bringing into contact, without a process of twisting, grege, or raw silk, the most valuable semi-finished product of the silk industry. p59

<sup>6</sup> Ure, *The Philosophy of Manufactures*. p.234

<sup>7</sup> Schober, *Silk and the Silk Industry*.p.55,56

Usually carried out when the cocoons are fresh, and using female labour, the object of the reeling process is to wind as much as possible off the cocoons into hanks. Each reeler worked with a basin of hot water, the temperature regulated to 50-60°C either by a steam pipe or fire, depending on the sophistication of the filature. In some filatures the outer flossy covering was removed during initial boiling by means of twigs which in agitating the cocoons, allowed the reeler, or assistant to draw off the floss. The requisite number of cocoons bob gently in a reeling basin so that the hot water will soften the natural gum in the silk, allowing the thread to be wound off on a reel, in a mechanised filature often revolving slowly above the operator's head. The filaments pass through several glass eyes, are then crossed, becoming glued together again, this time into a thread which is called 'singles'. The singles, when reeled into large hanks called 'knots', each bunch of hanks being called a 'moss' and each bundle a 'book', were then imported into Europe as raw silk.

### **The Raw Material or 'What the throwster saw'**

Raw silk, or "grege" was the optimum stage at which to import silk to Europe from sources in Asia and the Far East. Less bulky than the cocoons, so susceptible to damage in transit, and having had the advantage of cheap labour for reeling, the raw silk was shipped to European centres possessing the technological capability, in the form of throwing mills with their mechanised systems, to process the raw silk more efficiently and to a higher standard than the hand-thrown product.

"Throwing" is the term used to describe the process by which the raw silk threads are twisted together in order to increase the strength, diameter and elasticity of the finished yarn. Arguably, the two most important kinds of thrown silk are organzine and tram both used for weaving, but crepes,



embroidery silks and cords all require different styles of throwing.<sup>8</sup>

Schober again gives the clearest exposition of the steps involved in the throwing process :

- a. Winding and cleaning of the grege.
- b. First twisting, or “spinning” (*filato, filage*).
- c. Doubling.
- d. Second twisting, or throwing proper (*torto, organsinage*).<sup>9</sup>

Singles were frequently used as warps for light fabrics “although some of this silk is so fine as to have five hundred thousand yards of length in one pound weight.”<sup>10</sup> Each type of silk had its own individual characteristics and particular use. While Bengal silk had no very good name for quality, it was a great deal cheaper and easier to obtain than European silk, which was reserved for the highest quality goods. Ure writes in 1835 that ‘Much of the Bengal silk is put into looms at Manchester in the single state’ continuing with a statement that should perhaps have sounded warning bells for the throwing establishments in Hertfordshire as well as those farther North...

There may therefore be a great increase of Bengal, China and Turkey raw silks without much increase in the silk-throwsters’ business.<sup>11</sup>

The implicit warning is that an increase in commodity imports does not necessarily indicate an increase in prosperity, or improved employment prospects for any section of the finishing and refining industries.

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<sup>8</sup> To make organzine, the thread of raw silk is first twisted, and two of these threads are then united by twisting. In the making of tram, the original single thread is not twisted at all, but two of them in their simple state are softly twisted together. Thus, in organzine, there is a compound torsion for giving firmness to warp threads, and in tram there is a single torsion, of only such a degree as to make the thread bear the tension of throwing it by the shuttle across the web. In warp, there are sixteen twists on the single thread, and from twelve to fourteen on the double. On looking through tram suspended in a good light, its want of twist in the component threads is very visible. Ure, *The Philosophy of Manufactures*. p.247

<sup>9</sup> Schober, *Silk and the Silk Industry*. p.60

<sup>10</sup> *Harmsworth Encyclopedia*, 1903 Vol.8 p.5541 This is the technical definition of a 9 denier thread, which is strong enough to be worked on a power loom.

<sup>11</sup> Ure, *The Philosophy of Manufactures*. p.239

## Technology and the Machine

The silk throwing mill is of ancient origin, documentary evidence proving the existence of complex circular throwing mills in the Italian city of Lucca in the last quarter of the 13<sup>th</sup> century ~ of such sophistication that they remained largely unchanged in design until the end of the nineteenth century. The *filatoio* `was a quite large piece of machinery, where well over one hundred spindles operated at a time with the help of a couple or so of assistants.’<sup>12</sup>

Zanier, having seen a working model of the *filatoio*, credits it as the source of Arkwright’s inspiration for improvements in cotton spinning effected during the eighteenth century, asserting further that there was `no other comparable labour-saving machinery in existence in Europe in the field of textile fibres yarn production. Indeed the *filatoio* can be seen as one of the very few highly labour-saving devices developed (or imported) in Europe during the Middle Ages.’<sup>13</sup> Water powered larger and more productive throwing mills as early as the fourteenth century in Bologna, and according to Zanier a factory system operated in Piedmont by the last quarter of the seventeenth century:

The largest silk mills of Piedmont ...built from 1670s onwards, housed from ten to twelve huge machines (each one eight to ten meters high) employing over three hundred full-time workers per mill. Moreover they operated all the year round, being veritable examples of factories before the factory age.<sup>14</sup>

Workers lived in dormitories close to the mill, much as the young apprentices of Tring would do more than a hundred years later in nineteenth-century England.

It is evident that in Piedmont increased productivity and improved quality of the final yarn over the following decades was due to numerous small technical refinements, plus the high quality of the raw silk employed, rather than any radical redesigning of the machinery.

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<sup>12</sup> Zanier, 'Where the Roads Met : East and West in the silk Production Process' p.42

<sup>13</sup> Zanier, 'Where the Roads Met : East and West in the silk Production Process' p.42-43

<sup>14</sup> Zanier, 'Where the Roads Met : East and West in the silk Production Process' p.43

.... wood was replaced by cast iron in the making of wheels, and crudely made wrought iron spindles were superseded by turned steel spindles. Similarly, metal bearings for the spindles replaced wooden shoulders. Elementary though these changes appear to be, they made an enormous difference to the performance of the machines : spindle speeds reached 3000 rpm (the Italian and French machines operated at only about 300 to 800 rpm) and costs were reduced by almost 50 per cent.<sup>15</sup>

In essence therefore, the Piedmontese mills were still, in 1830, operating the same type of machinery as that copied by Lombe in 1718.<sup>16</sup>

In 1621 a treatise on mechanics by Vittorio Zonca and published in Padua contained a description of a throwing mill, and there has been speculation by historians as to the possibility of English silk manufacturers having access to this volume. Had this been the case, would there not have been more efficient mills in England, long before Lombe's patent was lodged? As protection and a lack of any real competition may have inhibited radical change in France and Italy, so protection appears to have retarded modernisation and development in England until after 1824. Although prizes and premiums had been offered for inventions in the past, ~ in 1789, the *Times* reported an award of a 'premium of 30 guineas and a medal of the Laudable Society at their Great Room in the Adelphi ... for an improved silk loom' and a further award to the 'Rev. Mr Swain, who received a Medal for his method of breeding Silk-worms'<sup>17</sup> ~ it is only with the reduction of import duties that a veritable flurry of invention appears to have taken place. Prizes were offered over a wide range of technical innovations and cost-cutting improvements in production.

In May of 1824 the Society of Arts offered several such prizes, of which the most prestigious were also those most necessary to the success of the English silk industry:

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<sup>15</sup> Singer, Holmyard, et al. Eds. *A History of Technology* p.311

<sup>16</sup> Description of mills at Derby : Mantoux : p.125; Hard :p.152 plus illustration in Italy ; Zanier p.42 plus illustration

<sup>17</sup> *The Times* 28 May 1789 p.3i

The Society of Arts, being desirous of adapting the premiums offered by them for the encouragement of the silk manufacture, to the present exigencies of that important department of the productive industry of the country, have arranged them as follows:-

**Winding Raw Silk.**- To the person who shall invent and produce to the Society, a method, better than any hitherto known, of winding raw silk, that is in any degree sticky in its gum, or brittle in its texture, without injuring its colour or texture, or altering its weight, and at a cost not exceeding that of the ordinary methods;

*The Silver Medal, or Twenty Guineas.*

**Organzine Silk** – To the person who shall invent and produce to the Society, a method by which to organzine silk equal in quality to the Italian throw, at an expense not more than two-thirds of the current price of throwing;

*The Gold Medal, or Fifty Guineas.*

**Preventing the Watering of Plain Silks**

..... *The Silver medal; or Fifteen guineas*

**Machine for Silk Weaving** – figured silks, ...

... of patterns equally fine and rich as those now made in France, at less expense than the montures, etc. now in use, also affording greater facility for changing the pattern, and requiring less manual labour in working.

*The Gold Medal; or Fifty Guineas.*

**Weaving Ribbons in the Single Hand Loom**

*Gold Iris Medal; or Twenty Guineas*

**Dying Silk of a Pink or Rose colour** ...

... without the use of safflower, by a substitute of British Colonial growth, which shall produce colour equally beautiful and permanent, and at an expense not more than two-thirds of the current price.

*Gold Medal; or Thirty Guineas*

**Improved Black Dye for Silk...**

... superior in colour and durability to any at present use.

*Gold Medal; or Fifty Guineas*

**Dying with Lac Lake...**

... or with the colouring matter of Lac

*Gold Medal; or Thirty Guineas<sup>18</sup>*

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<sup>18</sup> *Manchester Mercury* 25 May 1824 3iii

The recurrent themes of these awards are higher quality (equal to, or better than, French or Italian products and methods), cheaper mechanical production costs, and cheaper labour costs. Underpinning all these is the desire to substitute foreign imports, whether of thrown silk or safflower, with comparable British products. The most desirable manufactures are organzine, figured silks, and a good, reliable black dye, the last being a most elusive commodity, liable to gross adulteration which frequently resulted in black silk products of poor quality that rotted swiftly. Courtaulds were still fighting against the use of inferior black dyes at the end of the nineteenth century, and James Salter-Whiter quotes in 1882 the silk manufacturer Mr. J T Slater,<sup>19</sup>

Manufacturers must return to honesty in the article they produce. Formerly silk was prized as the most durable of materials for apparel; a dress would be handed down from mother to daughter, and was preferred by people of limited means to all other fabrics, on account of its economy and respectability of appearance. Now, many a black silk will not last a season, and may, perhaps, cut out at the plaits in a week. Thus a large body of disgusted customers have abandoned the material altogether, and will wear anything rather than black silk. .... for how is it possible for an article to wear well which unfortunately goes under the name of 'silk' and consists of two-fifths of silken thread and three-fifths of dye stuff; a large proportion of which is acid, used to fix or gum the weighting matter onto the thread?<sup>20</sup>

The English silk manufacturers, whether throwsters or weavers, always claimed that their product could stand comparison with any imported item, but that the capricious desire of the public for foreign goods, and the high costs of production in comparison to continental producers, set them at considerable disadvantage from the outset. The history of the silk industry in Europe provides at least some of the answers as to why England should stand at such a disadvantage, and in the face of such difficulties still endeavour to establish such an industry here.

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<sup>19</sup> Mr J. T. Slater of Messrs Slater, Buckingham and Co., (of 35 Wood St., EC and Spitalfields)

<sup>20</sup> Whiter, *The Silk Industry of Britain and its Revival*. p.6-7



## APPENDIX II

### A NOTE ON SOURCES

The census returns of 1851, 1871, 1881, and 1891 play a particularly important part in this study, allowing the analysis of occupational, gendered, or age-specific groups, but also making it possible, usually with the aid of other sources, to follow a number of individuals through their working lives. Questions as to the work opportunities of male children once employed in the silk mills, can be answered by specific example, and to a certain extent by quantitative analysis, although the number of traceable individuals is necessarily limited. This problem is even more marked in the tracing of female children as they grow to adulthood and marry, although in the case of the pauper children sent to Tring, birthplace becomes a particularly valuable indicator.

Analysis of each individual census presents particular problems as to the interpretation of occupational entries, some of which may be resolved by the use of other sources, but any categorisation of work, whether by materials used, or by sphere of operation, is necessarily subjective. The original premise for gathering occupational information in the census was to determine the materials used by respondents in their daily work, and assess the resources of the nation. The classification devised by Booth, covering the years 1841-1881, ensured that all persons were either definitely employed, or unemployed. He made no allowance for the partially or seasonally employed. 'All males over 20 years of age are counted as in some sense self-supporting, but no male under 20, or female of any age, is counted as self-supporting or occupied unless stated to be so in the census.'<sup>1</sup> Recognition of part-time or seasonal workers is highly problematic, because the census was designed to be a snapshot, a picture of the distribution and occupational attributes of a population as recorded on one particular day.

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<sup>1</sup> Quoted by W.A. Armstrong 'The Use of Information about Occupation' Ch.6 p. 253

Although it may be possible to trace an individual, with confidence, through several decennial census records, this still will not provide a lifetime work history. If such a trace is considered in its true light ~ of one day in the life of a worker, recorded once every ten years ~ it becomes clear that the gaps are too extended to show more than a very vague outline. Even in the case of a family man, whose children were born variously in Rickmansworth, South Mimms, Nottingham, and Watford, we may speculate that he moved around the country finding work in those places, but all it really shows, (if the birth places are correctly given) is that the mother of the child was there.

In this study occupational data extracted from the census has been categorised according to the system used by the Centre for Regional and Local Studies at the University of Hertfordshire,<sup>2</sup> modified to accommodate the silk industry as a special case independent of other textile workers, and to differentiate the allied paper-mill and rag factory workers from among miscellaneous manufacturing groups. The presence in Hertfordshire of three special industries, silk, paper, and straw plaiting, that were likely to have vied with each other for the same labour, will therefore be discussed in the following chapters.

All three industries depended to some extent upon the labour of women and children, and the census has undergone strong criticism for the under-estimation of womens work, particularly since the publication in 1930 of *Women Workers and the Industrial Revolution* by Ivy Pinchbeck.<sup>3</sup> Since then, the most detailed expositions of the limitations of the nineteenth century census have been produced by Edward Higgs, who argues through a number of books and articles that 'the quality of the data in the Victorian census tables is indeed problematic'<sup>4</sup>. Higgs maintains that the most likely group to have been misrepresented are women in domestic service, conceding, despite some misgivings, that 'in general,

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<sup>2</sup> This system was used in Vol.II of *Population, economy and family structure in Hertfordshire in 1851 : The St Albans Region*, (Goose, 2000) but differs marginally from that used in Vol.I *The Berkhamsted Region* (Goose, 1996)

<sup>3</sup> Pinchbeck, *Women Workers and the Industrial Revolution 1750-1850*.

<sup>4</sup> Higgs, 'Occupational censuses and the agricultural workforce in Victorian England and Wales.' ~*Economic History Review* XLVIII, No. 4: pp.700-716.



however, the recording of women factory workers appears to be fairly reliable'.<sup>5</sup> The regular recording of women in straw plait clearly shows that in this Hertfordshire region there was no general tendency to ignore women's work, although it is noticeable that the number of employees stated by mill owners do not always conform to the number of silkworkers designated as such in the census. This does not, however, necessarily mean the under-reporting of women: workers of either sex may have come from farther afield than the immediate district; auxiliary workers, scavengers, cleaners, mill labourers, may not have been recognised as workers in the silk trade; unspecified weavers, as in Saratt, may be working with silk<sup>6</sup>, but may equally be working with other textile yarns.

Tables and analysis presented in this thesis include all inhabitants of these districts, unless otherwise annotated, as the datasets used for 1851, 1881, and 1891, include all personnel in south west Hertfordshire. Sampling has not been necessary in this case. Data for 1871 is, however, restricted to the silk-producing districts of Watford, Berkhamsted, and St Albans. (Watford Town Hamlet, Oxhey, Rickmansworth, Tring, St Albans, Redbourn) Data for 1861 has been transcribed only for Oxhey parish, as the Watford area most densely populated by silk mill workers, for Rickmansworth parish, because this was the last census taken while the mill still appeared in the reports of the factory inspectors, and for Redbourn, this being the first census taken after the mill commenced production in 1857.

Comparative analysis across several decennial census present problems of spatial continuity. While it may be easy to compare the familial or occupational composition of Snatch-up Alley or Ballards Buildings over a fifty year period, the areas covered by the Enumeration sub-districts in which they are situated may undergo considerable change at each census. The majority of such problems have been overcome by reference to parish divisions, rather than enumeration districts alone.

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<sup>5</sup> Higgs, *A Clearer Sense of the Census*.

<sup>6</sup> A number of weavers unspecified in 1851 are, in the 1861 and 1871 census, designated as silk weavers.

Parliamentary papers include the proceedings of the House of Commons as recorded in Hansard, the proceedings of the House of Lords, Reports of Royal Commissions of Enquiry and Committees, the reports of Factory Inspectors, and the letters of petitioners. They contain a wealth of information about employment, poverty, and factory conditions. The evidence collected by commissioners and committees must, however, be treated with some circumspection. The purpose of the evidence must be borne in mind: that each witness, whether manufacturer or employee, would have had some kind of agenda, a reason for being there. The Report of the Select Committee on the Bill for the Regulation of Factories (1832) is a highly biased document attacking the factory system. Despite the original intention that it should form one-half of a balanced report, the defence by factory owners was never made, so the Report stands alone as a record of lost childhood.

The Report in its final form was therefore designed to present the factory system in the worst possible light. Oastler and the Short Time Committees carefully selected witnesses and coached them in advance as to how they should answer Sadler, who knew how they would answer before he asked a question.<sup>7</sup>

By contrast, the Reports of 1816 and 1832 of the Enquiry into the Employment of Children in Manufactories, interviewed a number of mill owners, and these were undoubtedly biased towards presenting a caring and compassionate aspect to the employment of children.<sup>8</sup> It was by no means proven that the factories were injurious to health, and supporters on both sides of the argument fought to justify their stance, an anonymous pamphlet of 1832 going so far as to proclaim the beneficial effects of factory labour in the strongest possible terms:

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<sup>7</sup> Nardinelli, 'Child Labor and the Factory Acts.' pp.739-755.

<sup>8</sup> It was not only in England that manufacturers were regarded, and regarded themselves, as giving more to the community than they took. 'Nineteenth-century industrial child labour was concentrated in large textile mills, in Britain as in Finland and Russia, and foreign owners, whose cotton mills provided poor children with employment, were in Finland seen as benefactors.' Marjatta Rahikainen: 'Historical and present-day child labour: is there a gap or a bridge between them?' p.144

The very objection to the circumstances of scrofulous and sickly children being found in Factories, if rightly considered, should operate in their favour. It is a well known fact, and can be proved in a multitude of instances, that such are admitted into them, because they are unfit for other employments ~ there they find an asylum in a dry, warm atmosphere, which suits their constitutions, and their general health is improved.<sup>9</sup>

Letters to and from mill owners, Poor Law Guardians or vestry can sometimes tell more about the every day experience of work in the silk mills than the Reports of the Commissioners. Here are recorded the small day by day complaints, the misgivings, the objections, the pitiful wages, as well as serious misdemeanours. The decline of the industry is also recorded here, in the increasing reluctance of Unions to apprentice children to a trade that would not support them in adulthood. The London parishes of St Margarets Westminster, St Martin-in-the-Fields, and St Clement Danes were among those that sent pauper apprentices to the Hertfordshire mills, sending inspectors to report on the care and condition of the children. Reports concerning specific groups of children for whose welfare the inspectors are in some measure still responsible, are perhaps more reliable than the minutes of evidence collected for a political cause, but even these must be measured against the Vestry and Union reports of the receiving parishes. Evidence from these sources tends more towards the practical, and less to the exposition of a narrowly held dogma.

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<sup>9</sup> Anon. *Exposition of the Factory Question*. (1832) p.5

## APPENDIX III

## HERTFORDSHIRE SILK MILLS AND THEIR PROPRIETORS

NAME	LOCATION	EARLIEST RECORD	DATE OF CLOSURE	TYPE
Rookery Mill	1 Oxhey, Watford	1760	1881	Purpose built throwing mill
			Sale by Auction: Oct 1882	Water & steam power
	2 Red Lion Yard			Horse powered
	3 Clarendon Rd. Corner * Nr. Loates Lane	1771-2	after 1785	Horse powered
Rickmansworth Mill	4 North End House Rosslyn Rd/High St	1796	1802	
	High St. Rickmansworth	1806	c. 1881	Steam powered
Tring Mill	1 Brook St., Tring	1824	c. 1890	Converted from water powered Corn mill. Water/Steam.
Abbey Mills	St Albans	1804	1956	Converted from Corn mill Re-modelled :
Hatfield	Hatfield Workhouse	1818	1849	Steam powered
Hemel Hempstead	High Street	~	Bought 1798 by the Cranstones	
Bushey Silk Mills	Bushey, Watford	1826-27	before 1832	
Grove Mill, Hitchin		1828	before 1838	Converted Corn mill
Redbourn		1857	1938	Purpose-built Throwing Mill
Aylesbury (Bucks)	Akeman St.	1828		Pauper Lab. Steam
Chesham (Bucks)		1830	c. 1881	

\*This mill of Thomas Toppin may have been on the site of one of the earlier mills.

## PROPRIETORS

### Watford Rookery Mill

1768	Thomas Deacon of Wiggshall
By 1771	Peter Paumier
c.1779	Lewis Paumier* (moved out of district 1824)
1807	William Harty/Harvy?
1811	Messrs. Rock & Shute?
1816	Indentures of lease and release of Mill House dated 9th & 10th July, to Richard Shute (d.1819 ... vested in the Trustees under the terms of his will)
c.1826	Thomas Rock Shute (d. Aug.1873)
1873-4	James Hart and Son

### Watford Rosslyn Rd/High St. before 1796

Thomas Watson (d.1802)

### Watford, site NK

c.1771	Edward Crutchley & John London
c.1772	William Parry
until at least 1785	
Nr. Loates Lane c.1832	Thomas Toppin of Beechen Grove(d. by 1850)

### Rickmansworth: High Street

1806	William Harty
c.1826	Thomas Rock Shute
new building 1831	

### Tring: Brook Street

1824	William Kay (d.1834)
1828	David Evans & Co (lease)
1878	N M Rothschild and Sons (T.P. Estate 1872 : Lionel Rothschild)

### St Albans : Abbey Mills

1804	Charles Woollam (d. May 16 <sup>th</sup> 1836)
	John Woollam (d. June 11 <sup>th</sup> 1869)
	Charles Woollam II (d. Feb. 4 <sup>th</sup> 1915)
1902	John Maygrove & Co. Ltd

### Hatfield

1818	John Woollam
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### Bushey

by 1826	Braden and Jones
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### Grove Mill

by 1828	John Ransom of Hitchin
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### Redbourn

1857	John Woollam
	Charles Woollam
1902	John Maygrove & Co. Ltd

### Aylesbury, Bucks

Robert Nixon and Richard Moscrop

## SALE OF THE WATFORD MILLS

*Watford Observer* : Sat. 18 October 1873 p.1iii

To Silk Throwsters, Manufacturers, and others.  
The valuable old-established Freehold  
Silk Mills, situate at  
WATFORD, RICKMANSWORTH,  
And  
CHESHAM,  
As carried on by the late Mr. T.R. Shute, and sold,  
with the goodwill attached, in consequence of his recent  
decease.

MESSRS.

RUSHWORTH, ABBOTT and Co.

Are directed by the executors and trustees to sell by auction, at the Mart, Tokenhouse-yard, near the Bank of England, on Wednesday, november 19<sup>th</sup>, 1873, at 1 for 2 o'clock, in 3 lots, unless acceptable offers should be previously made by private treaty:

LOT 1.~ The highly valuable FREEHOLD SILK MILLS, now in full work, advantageously situate near the town of Watford, Herts, where there is a first-class station on the London and North Western Railway. They comprise four spacious floors, for drawing, spinning, throwing, doubling, winding, and reeling, and all necessary appliances for carrying on a first-rate business, driven by water or steam. The water-power is supplied by the River Colne, and is capable of working up to 20-horse power; the steam, by a 25-horse power condensing engine, by Penn, and a Galloway's double-fluid cylindrical boiler; gas works, stabling, numerous cottages for workmen, and capital residence with gardens and rich meadow land; the whole comprising about 11 acres. With possession.

LOT 2.~ A capital modern FREEHOLD SILK MILL, situate at Rickmansworth, Herts, about four miles from Watford, and near the railway station, fitted with silk winding and drawing machinery driven by steam-power, with manager's residence, all in good condition, and will be sold as a going concern. Most desirable as an addition to Lot 1.

LOT 3.~ A FREEHOLD SILK MILL, situate at Chesham, Bucks, about eight miles from Rickmansworth, fitted with winding and drawing machinery with steam power and boiler and other appliances, manager's residence and garden.

The several lots may be viewed by previous appointment, to be made with Messrs. Rushworth, Abbott, and Co., 22, Savile-row, W., and 19, Change-alley, E.C., of whom particulars may be had; also of Messrs. Garrard and James, solicitors, 13, Suffolk-street, Pall-mall, East. Messrs. Lawrie, Keen, and Rogers, 24, Knightrider-street, Doctors Commons; and at the following inns. ~ the Rose and Crown, Watford; George, Rickmansworth; George, Chesham; Clarence, Manchester; Bulls Head, Congleton; the Midland, Derby; and the Macclesfield Arms, Macclesfield.

(Advertisement repeated in the  
*Watford Observer* 25 Oct 1873 p.1iii)

*Watford Observer* 14 May 1881 p1iv

All three mills at Watford, Rickmansworth and Chesham were again advertised for sale in 1881 when the state of the mills were described as follows:

**AT WATFORD.**~ The Rookery Mill, 17 miles from London, on the river Colne, with valuable water power, at present fitted with machinery for carrying on the business of a silk throwster, but equally available for a bleacher's papermaker's, paperstainer's, dyers, or laundry business, or other manufacturing or commercial purposes. A substantial brickbuilding of four floors, about 106 feet long by 34 feet wide, well lighted and ventilated, worked by water or steam power, or both in combination; large yard, containing coal stores, gas works, engine and boiler houses, millwright's shop, carpenter's shop, a brick building of two floors, containing store room, washing-house, and breakfast-room for work people, stabling for five horses; coach-house, harness-room, and cart-shed, manager's house, 34 cottages for workpeople, and four pieces of accommodation meadow land, eligible for building purposes; the whole occupying an area of about 11 acres.

**AT RICKMANSWORTH** ~ A Freehold Mill, about four miles from Watford, and near the station on the Watford and Rickmansworth Railway. A substantial brick building of three floors, about 74 feet by 30 feet, worked by steam power, with manager's cottage and garden attached.

**AT CHESHAM** ~ A Freehold Mill about eight miles from Rickmansworth and 12 from Watford. A substantial brick building of three floors, about 80 feet long by 30 feet wide, worked by steam power, with manager's cottage and garden, stores and stabling; the whole occupying an area of about three-quarters of an acre. The mills were for many years worked by the late Mr. T. R. Shute, and are fitted with winding, spinning, double-throwing, and drawing machinery, which a purchaser may take at his option in whole, or in part, at a valuation.

The properties are in hand, and may be viewed by orders ...



## SILK MILL WAGES

### Dr. Mitchell's Report.

*Childrens Employment* Vol.4: Reports of Factory Commissioners II 1834 p.29 Average Weekly Wages in Norfolk, Suffolk and Essex Silk Mills.

AGE	Derby		Norfolk, Suffolk, Essex		Somerset	
	Male	Female	Male	Female	Male	Female
7	1s 8d	1s 6d		1s 6d	9d	10 <sup>1</sup> / <sub>4</sub> d
10	1s 10 <sup>1</sup> / <sub>2</sub> d	3s 1 <sup>1</sup> / <sub>4</sub> d	1s 11d	1s 10 <sup>1</sup> / <sub>2</sub> d	1s 2d	1s 3d
13	2s 11d	3s 4 <sup>1</sup> / <sub>2</sub> d	2s 6d	2s 5 <sup>1</sup> / <sub>2</sub> d	1s 9 <sup>1</sup> / <sub>4</sub> d	2s 9 <sup>1</sup> / <sub>2</sub> d
15	8s	4s 6d		3s 1d	3s 5d	3s 9d
18	10s 8d	6s 2d		3s 10 <sup>1</sup> / <sub>4</sub> d	6s 6d	3s 9 <sup>3</sup> / <sub>4</sub> d
20	16s 9d	6s 4 <sup>1</sup> / <sub>2</sub> d		4s 7 <sup>1</sup> / <sub>2</sub> d	9s 3d	5s 1d
23	17s 10 <sup>1</sup> / <sub>2</sub> d	7s 5 <sup>1</sup> / <sub>2</sub> d	16s 6d	5s 1d	6s 9d	5s 3d
25	21s 10	7s 5 <sup>1</sup> / <sub>4</sub> d		5s 7d	10s	5s 5 <sup>1</sup> / <sub>2</sub> d
28	20s 10 <sup>1</sup> / <sub>2</sub> d	6s 10d		4s 10d	6s	4s 10 <sup>1</sup> / <sub>2</sub> d
30	21s 7d	7s 1 <sup>1</sup> / <sub>2</sub> d		5s 2 <sup>1</sup> / <sub>2</sub> d		4s 4 <sup>1</sup> / <sub>2</sub> d
33	32s 6 <sup>3</sup> / <sub>4</sub>	8s	18s	4s 4 <sup>1</sup> / <sub>2</sub> d	12s	5s
35	30s 10 <sup>1</sup> / <sub>2</sub> d	7s 0 <sup>1</sup> / <sub>2</sub> d		4s 3d	7s 6d	5s 4d

In Derby the highest average wage recorded for males was 36s 4d (3 males at age 39) Highest female wage was 8s 0<sup>1</sup>/<sub>2</sub>d. (10 females aged 34)

In East Anglia male wages reached 31s 6d (1 male aged 29) and female wages 12s (1female aged 44) The highest female earners were 4 women aged 44-50 averaging from 9s 6d to 12s.

In Somerset the highest average male wage was 18s (1 male aged 48) and female wage 7s ~ but more women came into those categories averaging 7s. ie 1 aged 30; 7 aged 36; 3 aged 37; 1 aged 46; 2 aged 56.

**Hertfordshire**

Watford : 1832-3

Male	
Female`	6s – 7s
Children	1s – 3s 6d

*Evidence of T.R. Shute*

Tring : 1840 Average Weekly Wage

Superintendents	£1
Male	12s-15s
Female	5s 6d
Children	3s

*Osborne, Railway Guide p.125***c.1860**

Pauper child aged 13            2s 6d made up to 3s 6d by the parish  
Lucy Luck p.4

**Coventry:** 1834 Average Weekly Wage

Plain branches	9s – 12s
Fancy	14s – 16s

*(Note: 1815-1832 Average wages of a weaver 14s 6d per week)***Coggeshall** 1834 Average Weekly Wage

(Mr John Hall, silk throwster &amp; manufacturer)

'good hands working on rack looms' 25s (48 hrs per week)

PP. 1834 Vol.IV *Appendix to the First Report from the Commissioners on the Poor Laws* p.24-25**Essex (Courtaulds)**  
1837/8

Male	7s 2d
Female	5s 1d
Children	

**Coggeshall 1840**

(Weavers)

Male 8s – 8s 6d

Female 4s 6d – 5s

Figs for Courtaulds and Coggeshall 1840: Sharpe, *Adapting to Capitalism* p167

**Macclesfield and neighbourhood 1862****Silk throwing**

		Amount per week	Hours per week
Hard silk winders	Women	5s 3d ~ 6s 6d	60
	Girls & Boys	3s ~ 5s	60
Danters	Girls & Boys	7s ~ 8s	60
Cleaners	Women	5s 3d ~ 6s 6d	60
Doublers	Women	6s 6d ~ 7s 6d	60
Spinning Mill		6s ~ 7s	60
Throwing Mill		10s ~ 12s	60
Stewards		15s ~ 18s	60
Half-time hands		1s 6d ~ 2s	37 <sup>1</sup> / <sub>2</sub>
Staffmen & Sizers	Men	15s ~ 18s	60
Engine men & Stokers	Men	18s ~ 20s	60

**Leek and Macclesfield 1915** Average family earnings when both husband and wife work = 28s week.

**Females:**

Leek : av. 13s per week

Macclesfield:

Weavers/ warpers ; av. 14s experienced as high as £1

Winders : av. 10s 6d

**Males:**

Leek : 20s – 22s per week

Macclesfield : 18s - £1 (work for men very scarce.)

Lane, 'Leek and Macclesfield' p204-213

Minute Books of the Aylesbury Guardians. G2/3

20 March 1839

The Report of the Committee appointed for the purpose of visiting the Silk Mills at Tring to inspect the state of the Children employed there belonging to this Union Your Committee proceeded accordingly to Tring and found the children at work in the Mill orderly and well conducted. Your Committee afterwards visited them at their private dwellings and found them generally in as clean and healthy a state as they could expect from their very slender earnings which earnings were in most instances no more than barely sufficient to purchase for them the commonest necessaries of life. Your Committee likewise found upon enquiry on the spot that Sunday was wholly neglected the Factory Children were spending most of the day in a neighbouring field at hockey pitch and bustle and other Games quite unsuited to the sacredness of the Sabbath. We therefore think it right to recommend that an application to Mr. Evans the Owner of the factory to institute a School for the instruction of those children for whose well doing and morality this Board has incurred a great responsibility by sending them from their own natural Guardians.

Christopher Roads Chairman.

## APPENDIX IV

**Table A.1 Net output of the principal textile industries of the United Kingdom, 1770-1870**  
(in millions of pounds at current values)

	Cotton	% of total	Wool and Worsted	% of total	Linen	% of total	Silk	% of total	Totals
Circa	(£m)	textiles	(£m)	textiles	(£m)	textiles	(£m)	textiles	(£m)
1770	0.6	5	7	58.3	3.4	28.3	1	8.3	12
1805	10.5	31.9	12.8	38.9	7.6	23.1	2	6.1	32.9
1821	17.5	35.3	16.6	33.5	12.5	25.2	3	6.0	49.6
1836	21.8	40.8	16.7	31.3	8.4	15.7	6.5	12.2	53.4
1845	24.3	40.3	21.1	35.0	8.4	13.9	6.5	10.8	60.3
1850	21.1	37.0	20.3	35.6	8.7	15.2	7	12.3	57.1
1855	26.2	41.3	20.2	31.9	9	14.2	8	12.6	63.4
1860	33	45.5	21.2	29.2	9.4	12.9	9	12.4	72.6
1865	30.1	38.8	25	32.2	13.5	17.4	9	11.6	77.6
1870	38.8	45.9	25.4	30.1	12.3	14.6	8	9.5	84.5

*Source : Percentages calculated from figures in Deane and Cole p.212*

**Table A.2 Imports of Raw and Thrown Silk 1700-1899 (Charts 3.1 & 3.2)**  
Average Imports per year in thousand lb. calculated as 5 year averages.

	Imports of Raw & Thrown Silk					Retained Imports				
	Raw	Th.	All	%Raw	%Th	Raw	Th.	All	%Raw	%Th.
1700-04	444.4	80.2	524.6	84.7	15.3					
1705-09	270.2	103.4	373.6	72.3	27.7					
1710-14	263.6	113.4	377	69.9	30.1					
1715-19	388.6	216.2	604.8	64.3	35.7					
1720-24	368.4	284	652.4	56.5	43.5					
1725-29	413.4	283.6	697	59.3	40.7					
1730-34	399.4	274	673.4	59.3	40.7					
1735-39	376	239.6	615.6	61.1	38.9					
1740-44	283.6	227	510.6	55.5	44.5					
1745-49	356.2	238	594.2	59.9	40.1					
1750-54	370	250	620	60	40					
1755-59	410	310	720	57	43					
1760-64	432	402	834	52	48					
1765-69	581	398	979	59	41					
1770-74	505	407	913	55	45					
1775-79	621	367	988	63	37					
1780-84	746	433	1178	63	37					
1785-89	726	339	1065	68	32	648	317	966	67	33
1790-94	871	398	1269	69	31	814	382	1196	68	32
1795-99	691	402	1093	63	37	625	367	992	63	37
1800-04	794	368	1162	68	32	759	331	1090	70	30
1805-09	759	442	1202	63	37	734	392	1126	65	35
1810-14	1230	434	1663	74	26	963	313	1276	75	25
1815-19	1341	311	1652	81	19	1239	309	1548	80	20
1820-24	2467	378	2845	87	13	2458	375	2834	87	13
1825-29	3321	428	3748	89	11	3188	407	3595	89	11
1830-34	4007	328	4335	92	8	3923	309	4232	93	7
1835-39	6101	267	6367	96	4	5909	244	6153	96	4
1840-44	5089	340	5429	94	6	4910	329	5239	94	6
1845-49	5669	589	6257	91	9	5306	529	5835	91	9
1850-54	7757	632	8389	92	8	7066	382	7448	95	5
1855-59	10435	622	11057	94	6	8330	313	8643	96	4
1860-64	11585	109	11693	99	1	7442	-131*	7311	102	-2*
1865-69	9501	182	9683	98	2	6309	84	6393	99	1
1870-74	10678	150	10828	99	1	7301	117	7417	98	2
1875-79	8160	109	8269	99	1	5469	65	5534	99	1
1880-84	9864	249	10113	98	2	8403	234	8637	97	3
1885-89	8160	109	8269	99	1	5469	65	5534	99	1
1890-94	8863	483	9346	95	5	7876	431	8307	95	5
1895-99	9117	449	9567	95	5	8465	406	8871	95	5

Source: Mitchell and Deane (1962) pp.205-207 ( 1814-1827 from page 207, not 206)

\* Re-export figures for thrown silk in 1862,1863, 1864&1865 exceed import figures.

Table A.3 Numbers Employed in the Silk Industry (in thousands)

Source: Mitchell and Deane (1962) p.211

	Workers of all ages			Sex Ratio	Under 13			Age 13-18		
	Silk M	Silk F	Silk All		Silk M	Silk F	Silk All	Silk M	Silk F	Silk All
	1835	10	21		31	48	3.4	5.6	9	2.6
1838	11	23	34	48	3.4	5.2	8.6	3.2	8.5	11.7
1847	14	31	45	45	3	4.8	7.8	3.7	9.6	13.3
1850	13	30	43	43	2.4	4.8	7.2	3.2	*	3.2
1856	17	39	56	44	2.7	5.4	8.1	4.1	*	4.1
1861	16	37	53	43	2.1	4.9	7	3.2	*	3.2
1867	12	29	41	41	1.3	3.6	4.9	2.5	*	2.5
1870	14	34	48	41	2.3	4.7	7	2.7	*	2.7
1874	13	32	45	41	2.3	4.5	6.8	2.4	*	2.4
					Half Time Under 14			Full Time Under 18		
1878	12	29	41	41	1.4	2.8	4.2	2.2	*	2.2
1885	13	30	43	43	1.2	2	3.2	2.2	*	2.2
1890	13	28	41	46	1.2	1.7	2.9	2.5	*	2.5
1895	11	24	35	46	0.5	0.8	1.3	2.1	6.1	8.2
1896	11	25	36	44	0.4	0.8	1.2	2	6.3	8.3
1897	11	26	37	42	0.3	0.8	1.1	2	6.7	8.7
1898	10	25	35	40	0.3	0.6	0.9	1.9	6.2	8.1
1901	9	23	32	39	0.3	0.4	0.7	1.7	5.1	6.8
<b>% of juvenile silkworkers</b>										
Year	Under 13			13-18			Under 18			
	Silk M	Silk F	Silk All	Silk M	Silk F	Silk All	Silk M	Silk F	Silk All	
1835	34	26.7	29.0	26	32.9	30.6	60	59.5	59.7	
1838	30.9	22.6	25.3	29.1	37.0	34.4	60	59.6	59.7	
1847	21.4	15.5	17.3	26.4	31.0	29.6	47.9	46.5	46.9	
1850	18.5	16.0	16.7	24.6	*	*	43.1	*	*	
1856	15.9	13.8	14.5	24.1	*	*	40.0	*	*	
1861	13.1	13.2	13.2	20.0	*	*	33.1	*	*	
1867	10.8	12.4	12.0	20.8	*	*	31.7	*	*	
1870	16.4	13.8	14.6	19.3	*	*	35.7	*	*	
1874	17.7	14.1	15.1	18.5	*	*	36.2	*	*	
	Under 14 Working Half-Time			Under 18 Working Full Time						
1878	11.7	9.7	10.2	18.3	*	*	30.0	*	*	
1885	9.2	6.7	7.4	16.9	*	*	26.2	*	*	
1890	9.2	6.1	7.1	19.2	*	*	28.5	*	*	
1895	4.5	3.3	3.7	19.1	25.4	23.4	23.6	28.8	27.1	
1896	3.6	3.2	3.3	18.2	25.2	23.1	21.8	28.4	26.4	
1897	2.7	3.1	3.0	18.2	25.8	23.5	20.9	28.8	26.5	
1898	3.0	2.4	2.6	19.0	24.8	23.1	22.0	27.2	25.7	
1901	3.3	1.7	2.2	18.9	22.2	21.3	22.2	23.9	23.4	

## APPENDIX V

Table A.4 OCCUPATIONAL STRUCTURE : The Watford Districts 1851

ABBOTS LANGLEY: ALL POPULATION	AGE 15 AND ABOVE												
	TOTAL:		1177		1199		2376		729		748		1477
TOTAL EMP:	760	64.6	367	30.6	1127	47.4	702	96.3	333	44.5	1035	70.1	
	MALE		FEMALE		ALL		MALE		FEMALE		ALL		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Agriculture	312	41.1	3	0.8	315	28.0	290	41.3	3	0.9	293	28.3	
Textiles	13	1.7	56	15.3	69	6.1	11	1.6	48	14.4	59	5.7	
Misc Manufactures	7	0.9	0	0.0	7	0.6	6	0.9	0	0.0	6	0.6	
Leather	20	2.6	4	1.1	24	2.1	20	2.8	4	1.2	24	2.3	
Building	34	4.5	0	0.0	34	3.0	34	4.8	0	0.0	34	3.3	
Metal	27	3.6	0	0.0	27	2.4	27	3.8	0	0.0	27	2.6	
Wood	28	3.7	0	0.0	28	2.5	28	4.0	0	0.0	28	2.7	
Food/Drink	41	5.4	5	1.4	46	4.1	41	5.8	0	0.0	41	4.0	
Transport	28	3.7	0	0.0	28	2.5	24	3.4	0	0.0	24	2.3	
Serv/Domestic /Service	75	9.9	128	34.9	203	18.0	72	10.3	122	36.6	194	18.7	
Public Serv/Prof	13	1.7	10	2.7	23	2.0	13	1.9	10	3.0	23	2.2	
Ind. Means	6	0.8	16	4.4	22	2.0	6	0.9	16	4.8	22	2.1	
Straw	2	0.3	103	28.1	105	9.3	1	0.1	90	27.0	91	8.8	
Quarry/Mine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
Retail/Distribution	9	1.2	0	0.0	9	0.8	9	1.3	0	0.0	9	0.9	
Misc	84	11.1	0	0.0	84	7.5	72	10.3	0	0.0	72	7.0	
Silk	0	0.0	1	0.3	1	0.1	0	0.0	0	0.0	0	0.0	
Paper	61	8.0	41	11.2	102	9.1	48	6.8	40	12.0	88	8.5	
	760	100.0	367	100.0	1127	100.0	702	100.0	333	100.0	1035	100.0	
Dependent/No occ.	417	35.4	832	69.4	1249	52.6	27	3.7	410	54.8	437	29.6	
<b>ALDENHAM: ALL POPULATION</b>													
TOTAL:	AGE 15 AND ABOVE												
	TOTAL EMP:		821		832		1653		528		543		1071
TOTAL EMP:	544	66.3	232	27.9	776	46.9	518	98.1	223	41.1	741	69.2	
	MALE		FEMALE		ALL		MALE		FEMALE		ALL		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Agriculture	320	58.8	3	1.3	323	41.6	296	57.1	3	1.3	299	40.4	
Textiles	6	1.1	14	6.0	20	2.6	6	1.2	13	5.8	19	2.6	
Misc Manufactures	2	0.4	0	0.0	2	0.3	2	0.4	0	0.0	2	0.3	
Leather	5	0.9	0	0.0	5	0.6	5	1.0	0	0.0	5	0.7	
Building	23	4.2	0	0.0	23	3.0	23	4.4	0	0.0	23	3.1	
Metal	7	1.3	0	0.0	7	0.9	7	1.4	0	0.0	7	0.9	
Wood	25	4.6	0	0.0	25	3.2	24	4.6	0	0.0	24	3.2	
Food/Drink	34	6.3	10	4.3	44	5.7	34	6.6	10	4.5	44	5.9	
Transport	9	1.7	0	0.0	9	1.2	8	1.5	0	0.0	8	1.1	
Serv/Domestic /Service	62	11.4	145	62.5	207	26.7	62	12.0	140	62.8	202	27.3	
Public Serv/Prof	30	5.5	7	3.0	37	4.8	30	5.8	7	3.1	37	5.0	
Ind. Means	9	1.7	23	9.9	32	4.1	9	1.7	23	10.3	32	4.3	
Straw	1	0.2	29	12.5	30	3.9	1	0.2	26	11.7	27	3.6	
Quarry/Mine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
Retail/Distribution	3	0.6	1	0.4	4	0.5	3	0.6	1	0.4	4	0.5	
Misc	8	1.5	0	0.0	8	1.0	8	1.5	0	0.0	8	1.1	
Silk	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
Paper	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	
	544	100.0	232	100.0	776	100.0	518	100.0	223	100.0	741	100.0	
Dependent/No occ.	277	33.7	600	72.1	877	53.1	25	4.7	305	56.2	330	30.8	



**OCCUPATIONAL STRUCTURE : The Watford Districts 1851**

**BATCHWORTH: ALL POPULATION**

**AGE 15 AND ABOVE**

TOTAL:	291		300		591		189		189		378	
TOTAL EMP:	196	67.4	84	28	280	47.4	180	95.2	74	39.2	254	67.2
	MALE		FEMALE		ALL		MALE		FEMALE		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	106	54.1	1	1.2	107	38.2	100	55.6	1	1.4	101	39.8
Textiles	0	0.0	2	2.4	2	0.7	0	0.0	2	2.7	2	0.8
Misc Manufactures	0	0.0	31	36.9	31	11.1	0	0.0	29	39.2	29	11.4
Leather	5	2.6	0	0.0	5	1.8	5	2.8	0	0.0	5	2.0
Building	9	4.6	0	0.0	9	3.2	9	5.0	0	0.0	9	3.5
Metal	4	2.0	0	0.0	4	1.4	4	2.2	0	0.0	4	1.6
Wood	8	4.1	0	0.0	8	2.9	8	4.4	0	0.0	8	3.1
Food/Drink	5	2.6	2	2.4	7	2.5	4	2.2	2	2.7	6	2.4
Transport	5	2.6	1	1.2	6	2.1	5	2.8	1	1.4	6	2.4
Serv/Domestic /Service	15	7.7	33	39.3	48	17.1	14	7.8	28	37.8	42	16.5
PublicServ/Prof	2	1.0	2	2.4	4	1.4	2	1.1	2	2.7	4	1.6
Ind. Means	1	0.5	2	2.4	3	1.1	1	0.6	2	2.7	3	1.2
Straw	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Quarry/Mine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retail/Distribution	5	2.6	0	0.0	5	1.8	5	2.8	0	0.0	5	2.0
Misc	25	12.8	0	0.0	25	8.9	19	10.6	0	0.0	19	7.5
Silk	0	0.0	10	11.9	10	3.6	0	0.0	7	9.5	7	2.8
Paper	6	3.1	0	0.0	6	2.1	4	2.2	0	0.0	4	1.6
	196	100.0	84	100.0	280	100.0	180	100.0	74	100.0	254	100.0
Dependent/No occ.	95	32.6	216	72.0	311	52.6	9	4.8	115	60.8	124	32.8

**BUSHEY: ALL POPULATION**

**AGE 15 AND ABOVE**

TOTAL:	1319		1431		2750		835		901		1736	
	796	60.3	399	27.9	1195	43.5	766	91.7	300	33.3	1066	61.4
	MALE		FEMALE		ALL		MALE		FEMALE		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	137	17.2	3	0.8	140	11.7	129	16.8	3	1.0	132	12.4
Textiles	13	1.6	44	11.0	57	4.8	13	1.7	0	0.0	13	1.2
Misc Manufactures	18	2.3	0	0.0	18	1.5	14	1.8	0	0.0	14	1.3
Leather	24	3.0	5	1.3	29	2.4	24	3.1	5	1.7	29	2.7
Building	75	9.4	2	0.5	77	6.4	74	9.7	2	0.7	76	7.1
Metal	12	1.5	0	0.0	12	1.0	12	1.6	0	0.0	12	1.1
Wood	79	9.9	3	0.8	82	6.9	78	10.2	3	1.0	81	7.6
Food/Drink	47	5.9	47	11.8	94	7.9	47	6.1	12	4.0	59	5.5
Transport	22	2.8	0	0.0	22	1.8	19	2.5	0	0.0	19	1.8
Serv/Domestic /Service	79	9.9	178	44.6	257	21.5	76	9.9	165	55.0	241	22.6
PublicServ/Prof	47	5.9	13	3.3	60	5.0	47	6.1	13	4.3	60	5.6
Ind. Means	23	2.9	62	15.5	85	7.1	23	3.0	62	20.7	85	8.0
Straw	3	0.4	23	5.8	26	2.2	3	0.4	20	6.7	23	2.2
Quarry/Mine	1	0.1	1	0.3	2	0.2	1	0.1	1	0.3	2	0.2
Retail/Distribution	22	2.8	7	1.8	29	2.4	22	2.9	7	2.3	29	2.7
Misc	188	23.6	3	0.8	191	16.0	181	23.6	3	1.0	184	17.3
Silk	6	0.8	7	1.8	13	1.1	3	0.4	3	1.0	6	0.6
Paper	0	0.0	1	0.3	1	0.1	0	0.0	1	0.3	1	0.1
	796	100.0	399	100.0	1195	100.0	766	100.0	300	100.0	1066	100.0
Dependent/No occ.	523	39.7	1067	74.6	1590	57.8	69	8.3	557	61.8	626	36.1

**OCCUPATIONAL STRUCTURE : The Watford Districts 1851****CASHIO: ALL POPULATION****AGE 15 AND ABOVE**

TOTAL EMP:	424		389		813		246		249		495	
	257	60.6	90	23.1	347	42.7	233	94.7	78	31.3	311	62.8
	MALE		FEMALE		ALL		MALE		FEMALE		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	73	28.4	0	0.0	73	21.0	63	27.0	0	0.0	63	20.3
Textiles	1	0.4	21	23.3	22	6.3	1	0.4	16	20.5	17	5.5
Misc Manufactures	1	0.4	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0
Leather	3	1.2	0	0.0	3	0.9	3	1.3	0	0.0	3	1.0
Building	4	1.6	0	0.0	4	1.2	4	1.7	0	0.0	4	1.3
Metal	3	1.2	1	1.1	4	1.2	3	1.3	1	1.3	4	1.3
Wood	21	8.2	0	0.0	21	6.1	21	9.0	0	0.0	21	6.8
Food/Drink	12	4.7	2	2.2	14	4.0	12	5.2	2	2.6	14	4.5
Transport	10	3.9	0	0.0	10	2.9	9	3.9	0	0.0	9	2.9
Serv/Domestic /Service	37	14.4	46	51.1	83	23.9	34	14.6	43	55.1	77	24.8
PublicServ/Prof	6	2.3	0	0.0	6	1.7	6	2.6	0	0.0	6	1.9
Ind. Means	5	1.9	3	3.3	8	2.3	5	2.1	3	3.8	8	2.6
Straw	1	0.4	12	13.3	13	3.7	0	0.0	10	12.8	10	3.2
Quarry/Mine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retail/Distribution	6	2.3	1	1.1	7	2.0	6	2.6	1	1.3	7	2.3
Misc	71	27.6	0	0.0	71	20.5	66	28.3	0	0.0	66	21.2
Silk	2	0.8	4	4.4	6	1.7	0	0.0	2	2.6	2	0.6
Paper	1	0.4	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0
	<b>257</b>	<b>100.0</b>	<b>90</b>	<b>100.0</b>	<b>347</b>	<b>100.0</b>	<b>233</b>	<b>100.0</b>	<b>78</b>	<b>100.0</b>	<b>311</b>	<b>100.0</b>
Dependent/No occ.	167	39.4	299	76.9	466	57.3	13	5.3	171	68.7	184	37.2

**CHORLEY WOOD: ALL POPULATION****AGE 15 AND ABOVE**

TOTAL:	479		459		938		304		281		585	
TOTAL EMP:	311	64.9	157	34.2	468	49.9	280	92.1	137	48.8	417	71.3
	MALE		FEMALE		ALL		MALE		FEMALE		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	203	65.3	1	0.6	204	43.6	180	64.3	1	0.7	181	43.4
Textiles	1	0.3	23	14.6	24	5.1	1	0.4	19	13.9	20	4.8
Misc Manufactures	5	1.6	0	0.0	5	1.1	5	1.8	0	0.0	5	1.2
Leather	5	1.6	0	0.0	5	1.1	5	1.8	0	0.0	5	1.2
Building	9	2.9	0	0.0	9	1.9	9	3.2	0	0.0	9	2.2
Metal	5	1.6	0	0.0	5	1.1	5	1.8	0	0.0	5	1.2
Wood	10	3.2	0	0.0	10	2.1	10	3.6	0	0.0	10	2.4
Food/Drink	9	2.9	1	0.6	10	2.1	9	3.2	1	0.7	10	2.4
Transport	9	2.9	0	0.0	9	1.9	4	1.4	0	0.0	4	1.0
Serv/Domestic /Service	23	7.4	30	19.1	53	11.3	23	8.2	29	21.2	52	12.5
PublicServ/Prof	2	0.6	2	1.3	4	0.9	2	0.7	2	1.5	4	1.0
Ind. Means	3	1.0	13	8.3	16	3.4	3	1.1	13	9.5	16	3.8
Straw	2	0.6	48	30.6	50	10.7	1	0.4	36	26.3	37	8.9
Quarry/Mine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retail/Distribution	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Misc	6	1.9	0	0.0	6	1.3	5	1.8	0	0.0	5	1.2
Silk	2	0.6	1	0.6	3	0.6	2	0.7	1	0.7	3	0.7
Paper	17	5.5	38	24.2	55	11.8	16	5.7	35	25.5	51	12.2
	<b>311</b>	<b>100.0</b>	<b>157</b>	<b>100.0</b>	<b>468</b>	<b>100.0</b>	<b>280</b>	<b>100.0</b>	<b>137</b>	<b>100.0</b>	<b>417</b>	<b>100.0</b>
Dependent/No occ.	159	33.2	298	64.9	457	48.7	15	4.9	140	49.8	155	26.5

## OCCUPATIONAL STRUCTURE : The Watford Districts 1851

## CROXLEY: ALL POPULATION

## AGE 15 AND ABOVE

TOTAL:	311		334		645		192		216		408	
	TOTAL EMP:		85		274		178		75		253	
	60.8		25.4		42.5		92.7		34.7		62	
	MALE		FEMALE		ALL		MALE		FEMALE		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	76	40.2	1	1.2	77	28.1	71	39.9	1	1.3	72	28.5
Textiles	1	0.5	4	4.7	5	1.8	1	0.6	4	5.3	5	2.0
Misc Manufactures	4	2.1	0	0.0	4	1.5	4	2.2	0	0.0	4	1.6
Leather	2	1.1	0	0.0	2	0.7	2	1.1	0	0.0	2	0.8
Building	2	1.1	0	0.0	2	0.7	2	1.1	0	0.0	2	0.8
Metal	3	1.6	0	0.0	3	1.1	3	1.7	0	0.0	3	1.2
Wood	7	3.7	0	0.0	7	2.6	7	3.9	0	0.0	7	2.8
Food/Drink	9	4.8	3	3.5	12	4.4	9	5.1	3	4.0	12	4.7
Transport	5	2.6	0	0.0	5	1.8	5	2.8	0	0.0	5	2.0
Serv/Domestic /Service	20	10.6	46	54.1	66	24.1	20	11.2	45	60.0	65	25.7
PublicServ/Prof	6	3.2	2	2.4	8	2.9	6	3.4	2	2.7	8	3.2
Ind. Means	2	1.1	4	4.7	6	2.2	2	1.1	4	5.3	6	2.4
Straw	0	0.0	2	2.4	2	0.7	0	0.0	2	2.7	2	0.8
Quarry/Mine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retail/Distribution	1	0.5	0	0.0	1	0.4	1	0.6	0	0.0	1	0.4
Misc	36	19.0	0	0.0	36	13.1	36	20.2	0	0.0	36	14.2
Silk	2	1.1	16	18.8	18	6.6	0	0.0	9	12.0	9	3.6
Paper	13	6.9	7	8.2	20	7.3	9	5.1	5	6.7	14	5.5
	189	100.0	85	100.0	274	100.0	178	100.0	75	100.0	253	100.0
Dependent/No occ.	122	39.2	249	74.6	371	57.5	14	7.3	141	65.3	155	38.0

## OXHEY: ALL POPULATION

## AGE 15 AND ABOVE

TOTAL:	350		344		694		209		224		433	
	TOTAL EMP:		113		345		204		100		304	
	66.2857		32.8488		49.7118		97.6077		44.6429		70.2079	
	MALE		FEMALE		ALL		MALE		FEMALE		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	92	39.66	1	0.88	93	26.96	85	41.67	1	1	86	28.3
Textiles	1	0.43	3	2.65	4	1.16		0.00	3	3	3	1.0
Misc Manufactures	4	1.72	7	6.19	11	3.19	3	1.47	7	7	10	3.3
Leather	2	0.86	0	0.00	2	0.58	2	0.98	0	0	2	0.7
Building	2	0.86	0	0.00	2	0.58	2	0.98	0	0	2	0.7
Metal	1	0.43	0	0.00	1	0.29	1	0.49	0	0	1	0.3
Wood	9	3.88	0	0.00	9	2.61	9	4.41	0	0	9	3.0
Food/Drink	5	2.16	1	0.88	6	1.74	4	1.96	1	1	5	1.6
Transport	13	5.60	0	0.00	13	3.77	12	5.88	0	0	12	3.9
Serv/Domestic /Service	17	7.33	41	36.28	58	16.81	17	8.33	39	39	56	18.4
PublicServ/Prof	2	0.86	0	0.00	2	0.58	1	0.49	0	0	1	0.3
Ind. Means	4	1.72	10	8.85	14	4.06	4	1.96	10	10	14	4.6
Straw	0	0.00	1	0.88	1	0.29	0	0.00	0	0	0	0.0
Quarry/Mine	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	0.0
Retail/Distribution	1	0.43	0	0.00	1	0.29	1	0.49	0	0	1	0.3
Misc	20	8.62	0	0.00	20	5.80	19	9.31	0	0	19	6.3
Silk	38	16.38	39	34.51	77	22.32	26	12.75	29	29	55	18.1
Paper	21	9.05	10	8.85	31	8.99	18	8.82	10	10	28	9.2
	232	100	113	100.00	345	100.00	204	100.00	100	100	304	100.0
Dependent/No occ.	118	33.71	231	67.15	349	101.159	5	2.39	124	55.3571	129	42.4

## OCCUPATIONAL STRUCTURE : The Watford Districts 1851

## LEAVESDEN: ALL POPULATION

## AGE 15 AND ABOVE

	TOTAL:		581		617		1198		357		368		725	
	TOTAL EMP:		365	62.8	176	28.5	541	45.2	343	96.1	165	44.8	508	70.1
	MALE		FEMALE		ALL		MALE		FEMALE		ALL			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	138	37.8	2	1.1	140	25.9	122	35.6	2	1.2	124	24.4		
Textiles	4	1.1	40	22.7	44	8.1	4	1.2	34	20.6	38	7.5		
Misc Manufactures	2	0.5	0	0.0	2	0.4	2	0.6	0	0.0	2	0.4		
Leather	6	1.6	1	0.6	7	1.3	6	1.7	1	0.6	7	1.4		
Building	12	3.3	0	0.0	12	2.2	12	3.5	0	0.0	12	2.4		
Metal	5	1.4	1	0.6	6	1.1	5	1.5	1	0.6	6	1.2		
Wood	36	9.9	0	0.0	36	6.7	35	10.2	0	0.0	35	6.9		
Food/Drink	20	5.5	3	1.7	23	4.3	19	5.5	2	1.2	21	4.1		
Transport	33	9.0	0	0.0	33	6.1	33	9.6	0	0.0	33	6.5		
Serv/Domestic /Service	30	8.2	92	52.3	122	22.6	29	8.5	90	54.5	119	23.4		
PublicServ/Prof	15	4.1	6	3.4	21	3.9	15	4.4	6	3.6	21	4.1		
Ind. Means	4	1.1	10	5.7	14	2.6	4	1.2	10	6.1	14	2.8		
Straw	0	0.0	18	10.2	18	3.3	0	0.0	18	10.9	18	3.5		
Quarry/Mine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0		
Retail/Distribution	10	2.7	0	0.0	10	1.8	10	2.9	0	0.0	10	2.0		
Misc	43	11.8	0	0.0	43	7.9	42	12.2	0	0.0	42	8.3		
Silk	0	0.0	3	1.7	3	0.6	0	0.0	1	0.6	1	0.2		
Paper	7	1.9	0	0.0	7	1.3	5	1.5	0	0.0	5	1.0		
	<b>365</b>	<b>100.0</b>	<b>176</b>	<b>100.0</b>	<b>541</b>	<b>100.0</b>	<b>343</b>	<b>100.0</b>	<b>165</b>	<b>100.0</b>	<b>508</b>	<b>100.0</b>		
Dependent/No occ.	213	36.7	440	71.3	653	54.5	11	3.1	202	54.9	213	29.4		

## MILL END: ALL POPULATION

## AGE 15 AND ABOVE

	TOTAL:		296		338		634		180		199		379	
	TOTAL EMP:		169	57.1	51	15.1	220	34.7003	160	88.9	51	25.6	211	55.7
	MALE		FEMALE		ALL		MALE		FEMALE		ALL			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	79	46.7	0	0.0	79	35.9	74	46.3	0	0.0	74	35.1		
Textiles	0	0.0	4	7.8	4	1.8	0	0.0	4	7.8	4	1.9		
Misc Manufactures	0	0.0	1	2.0	1	0.5	0	0.0	1	2.0	1	0.5		
Leather	14	8.3	0	0.0	14	6.4	14	8.8	0	0.0	14	6.6		
Building	10	5.9	0	0.0	10	4.5	10	6.3	0	0.0	10	4.7		
Metal	3	1.8	0	0.0	3	1.4	3	1.9	0	0.0	3	1.4		
Wood	16	9.5	0	0.0	16	7.3	16	10.0	0	0.0	16	7.6		
Food/Drink	9	5.3	0	0.0	9	4.1	8	5.0	0	0.0	8	3.8		
Transport	5	3.0	0	0.0	5	2.3	4	2.5	0	0.0	4	1.9		
Serv/Domestic /Service	13	7.7	20	39.2	33	15.0	12	7.5	20	39.2	32	15.2		
PublicServ/Prof	5	3.0	6	11.8	11	5.0	5	3.1	6	11.8	11	5.2		
Ind. Means	4	2.4	11	21.6	15	6.8	4	2.5	11	21.6	15	7.1		
Straw	0	0.0	5	9.8	5	2.3	0	0.0	5	9.8	5	2.4		
Quarry/Mine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0		
Retail/Distribution	3	1.8	0	0.0	3	1.4	3	1.9	0	0.0	3	1.4		
Misc	4	2.4	0	0.0	4	1.8	3	1.9	0	0.0	3	1.4		
Silk	0	0.0	4	7.8	4	1.8	0	0.0	4	7.8	4	1.9		
Paper	4	2.4	0	0.0	4	1.8	4	2.5	0	0.0	4	1.9		
	<b>169</b>	<b>100.0</b>	<b>51</b>	<b>100.0</b>	<b>220</b>	<b>100.0</b>	<b>160</b>	<b>100.0</b>	<b>51</b>	<b>100.0</b>	<b>211</b>	<b>100.0</b>		
Dependent/No occ.	127	42.9	287	84.9	414	65.3	20	11.1	148	74.4	168	44.3		

## OCCUPATIONAL STRUCTURE : The Watford Districts 1851

## RICKMANSWORTH (TOWN): ALL POPULATION

## AGE 15 AND ABOVE

TOTAL:	749		780		1529		468		507		975	
	465	62.1	247	31.7	712	46.6	431	92.1	219	43.2	650	66.7
	MALE		FEMALE		ALL		MALE		FEMALE		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	68	14.6	0	0.0	68	9.6	62	14.4	0	0.0	62	9.5
Textiles	22	4.7	29	11.7	51	7.2	22	5.1	28	12.8	50	7.7
Misc Manufactures	20	4.3	19	7.7	39	5.5	19	4.4	18	8.2	37	5.7
Leather	9	1.9	2	0.8	11	1.5	9	2.1	2	0.9	11	1.7
Building	36	7.7	2	0.8	38	5.3	36	8.4	2	0.9	38	5.8
Metal	20	4.3	2	0.8	22	3.1	20	4.6	2	0.9	22	3.4
Wood	34	7.3	1	0.4	35	4.9	34	7.9	1	0.5	35	5.4
Food/Drink	80	17.2	2	0.8	82	11.5	77	17.9	2	0.9	79	12.2
Transport	19	4.1	0	0.0	19	2.7	17	3.9	0	0.0	17	2.6
Serv/Domestic /Service	35	7.5	92	37.2	127	17.8	33	7.7	87	39.7	120	18.5
PublicServ/Prof	20	4.3	11	4.5	31	4.4	20	4.6	11	5.0	31	4.8
Ind. Means	6	1.3	19	7.7	25	3.5	6	1.4	19	8.7	25	3.8
Straw	0	0.0	7	2.8	7	1.0	0	0.0	7	3.2	7	1.1
Quarry/Mine	1	0.2	0	0.0	1	0.1	1	0.2	0	0.0	1	0.2
Retail/Distribution	10	2.2	3	1.2	13	1.8	9	2.1	3	1.4	12	1.8
Misc	47	10.1	3	1.2	50	7.0	45	10.4	3	1.4	48	7.4
Silk	20	4.3	37	15.0	57	8.0	8	1.9	18	8.2	26	4.0
Paper	18	3.9	18	7.3	36	5.1	13	3.0	16	7.3	29	4.5
	465	100.0	247	100.0	712	100.0	431	100.0	219	100.0	650	100.0
Dependent/No occ.	275	36.7	533	68.3	808	52.8	17	3.6	288	56.8	305	31.3

## SARRATT: ALL POPULATION

## AGE 15 AND ABOVE

TOTAL:	295		318		613		186		187		373	
	199	67.5	134	42.1	333	54.3	178	95.7	98	52.4	276	74.0
	MALE		FEMALE		ALL		MALE		FEMALE		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	119	59.8	0	0.0	119	35.7	107	60.1	0	0.0	107	38.8
Textiles	12	6.0	75	56.0	87	26.1	4	2.2	47	48.0	51	18.5
Misc Manufactures	2	1.0	0	0.0	2	0.6	2	1.1	0	0.0	2	0.7
Leather	4	2.0	0	0.0	4	1.2	4	2.2	0	0.0	4	1.4
Building	4	2.0	0	0.0	4	1.2	4	2.2	0	0.0	4	1.4
Metal	3	1.5	0	0.0	3	0.9	3	1.7	0	0.0	3	1.1
Wood	9	4.5	0	0.0	9	2.7	9	5.1	0	0.0	9	3.3
Food/Drink	12	6.0	0	0.0	12	3.6	12	6.7	0	0.0	12	4.3
Transport	3	1.5	0	0.0	3	0.9	3	1.7	0	0.0	3	1.1
Serv/Domestic /Service	11	5.5	24	17.9	35	10.5	11	6.2	24	24.5	35	12.7
PublicServ/Prof	3	1.5	0	0.0	3	0.9	3	1.7	0	0.0	3	1.1
Ind. Means	1	0.5	5	3.7	6	1.8	1	0.6	5	5.1	6	2.2
Straw	6	3.0	25	18.7	31	9.3	5	2.8	18	18.4	23	8.3
Quarry/Mine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retail/Distribution	2	1.0	0	0.0	2	0.6	2	1.1	0	0.0	2	0.7
Misc	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Silk	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Paper	8	4.0	5	3.7	13	3.9	8	4.5	4	4.1	12	4.3
	199	100.0	134	100.0	333	100.0	178	100.0	98	100.0	276	100.0
Dependent/No occ.	96	32.5	184	57.9	280	45.7	8	4.3	89	47.6	97	26.0

### OCCUPATIONAL STRUCTURE : The Watford Districts 1851

#### WATFORD (TOWN): ALL POPULATION

TOTAL:	1720		1845		3565		1107		1265		2372	
	1133	65.9	653	35.4	1786	50.1	1051	94.9	599	47.4	1650	69.6
	MALE		FEMALE		ALL		MALE		FEMALE		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	122	10.8		0.0	122	6.8	118	11.2		0.0	118	7.2
Textiles	66	5.8	118	18.1	184	10.3	62	5.9	115	19.2	177	10.7
Misc Manufactures	51	4.5	2	0.3	53	3.0	49	4.7	2	0.3	51	3.1
Leather	67	5.9	18	2.8	85	4.8	61	5.8	17	2.8	78	4.7
Building	72	6.4	0	0.0	72	4.0	72	6.9	0	0.0	72	4.4
Metal	44	3.9	0	0.0	44	2.5	43	4.1	0	0.0	43	2.6
Wood	72	6.4	1	0.2	73	4.1	71	6.8	1	0.2	72	4.4
Food/Drink	173	15.3	20	3.1	193	10.8	168	16.0	20	3.3	188	11.4
Transport	43	3.8	2	0.3	45	2.5	31	2.9	1	0.2	32	1.9
Serv/Domestic /Service	90	7.9	269	41.2	359	20.1	88	8.4	257	42.9	345	20.9
PublicServ/Prof	64	5.6	26	4.0	90	5.0	61	5.8	26	4.3	87	5.3
Ind. Means	14	1.2	38	5.8	52	2.9	14	1.3	38	6.3	52	3.2
Straw	0	0.0	47	7.2	47	2.6	0	0.0	46	7.7	46	2.8
Quarry/Mine	11	1.0	1	0.2	12	0.7	11	1.0	1	0.2	12	0.7
Retail/Distribution	40	3.5	14	2.1	54	3.0	39	3.7	14	2.3	53	3.2
Misc	137	12.1	4	0.6	141	7.9	134	12.7	4	0.7	138	8.4
Silk	52	4.6	77	11.8	129	7.2	17	1.6	41	6.8	58	3.5
Paper	15	1.3	16	2.5	31	1.7	12	1.1	16	2.7	28	1.7
	1133	100.0	653	100.0	1786	100.0	1051	100.0	599	100.0	1650	100.0
Dependent/No occ.	587	34.1	1192	64.6	1779	49.9	56	5.1	666	52.6	722	30.4

#### WEST HYDE: ALL POPULATION

TOTAL:	259		228		487		162		146		308	
	170	65.6	45	19.7	215	44.1	152	93.8	43	29.5	195	63.3
	MALE		FEMALE		ALL		MALE		FEMALE		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	116	68.2	5	11.1	121	56.3	102	67.1	5	11.6	107	54.9
Textiles	0	0.0	3	6.7	3	1.4	0	0.0	3	7.0	3	1.5
Misc Manufactures	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Leather	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Building	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Metal	10	5.9	0	0.0	10	4.7	10	6.6	0	0.0	10	5.1
Wood	4	2.4	0	0.0	4	1.9	4	2.6	0	0.0	4	2.1
Food/Drink	9	5.3	1	2.2	10	4.7	9	5.9	1	2.3	10	5.1
Transport	4	2.4	0	0.0	4	1.9	2	1.3	0	0.0	2	1.0
Serv/Domestic /Service	20	11.8	20	44.4	40	18.6	18	11.8	20	46.5	38	19.5
PublicServ/Prof	3	1.8	3	6.7	6	2.8	3	2.0	2	4.7	5	2.6
Ind. Means	3	1.8	6	13.3	9	4.2	3	2.0	6	14.0	9	4.6
Straw	0	0.0	7	15.6	7	3.3	0	0.0	6	14.0	6	3.1
Quarry/Mine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retail/Distribution	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Misc	1	0.6	0	0.0	1	0.5	1	0.7	0	0.0	1	0.5
Silk	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Paper	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	170	100.0	45	100.0	215	100.0	152	100.0	43	100.0	195	100.0
Dependent/No occ.	89	34.4	183	80.3	272	55.9	10	6.2	103	70.5	113	36.7

## OCCUPATIONAL STRUCTURE : The Watford Districts 1851

EMPLOYMENT IN ALL WATFORD SRD. 1851

: ALL POPULATION

	ALL M		ALL F		18486		AGE 15 AND ABOVE				11715							
	No.	%	No.	%	No.	%	M	F	No.	%	No.	%						
TOTAL:	9072		9414		18486		5692	6023			11715							
TOTAL EMP:	5786	63.8	2833	30.1	8619	46.6	5376	94	2495	41.4	7871	67.2						
	MALE			FEMALE			ALL			MALE			FEMALE			ALL		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	1961	33.9	20	0.7	1981	23.0	1799	33.5	20	0.8	1819	23.1						
Textiles	140	2.4	436	15.4	576	6.7	125	2.3	336	13.5	461	5.9						
Misc Manufactures	116	2.0	60	2.1	176	2.0	106	2.0	57	2.3	163	2.1						
Leather	166	2.9	30	1.1	196	2.3	160	3.0	29	1.2	189	2.4						
Building	292	5.0	4	0.1	296	3.4	291	5.4	4	0.2	295	3.7						
Metal	147	2.5	4	0.1	151	1.8	146	2.7	4	0.2	150	1.9						
Wood	358	6.2	5	0.2	363	4.2	354	6.6	5	0.2	359	4.6						
Food/Drink	465	8.0	97	3.4	562	6.5	453	8.4	56	2.2	509	6.5						
Transport	208	3.6	3	0.1	211	2.4	176	3.3	2	0.1	178	2.3						
Serv/Domestic /Service	527	9.1	1164	41.1	1691	19.6	509	9.5	1109	44.4	1618	20.6						
PublicServ/Prof	218	3.8	88	3.1	306	3.6	214	4.0	87	3.5	301	3.8						
Ind. Means	85	1.5	222	7.8	307	3.6	85	1.6	222	8.9	307	3.9						
Straw	15	0.3	327	11.5	342	4.0	11	0.2	284	11.4	295	3.7						
Quarry/Mine	13	0.2	2	0.1	15	0.2	13	0.2	2	0.1	15	0.2						
Retail/Distribution	112	1.9	26	0.9	138	1.6	110	2.0	26	1.0	136	1.7						
Misc	670	11.6	10	0.4	680	7.9	631	11.7	10	0.4	641	8.1						
Silk	122	2.1	199	7.0	321	3.7	56	1.0	115	4.6	171	2.2						
Paper	171	3.0	136	4.8	307	3.6	137	2.5	127	5.1	264	3.4						
	5786	100.0	2833	100.0	8619	100.0	5376	100.0	2495	100.0	7871	100.0						
Dependent/No occ.	3265	36.0	6611	70.2	9876	53.4	299	5.3	3459	57.4	3758	32.1						

Source: CEBs 1851 Hertfordshire

**Table A.5. Population and Marital Status in the Watford Districts 1851**

PLACE	Male		Female		Total
	No.	%	No.	%	No.
Abbots Langley	1177	49.54	1199	50.46	2376
Aldenham	821	49.67	832	50.33	1653
Batchworth	291	49.24	300	50.76	591
Bushey	1319	47.96	1431	52.04	2750
Cashio	424	52.15	389	47.85	813
Chorley Wood	479	51.07	459	48.93	938
Croxley	311	48.22	334	51.78	645
Leavesden	581	48.50	617	51.50	1198
Mill End	296	46.69	338	53.31	634
Oxhey	350	50.43	344	49.57	694
Rickmansworth	749	48.99	780	51.01	1529
Sarratt	295	48.12	318	51.88	613
Watford	1720	48.25	1845	51.75	3565
WH	156	60.94	100	39.06	256
West Hyde	259	53.18	228	46.82	487
<b>Total</b>	<b>9228</b>	<b>49.24</b>	<b>9514</b>	<b>50.76</b>	<b>18742</b>
Mills rural Norm		51.10		48.90	18490

PLACE	POPULATION 15 yrs and above					Never Married Aged 15 yrs and above					
	M		F		All	M		F		All	
	No.	%	No.	%	No.	No.	%	No.	%	No.	
Abbots Langley	729	49.36	748	50.64	1477	259	35.5	245	32.8	504	34.1
Aldenham	543	50.70	528	49.30	1071	224	41.3	184	34.8	408	38.1
Batchworth	189	50.00	189	50.00	378	64	33.9	55	29.1	119	31.5
Bushey	835	48.10	901	51.90	1736	334	40.0	327	36.3	661	38.1
Cashio	246	49.70	249	50.30	495	88	35.8	87	34.9	175	35.4
Chorley Wood	304	51.97	281	48.03	585	100	32.9	84	29.9	184	31.5
Croxley	192	47.06	216	52.94	408	76	39.6	91	42.1	167	40.9
Leavesden	357	49.24	368	50.76	725	142	39.8	127	34.5	269	37.1
Mill End	180	47.49	199	52.51	379	61	33.9	63	31.7	124	32.7
Oxhey	209	48.27	224	51.73	433	76	36.4	83	37.1	159	36.7
Rickmansworth	468	48.00	507	52.00	975	158	33.8	161	31.8	319	32.7
Sarratt	186	49.87	187	50.13	373	61	32.8	64	34.2	125	33.5
Watford	1107	46.67	1265	53.33	2372	459	41.5	517	40.9	976	41.1
WH	113	64.94	61	35.06	174						
West Hyde	162	52.60	146	47.40	308	57	35.2	36	24.7	93	30.2
	5820		6069		11889						



	Never Married						Married					
	M		F		ALL		M		F		ALL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Abbots Langley	707	60.1	696	58.0	1403	59.0	401	34.1	391	32.6	792	33.3
Aldenham	502	61.1	488	58.7	990	59.9	279	34.0	275	33.1	554	33.5
Batchworth	170	58.4	166	55.3	336	56.9	103	35.4	102	34.0	205	34.7
Bushey	818	62.0	857	59.9	1675	60.9	438	33.2	429	30.0	867	31.5
Cashio	266	62.7	227	58.4	493	60.6	143	33.7	142	36.5	285	35.1
Chorley Wood	275	57.4	262	57.1	537	57.2	170	35.5	169	36.8	339	36.1
Croxley	194	62.4	209	62.6	403	62.5	103	33.1	103	30.8	206	31.9
Leavesden	366	63.0	376	60.9	742	61.9	202	34.8	209	33.9	411	34.3
Mill End	177	59.8	202	59.8	379	59.8	102	34.5	104	30.8	206	32.5
Oxhey	217	62.0	203	59.0	420	60.5	123	35.1	120	34.9	243	35.0
Rickmansworth	439	58.6	434	55.6	873	57.1	256	34.2	258	33.1	514	33.6
Sarratt	170	57.6	195	61.3	365	59.5	103	34.9	95	29.9	198	32.3
Watford	1073	62.4	1097	59.5	2170	60.9	571	33.2	570	30.9	1141	32.0
WH	60	38.5	25	25.0	85	33.2	22	14.1	12	12.0	34	13.3
West Hyde	154	59.5	118	51.8	272	55.9	94	36.3	88	38.6	182	37.4
<b>Total</b>	<b>5588</b>	<b>60.6</b>	<b>5555</b>	<b>58.4</b>	<b>11143</b>	<b>59.5</b>	<b>3110</b>	<b>33.7</b>	<b>3067</b>	<b>32.2</b>	<b>6177</b>	<b>33.0</b>
<b>Mills Rural Norm</b>						<b>59.8</b>						<b>35</b>

	Widowed					
	M		F		ALL	
	No.	%	No.	%	No.	%
Abbots Langley	32	2.7	85	7.1	117	4.9
Aldenham	33	4.0	64	7.7	97	5.9
Batchworth	18	6.2	25	8.3	43	7.3
Bushey	52	3.9	135	9.4	187	6.8
Cashio	11	2.6	18	4.6	29	3.6
Chorley Wood	22	4.6	23	5.0	45	4.8
Croxley	9	2.9	16	4.8	25	3.9
Leavesden	13	2.2	31	5.0	44	3.7
Mill End	11	3.7	24	7.1	35	5.5
Oxhey	10	2.9	21	6.1	31	4.5
Rickmansworth	35	4.7	74	9.5	109	7.1
Sarratt	15	5.1	22	6.9	37	6.0
Watford	72	4.2	175	9.5	247	6.9
WH	30	19.2	24	24.0	54	21.1
West Hyde	4	1.5	19	8.3	23	4.7
<b>Total</b>	<b>367</b>	<b>4.0</b>	<b>756</b>	<b>7.9</b>	<b>1123</b>	<b>6.0</b>
<b>Mills Rural Norm</b>						<b>5.2</b>

Source: CEBs 1851 Hertfordshire

**Table A.6 Age Structure of the Watford Parishes 1851**  
(including Watford Union Workhouse)

	AGE GROUPS												T Pop
	0-14	15-29	30-44	45-59	60-74	75+	%		No.		%		
Abbots Langley	899	613	418	280	139	27	37.8	17.6	11.8	5.9	1.1	2376	
Aldenham	582	419	313	195	116	28	35.2	18.9	11.8	7.0	1.7	1653	
Batchworth	213	151	114	59	48	6	36.0	19.3	10.0	8.1	1.0	591	
Bushey	1014	684	486	308	209	49	36.9	17.7	11.2	7.6	1.8	2750	
Cashio	318	202	149	92	42	10	39.1	18.3	11.3	5.2	1.2	813	
Chorley Wood	353	228	157	127	62	11	37.6	16.7	13.5	6.6	1.2	938	
Croxley	236	169	127	72	33	7	36.6	19.7	11.2	5.1	1.1	644	
Leavesden	473	291	253	118	51	12	39.5	21.1	9.8	4.3	1.0	1198	
Mill End	255	139	105	82	44	9	40.2	16.6	12.9	6.9	1.4	634	
Oxhey	161	174	124	94	33	8	23.2	17.9	13.6	4.8	1.2	693	
Rickmansworth	554	364	304	169	108	29	36.3	19.9	11.1	7.1	1.9	1528	
Sarratt	240	144	104	70	48	7	39.2	17.0	11.4	7.8	1.1	613	
Watford+Workhouse	1276	1011	684	472	291	90	33.4	17.9	12.3	7.6	2.4	3824	
West Hyde	179	134	74	65	27	8	36.8	15.2	13.3	5.5	1.6	487	
<b>TOTAL</b>	<b>6753</b>	<b>4723</b>	<b>3412</b>	<b>2203</b>	<b>1251</b>	<b>301</b>	<b>36.0</b>	<b>18.2</b>	<b>11.8</b>	<b>6.7</b>	<b>1.6</b>	<b>18742</b>	
Mills Rural Norm							36.6	17.2	11.8	6.9	1.7	18490	
Watford	1194	972	654	452	236	60	33.5	18.3	12.7	6.6	1.7	3568	
Workhouse	82	39	30	20	55	30	32	11.7	7.8	21.5	11.7	256	
Watford+Workhouse	1276	1011	684	472	291	90	33.4	17.9	12.3	7.6	2.4	3824	

Source: CEBs 1851 Hertfordshire

**Table A.7 The Whipple Index: Watford Districts 1851**

Age Groups : 23-62, with working data.

**WHIPPLE INDEX**

<b>PLACE</b>	<b>MALE</b>	<b>FEMALE</b>	<b>OVERALL</b>
Abbotts Langley	128.90	117.30	122.96
Aldenham	124.29	133.78	129.17
Batchworth	123.93	118.85	121.34
Bushey	119.86	128.14	127.95
Cashio	98.27	133.14	115.50
Chorley Wood	82.91	123.08	115.48
Croxley	160.00	141.38	150.00
Leavesden	134.92	122.61	128.65
Mill End	89.74	86.47	88.00
Oxhey	144.83	146.88	145.90
Rickmansworth	130.65	111.11	120.40
Sarratt	112.00	144.63	128.05
Watford Town	126.48	131.42	129.07
West Hyde	91.35	112.90	101.52

**Working Data :**

<b>A</b>		<b>B</b>		<b>Bx5</b>	
No of persons aged 23-62 inc.		No 23-62 ages ending 0 or 5.			
<b>M</b>	<b>F</b>	<b>M</b>	<b>F</b>	<b>M</b>	<b>F</b>
481	503	124	118	620	590
350	370	87	99	435	495
117	122	29	29	145	145
584	597	140	153	700	765
173	169	34	45	170	225
199	195	33	48	165	240
125	145	40	41	200	205
252	261	68	64	340	320
117	133	21	23	105	115
145	160	42	47	210	235
310	342	81	76	405	380
125	121	28	35	140	175
759	837	192	220	960	1100
104	93	19	21	95	105

Source: CEBs 1851

**Table A.8 South-West Hertfordshire 1851:**  
**Persons over 65yrs recorded as still in employment.**

Place	Males			Working		Females			plait		dom serv		silk	
	All	Work	%	in Ag.	All	W	%							
Abbots Langley	48	39	81.3	22	45.8	52	8	15.4	3	5.8	1	1.9	0.0	
Aldenham	49	30	61.2	22	44.9	43	6	14.0	0	0.0	4	9.3	0.0	
Batchworth	11	9	81.8	5	45.5	16	3	18.8	0	0.0	0	0.0	0.0	
Bushey	76	46	60.5	11	14.5	97	18	18.6	0	0.0	10	10.3	0.0	
Cashio	19	15	78.9	1	5.3	20	0	0.0	0	0.0	0	0.0	0.0	
Chorley Wood	31	24	77.4	17	54.8	17	2	11.8	0	0.0	1	5.9	0.0	
Croxley	12	9	75.0	5	41.7	14	3	21.4	0	0.0	3	21.4	0.0	
Leavesden	21	15	71.4	6	28.6	21	6	28.6	1	4.8	1	4.8	0.0	
Mill End	18	8	44.4	3	16.7	19	1	5.3	0	0.0	4	21.1	0.0	
Oxhey	11	10	90.9	6	54.5	14	3	21.4	0	0.0	0	0.0	2	14.3
Rickmansworth	38	27	71.1	4	10.5	48	9	18.8	0	0.0	4	8.3	0.0	
Sarratt	20	20	100.0	10	50.0	18	5	27.8	1	5.6	1	5.6	0.0	
Watford Town	75	57	76.0	8	10.7	113	26	23.0	0	0.0	13	11.5	0.0	
West Hyde	11	4	36.4	4	36.4	17	1	5.9	0	0.0	0	0.0	0.0	
<b>Total</b>	<b>440</b>	<b>313</b>	<b>71.1</b>	<b>124</b>	<b>28.2</b>	<b>509</b>	<b>91</b>	<b>17.9</b>	<b>5</b>	<b>1.0</b>	<b>42</b>	<b>8.3</b>	<b>2</b>	<b>0.4</b>
Tring 7a-7i	88	39	44.3											
Kings Langley	27	18	66.7											

**ST ALBANS DISTRICT 1851**

	Males			Working		Females			plait		dom serv	
	All	Work	%	in Ag.	All	W	%	%	%			
Sandridge	12	10	83.3	4	33.3	12	4	33.3	4	33.3	0	0.0
Harpenden	45	39	86.7	25	55.6	55	34	61.8	22	40.0	7	12.7
Redbourn	51	42	82.4	23	45.1	57	24	42.1	14	24.6	5	8.8
Wheathampstead	22	20	90.9	14	63.6	21	12	57.1	9	42.9	2	9.5
St Albans 1a-c	57	31	54.4			107	20	18.7	2	1.9	10	9.3
St Albans 4a-c	125	44	35.2			79	25	31.6	1	1.3	10	12.7
St Albans 5a-c	29	19	65.5			45	13	28.9	0.0	0.0	5	11.1
St Albans 6a-c	11	11	100.0			6	2	33.3	1	16.7	1	16.7
Sleap/Tytenhanger	27	25	92.6			23	6	26.1	0.0	0.0	4	17.4
	<b>379</b>	<b>241</b>	<b>63.6</b>			<b>405</b>	<b>140</b>	<b>34.6</b>	<b>53</b>	<b>13.1</b>	<b>44</b>	<b>10.9</b>

Source: CEBs 1851 Hertfordshire

## APPENDIX VI

### The Poor and the Parish

Watford Vestry Minutes

HRO D/P117 8/1

12<sup>th</sup> January 1775

It is Ordered, pursuant to the agreement as enter'd in the Minutes of the last Vestry, to let the poors Labour to that Person all things considered whose Terms shall appear to be most to the advantage of the Parish, and at this Vestry Mr Peter Paumier agrees that in Case he should happen to be the best Bidder for the Labour of the Poor that he will send a tilted last waggon or machine to fetch them from the Workhouse every Morning and send them home again to the Workhouse every Night at that Season of the Year which is included between the 29<sup>th</sup> of September, and the 25<sup>th</sup> of March and at such times as the Floods render the meadow unpassable without being wetshod which is agreed upon as putting him upon an equal Footing with Mr Parry and Mr Crutchley the only Persons besides himself who appears at this Vestry to bid for the said Poors Labour, And the said Poors Labour having now been put up to the best bidder, and Mr Edw<sup>d</sup> Crutchley having bid two shillings and sixpence per week, for each of the Poor from the Age of six to the Age of sixty years excepting all the Males exceeding the Age of eighteen, and eleven of the Women at the Choice of the Overseers to do the Business of the House ~ and to prevent disputes the Overseers to be judges of all that shall be sent to the Shop of the said Mr Crutchley, and to work the usual Hours of the Trade and no abatement to be made for Loss of Time, but the Contractor to have Liberty to keep any of the Poor at Night for the Loss of Time in the Day thro' non attendance, the said Poor to be deliver'd at the said Shop as heretofore at the usual hours of Working by any Person who shall have the Orders of the Overseers for that purpose, and the said Mr Crutchley being the best bidder, it agreed that he shall have the Labour of the said Poor, paying weekly the Sum of two shillings and six pence according to this agreement, for one year to commence from the second Day of February now next ensuing.

## HRO D/P117 8/2 Watford Vestry Minutes.

9 Feb.1802

At a Vestry holden pursuant to Notice given in Church on Sunday last, to take into consideration the Case of the Contractor for the Poor on Account of the Children lately sent into the Poor House in Consequence of the Death of Mr Watson.

And to consider of the steps to be taken in order to save the Parish of the Burthen and also a Letter lately wrote by Ann Harding of this Town to the Overseers of Enfield respecting a Child brought ill into the Poor House from Mr Watsons.

At this Vestry the Parish Officers brought forward several Proposals of taking as Apprentice the Poor Children who have become chargeable on this Parish by the Death of Mr Thomas Watson.

It is ordered that the Parish Officers shall notice such Letters in manner following

To the Letter from Messrs Wilts and Fisher that their Proposals are not agreed to. ~that in consequence of the Letter from St Leonards Shoreditch Letters shall be written to the several Persons therein mentioned as willing to take Children as Apprentices ~ to know on what Terms they will take them ~ That as to the Children concerning whom no application has been made to take them; that advertisements shall be inserted in 3 or 4 of the News Papers of the Manufacturing Countys offering to put forth the Children as Apprentices.

That for the purpose of considering the Applications that may be made in consequence of such Advertisements a Vestry shall be holden this Day Month.

and the future consideration of Mrs Harding's Letter is postponed to the same Day.

And also so much of the case as relates to the Contractor.

16 March 1802.

~ Ordered that the Officers of the Parish with the consent of the Magistrates are empower'd to contract with any Manufacturer for the placing out the Children lately remov'd into this Parish as Apprentices with a Premium not exceeding the Sum of Four Pounds pr Head.

3 August 1802

~ to take into consideration the Acc't delivered by the Contractor for the Poor for the Maintenance and Clothing of the Children removed into the House in consequence of the Death of Mr Watson.

Ordered that the Contractor be allow'd the Sum of One Hundred Pounds to be paid by the Overseers out of the Poor Rates as a satisfaction for the Maintenance and Clothing of the Children from the time they came in to the Poor House to the time the present contract expires.

7 September 1802

Ordered ~

And that an allowance of Fifty Pounds in addition to the Contract be granted him for the extra expense of the Children lately removed into the House by the Death of Mr Watson.

**List of Children sent to the Watford silk mill of Thomas Watson Esq.**

**26 May - 2 November 1796.**

**CWA F4310 St Martin in the Fields: Apprenticeship Register**

**MAY 26<sup>th</sup>**

John Barker	14
John Murry	11
William Neale	11
William Richardson	11
William Carpenter	10
Henry Peters	10
John Keill	8
William Haggett	10
Mary Haswell	9
Sophia Parker	11
Susannah Jones	9
Ann Greory	9
Meg Hawkins	8
Catherine Gunter	11
Ann Hudson	10
Frances Spriggs	11
John Burke	14

**JUNE 22<sup>nd</sup>**

Maria Davis	14
Mary S[tur]t Arnold	8

**AUGUST 16<sup>th</sup>**

Mary Ann Bigari	14
Elizabeth Dixon	15

**SEPTEMBER 6<sup>th</sup>**

Mary Latham	9
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**NOVEMBER 2<sup>nd</sup>**

Jane Murphy	14
Ann Amelia Blog	11
Rebecca Smith	11



**Correspondence of Charles Woollam, proprietor of the Abbey Mills at St Albans.**

CWA E3338 St Margarets, Westminster: Letters to Vestry.

**Letter 1.**

28<sup>th</sup> January 1804

Mr Stevenson,  
Vestry Clerk  
St Margarets, Westminster.

Sir

I am going to be under the necessity of returning one of the Children (Mary Berry) whom we received from St Margarets Westminster. The Poor Child has been afflicted [now?] since her birth with a Complaint in her head, which I should call a gathering which is perpetually breaking out from which the discharge is very great. We have done everything in our power for her but in vain and I am apprehensive nothing can be done till she gets older and then as I am informed it may perhaps cease. The Father has been twice to see her and informs me she was not born in Wedlock; her Mother has also been, who is a vagabond in the streets. The Father says that the Mother when with Child with this Girl, contracted a Venereal complaint and this accounts for the malady. I hope you will excuse my being thus particular, but I am so with a wish of showing you that the complaint is a just one for I was informed that you never sent out Children until they were Sound but that they were extremely particular in sending out only those who were proper.

It is the Child who is truly a patient sufferer we never heard a complaint ~ less just before the disease arrives at the crisis and after the discharge she is perfectly easy but so excessively offensive as even to be unwholesome.

I shall await your reply and shall then send her back by the St Albans Coach to our house here and from thence send a proper person with her to Westminster; so perhaps you would like to send a person down for her; she conducts herself very well and attends to her business only for this unfortunate malady.

I remain Sir  
Your most obedient Servant  
Charles Woollam

39 Throgmorton St  
28 Jan<sup>y</sup> 1804

Abbey Mills  
St Albans

**Letter 2.**

Mr Stevenson  
Vestry Clerk  
St Margarets

39 Throgmorton Street  
22<sup>nd</sup> Feb<sup>y</sup> 1804

Sir

I wrote to you some time back concerning Mary Berry; I expected you would have replied as I requested.

I conclude therefore by not hearing that you do not intend to send anyone for her; I shall therefore send her the first convenient opportunity.

Her Father has been down to St Albans since I last wrote to you and promised to call before [five?]

I remain Sir  
Your most Ob<sup>d</sup> Servant  
Charles Woollam

.....

**Letter 3. To Mr Stevenson,**

39 Throgmorton St 28<sup>th</sup> February 1804

Sir

I received your letter; and I shall be obliged by being informed the day upon which the Committee next meets, when with my brother [or?] myself will attend.

Mary Berry has long been discussed, the particulars and the cause of which I informed you in my first letter. The Father was down to see her in the interim of my two letters to you; and I fortunately took his address in London. We will endeavour that he also shall attend at the Committee.

At the time I first called to see the Children I was informed that your Parish never sent them out, unless they were first of all sound, I observed that we proposed having them upon trial as is the case with the other parishes; the reply made was that those only who were proper to go were selected.

I came to town yesterday and shall be obliged by your reply as soon as possible, which will in that case reach me before I leave London.

I remain Sir  
Your most Obedient Servant  
Charles Woollam

**Letter 4. (Different hand)**

To The Gentlemen of the Committee of the United Parishes of St Margarets and St Johns, Westminster.

From Woollam and Co., 8 March 1804

Gent<sup>m</sup>

We are prevented from attending at your Board today as one of us intended doing, to lay before you the situation of Mary Berry, one of the children who was apprenticed by your parish to our manufactory at St Albans in August last. We therefore beg to refer you to our Chas. Woollam's letters addressed to Mr Stevenson some weeks ago, and to request the favor of you to ensure an investigation of the business to take place, when we have no doubt you will find our complaint to be just and reasonable. We conceive the best method to do this will be to send a person to St Albans who will there see the woman who has had the care of Mary Berry, and also have an opportunity of seeing how the children are treated.

We shall be obliged by your immediate answer and should you determine to send a person to St Albans be pleased to inform us two whole days before, lest our Charles Woollam should be from home.

We are Gentlemen  
Your obedient Servants

Charles Woollam and Co.,  
39 Throgmorton Street

**DIETARY OF THE WORKHOUSE OF THE BERKHAMSTED UNION 1835**  
 Berkhamsted Board of Guardians Minute Book 9 Nov 1835 p.53  
 (HRO BG/BER 1)

The General Dietary								
	Breakfast		Dinner				Supper	
	Bread: Oz	Gruel. pints	Beef oz	Soup pints	Suet Pud oz	Potatoes lb	Cheese oz	Broth pints
Monday	14	1 <sup>1</sup> / <sub>2</sub>	5	~	~	1	~	1 <sup>1</sup> / <sub>2</sub>
Tuesday	14	1 <sup>1</sup> / <sub>2</sub>	~	1 <sup>1</sup> / <sub>2</sub>	~	~	2	-
Wednesday	14	1 <sup>1</sup> / <sub>2</sub>	5	-	~	1	-	1 <sup>1</sup> / <sub>2</sub>
Thursday	14	1 <sup>1</sup> / <sub>2</sub>	~	1 <sup>1</sup> / <sub>2</sub>	~	~	2	-
Friday	8	1 <sup>1</sup> / <sub>2</sub>	~	-	14 12	~	2	~
Saturday	14	1 <sup>1</sup> / <sub>2</sub>	5	-	~	1	-	1 <sup>1</sup> / <sub>2</sub>
Sunday	14	1 <sup>1</sup> / <sub>2</sub>	~	1 <sup>1</sup> / <sub>2</sub>	~	~	2	-

Aged, Infirm, and Sick Dietary									
	Breakfast		Dinner				Supper		
	Bread: Oz	Gruel. pints	Beef or Mutton oz	Pot- atoes lb	Soup pints	Rice Pud oz	Cheese oz	Broth pints	Women
Monday	10	1 <sup>1</sup> / <sub>2</sub>	5	1	-	~	~	1 <sup>1</sup> / <sub>2</sub>	Tea to be made by the Matron, and one Pint to be given to each Person twice a day, with Bread and Butter, in lieu of Gruel or Broth.
Tuesday	10	1 <sup>1</sup> / <sub>2</sub>	~	~	1 <sup>1</sup> / <sub>2</sub>	~	2	~	
Wednesday	10	1 <sup>1</sup> / <sub>2</sub>	5	1	1 <sup>1</sup> / <sub>2</sub>	~	~	1 <sup>1</sup> / <sub>2</sub>	
Thursday	10	1 <sup>1</sup> / <sub>2</sub>	~	~	1 <sup>1</sup> / <sub>2</sub>	~	2	~	
Friday	10	1 <sup>1</sup> / <sub>2</sub>	~	#	1 <sup>1</sup> / <sub>2</sub>	10	2	-	
Saturday	10	1 <sup>1</sup> / <sub>2</sub>	5	1	1 <sup>1</sup> / <sub>2</sub>	~	~	1 <sup>1</sup> / <sub>2</sub>	
Sunday	10	1 <sup>1</sup> / <sub>2</sub>	~	~	1 <sup>1</sup> / <sub>2</sub>	~	2	-	

Children under 10 Years of Age						
	Breakfast		Dinner			Supper
	Bread oz	Milk or Gruel	Beef or Mutton	Potatoes lb	Pudding oz	Milk or Gruel
Monday	10	½	4	½	~	½
Tuesday	10	½	~	~	Suet, 6	½
Wednesday	10	½	4	½	~	½
Thursday	10	½	~	~	Rice, 6	½
Friday	10	½	~	~	Suet, 6	½
Saturday	10	½	4	½	~	½
Sunday	10	½	~	~	Rice, 6	½

## DIET TABLE of HATFIELD POOR HOUSE

Appendix to the First Report from the Commissioners on the Poor Laws  
PP.1834 Vol. IV Dispauperised Parishes, Herts pp 64A-65A

'The dietary I thought profuse in some points.'  
Edwin Chadwick p.70A

DAYS OF THE WEEK	MEN, For BREAKFAST	WOMEN, For BREAKFAST	CHILDREN, For BREAKFAST	MEN For DINNER	WOMEN For DINNER
Monday	At Work. 1½lb. Of bread and 4oz. Of cheese is taken with them each day, for breakfast and dinner. These at home, milk porridge.	1lb. Of bread per day, 1oz. Of tea, ½lb of butter, and ½lb. sugar, for the week, for breakfast and dinner, each day.	Milk porridge	Bread and cheese	Tea, bread and butter.
Tuesday		Ditto	Ditto	Ditto	Ditto
Wednesday		Ditto	Ditto	Ditto	Ditto
Thursday	Ditto	Ditto	Ditto	Ditto	Ditto
Friday	Ditto	Ditto	Ditto	Ditto	Ditto
Saturday	Ditto	Ditto	Ditto	Ditto	Ditto
Sunday	Ditto  Ditto  Milk porridge for all the men, there being none at work.	ditto	Ditto	8ozs. Of meat with potatoes & other vegetables.	8ozs. Of meat with potatoes & other vegetables.

DAYS OF THE WEEK	CHILDREN For DINNER	MEN For SUPPER*	WOMEN For SUPPER	CHILDREN For SUPPER
Monday	Bread and Cheese.	Peas or rice soup.	Peas or rice soup.	Peas or rice soup.
Tuesday	Ditto	8oz. of Meat with potatoes & other vegetables.	8oz. of Meat with potatoes & other vegetables.	8oz. of Meat with potatoes & other vegetables.
Wednesday	Ditto	Peas or rice soup.	Peas or rice soup.	Peas or rice soup.
Thursday	Ditto	8oz. of Meat with potatoes & other vegetables.	8oz. of Meat with potatoes & other vegetables.	8oz. of Meat with potatoes & other vegetables.
Friday	Ditto	Peas or rice soup.	Peas or rice soup.	Peas or rice soup.
Saturday	Ditto		Ditto	Ditto
Sunday	8ozs. Of meat with potatoes & other vegetables.	Bread & cheese	Tea, bread and butter.	Bread & cheese.

\* The chief meal of the labourer in this part of the country is the supper.

DAYS OF THE WEEK	MEN		WOMEN	
	1 <sup>st</sup> Class	3 <sup>rd</sup> Class	1 <sup>st</sup> Class	3 <sup>rd</sup> Class
Monday	Full allowance	Meat only on Sunday	Full allow-ance	Tea, sugar and butter suspended, during the pleasure of the Vestry.
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

**Aylesbury Guardians Minute Books 1838 - 1839**

Bucks RO Ref: G2/3 p198-199

**29<sup>th</sup> August 1838**

At this Meeting the Committee appointed on the 15<sup>th</sup> inst. To visit the Silk Mills at Tring delivered the following Report which was ordered to be entered on the Minutes;

Aylesbury Union 27<sup>th</sup> August 1838

“We the undersigned Guardians appointed by the Board to visit the Silk Mills at Tring for the purpose of seeing the state of the children employed there, have the satisfaction to report that we found the children clean healthy and satisfied with their employment — we visited their dwellings and found them generally at dinner and satisfied with their provision and treatment, the Cottages all white-washed clean and healthy, the manners of the children in going and returning from their work quiet and orderly forming a contrast to the manner and habit of the children in too many of the villages of this Union.

(Signed)

David Reid  
Edw<sup>d</sup> Horwood

Jos<sup>h</sup> Seamons  
George Elliot  
Thos. Horwood

**20<sup>th</sup> March 1839**

Bucks RO Ref G2/3 p309-310

The Report of the Committee appointed for the purpose of visiting the Silk Mills at Tring to inspect the state of the Children employed there belonging to this Union Your Committee proceeded accordingly to Tring and found the children at work in the Mill orderly and well conducted. Your Committee afterwards visited them at their private dwellings and found them generally in as clean and healthy a state as they could expect from their very slender earnings which earnings were in most instances no more than barely sufficient to purchase for them the commonest necessaries of life. Your Committee likewise found upon enquiry on the spot that Sunday was wholly neglected the Factory Children ere spending most of the day in a neighbouring field at hockey pitch and bustle and other Games quite unsuited to the sacredness of the Sabbath. We therefore think it right to recommend than an application to Mr Evans the Owner of the factory to institute a School for the instruction of those children for whose well doing and morality this Board has incurred a great responsibility by sending them from their own natural Guardians.

Christopher Roads Chairman.



**Aylesbury Guardians Minute Books 1839**  
 Bucks RO Ref: G2/4

April 10.1839

Letter from Henry Rowbotham.

Tring Mills April 5 1839

Sir

The Report of the Committee who recently visited the Silk Mills together with your Letter bearing date March 29<sup>th</sup> 1839 were yesterday handed to me by Mr Evans and since he does not interfere with any regulations connected with this establishment I hasten in accordance with his wishes to reply to the several remarks contained therein.

I beg to thank the Committee for their observations in reference to the general management of the Mill. I will devote my early attention to the Wages paid to the Union Children and as far as the present depressed state of our trade will admit will make some addition to the earnings of those whose activities warrant me in doing so but you must be aware that amongst a number of Children there are some naturally dull and even in three years are not proficient in their business and therefore cannot be expected to receive the same rate of wages as those who have made more progress.

There is one remark contained in the Report alluding to the Sabbath being entirely disregarded by the Union Children which I think is rather exaggerated. I am informed by the Teacher connected with the church School that the Children who have been in the habit of attending there have discharged this duty tolerably regular and since I am now aware that the Board wish all the Children to be sent to Church I have for several weeks past endeavoured to enforce a strict observance of this duty I have requested a weekly return to be made to me by the Teachers which shows me at once how far my wishes are complied with. I will shortly lay before the Board the list alluded to and leave them to judge whether a due respect is not paid to the Sabbath \_\_ I have now nearly completed my arrangem<sup>ts</sup> for establishing a Day School intended not only for the benefit of the Children employed in the Mills but for the infant part of the population in the Neighbourhood. I beg to solicit the co-operation of the Board to enable me to carry these plans into effect much good may be done by their impressing upon the minds of the children and those under whose care they are placed the necessity of their attending to our mutual wishes.

I am Sir

Yours mo'oby

pro D. Evans and Co.

Henry Rowbotham.

**Report of the Medical Officers to the Board of Governors and Directors of the Poor of the Parishes of St Margaret and St John the Evangelist, Westminster.**

CWA E5216 pp.163-64

13 May 1847.

Gentlemen

We beg to report to you that in conformity with your resolution forwarded to us May 6<sup>th</sup> requesting us to visit the Silk Mills of Messrs D Evans & Co at Tring, Herts, and enquire into any particulars likely to affect the present or future health of Female Children of the Ages of from 11 to 13 Years now in this house, and respecting whom it is proposed they should be apprenticed at the said Mills.

We proceeded yesterday to visit that Establishment. Our enquiries were directed

- To the condition of the Children and the Nature of the employment
- To the influence the labour might have on their present or future health
- The hours of labour and recreation
- The dietary
- The Accommodation
- And any peculiarity either of the Manufactory, or the Locality likely to be prejudicial to health

The Children, for the most part, appeared in good health, were neat and cleanly in their persons, and appeared very contented and happy.

The employment is not laborious, and can be in no way prejudicial to health.

At present they labour twelve hours daily, Saturday excepted, when they work only 9 hours; they rise at 5 o'clock in the Morning, and commence their duties at half past 5, continuing to labour until 7 o'clock in the Evening, having half an hour for Breakfast and 1 hour for Dinner and the Interval from 7 to 9 o'clock to repair their Clothes and take recreation.

We should strongly object to so lengthened a period of daily occupation, but, we were informed by the Manager, that very shortly the new Factory Regulations would come into operation, whereby the Children would be required to work 10 hours only, thereby affording them a longer time both for Instruction and Recreation.

The Children who are under 11 years of age, are employed for 7 hours only, daily, and have the opportunity of going to school for three hours. The Elder Children, on the Sunday, go to the different Churches in the neighbourhood, and, occasionally are taken a walk under the guidance of the Matron and her assistant.

The Work Rooms are spacious, well ventilated, light and cheerful, in the Winter the temperature is regulated by Hot Air and usually ranges from 56 to 58 degrees.

The Sleeping Apartments are small and ill ventilated, but the accommodation is suitable, and we ventured to make some suggestion for the better ventilation of these Apartments, which the Manager promised should be carried out.

The Domestic Arrangements are also tolerably good, and the kind and quantity of food are good and sufficient. The Dietary is as follows:

Daily	Breakfast	Dinner	Supper
Bread	Milk	Meat	Cheese
1lb	1 Pint	6oz	About 3oz
		Cooked with vegetables 4 days a Week Soup or Rice or Suet Pudding 3 days No Beer	

The Ratio of Sickness, was very small, it was seldom that there were three Children sick at one period, and during 8 years only 1 Death had occurred.

The only correction exercised in Case of Refractory Conduct is a restriction to Bread and Water for not more than two days, with separation and compelling the Offender to wear inferior Clothing on the Sunday.

There was one peculiarity, on a careful Examination of the Children, that needed investigation, it was that some of the Children were afflicted with Bronchocele, a Glandular Swelling of the front part of the Neck, in some cases it was slightly observable, and in 2 or 3 more prominently; pursuing our enquiries we ascertained that the Girls of the Neighbourhood were also affected with it, and the cause is referable to either the Locality, or the Water, but probably to both. Although this complaint is frequently peculiar to situation, and in no way dangerous in its consequences, we felt it necessary to see the Medical Attendant of the Establishment and learn from him, the result of his knowledge and experience of this ailment, and he informed us it was peculiar to the Neighbourhood, but that it seldom advanced beyond the condition we saw it, and rarely required Medical treatment.

We have now laid before you the different points and circumstances, we deemed it necessary to consider, to enable us to arrive at a correct Judgement, so as to advise you with reference to the propriety of Apprenticing the Children of the Workhouse to Messrs Evans & Co, and beg to state to you that we are of Opinion that it is desirable to apprentice them; and that it will not be in any way prejudicial to their present or future health.

We cannot conclude this report without acknowledging the attention we received and the readiness with which all our enquiries were responded to.

We are Gentlemen

Your obedient Servants

John Lavies, Surgeon  
J Wright, MD

**Minutes of the Proceedings of the Governors of the Poor 1846-1847**  
CWA E5216

8<sup>th</sup> June 1847

Resolution of the Board of Thursday last ~ Mr Rowbotham was apprized that certain Gentlemen of the Board would meet him at the Workhouse on Monday the 7<sup>th</sup> inst ~ at 12 o'clock, and they met accordingly, the several female Children of suitable ages attended in the Board Room, Dr Wright who had been sent for, being also in attendance to give his opinion of the fitness of each Child for the services required of her, and his opinion being that there was no unfitness in any of the Children, Mr Rowbotham selected the several Girls as follows;

Garwood Maria	13	no parents
Brown Sarah	13	do
Knight Rosina	13	do
Appleyard Susan	12 <sup>1/2</sup>	do
Beard Mary Ann	12	do
Chard Hannah	11	Mother
Dumbarton Martha	12	Step mother
Green Charlotte	12	Mother
M <sup>c</sup> Dun Catherine	12	no parents
Silk Mary Ann	12	do
Walker Elizabeth	11 <sup>1/2</sup>	supposed to have a Father
Ward Emma	11	no parents
Haines Sarah	13	do
Benyon Mary Ann	13	do
Nonin Elizabeth	12	a Mother

The above were desirous of being sent to the Silk Mills and those who had relations did not object to their going.

The Girls as follow, were also desirous of being sent but their Parents or Relatives objected

Jones Isabella	12	her Mother been in this house upwards of 2 years and another of her Children, objects to her Daughter being absent from her
----------------	----	---

Minshull Harriet	13	state their Aunt Mrs Yardley of
Emma	11 <sup>1</sup> / <sub>2</sub>	No 3 Thomey St Holborn, objects.
Gammon Sarah	12 <sup>1</sup> / <sub>2</sub>	her Aunt Mrs Edwards objects
Lloyd Louisa	13	wishes to go, but Aunt objects
Tombs Tamar	12 <sup>1</sup> / <sub>2</sub>	do do

It was arranged with Mr Rowbotham that subject to the approbation of the Board, the Children should be forwarded to Tring on Saturday next.

The Board thereupon desired to have the several Children selected brought before them, and they attended accordingly, and were questioned if they were desirous of going on trial to the Silk Mills at Tring with a view to their being apprenticed thereto until they were 18. Isabella Jones stated her Mother objected who has been in the house 2 years and is now recovering slowly from Paralysis, and her Mother came before the Board, and had no reason to offer in support of her objection, but said she would sooner take the chance of supporting herself and her 2 Children out of the house, than that her Child should be sent away from her, the Child was thereupon withdrawn from the List.

The Brother of Mary Ann Beard also attended the Board, and offered to provide for his Sister, rather than she should be sent away, Ordered that the Relieving Officer make full enquiry into the circumstances and character of the Brother and his Wife and if satisfactory the Child be given up to the Charge of the Brother.

Mrs Mary Ann Edwards the Aunt of Sarah Gammon also attended the Board, as ordered from the last Board enquiries in the mean time having been made by the Relieving Officer as to her circumstances and character and the Report being satisfactory, this Child was given into the charge of the Aunt and Ordered to be supplied with suitable clothing.

NB Resolved That it be referred to the Deputation of Governors who went to Tring, to see the Children properly conducted thereto.

[Signed]

**20 March 1851 Report of the Churchwardens and Overseers visit to the Apprentices and Children on probation at Tring Mills, Herts.**

Minutes of the Proceedings of the Governors of the Poor. 1851  
CWA E5219 pp.284-50

In pursuance of the duties of their office and the request of the Board of Governors, the Church Wardens and Overseers of the United Parishes, proceeded on Friday the 14<sup>th</sup> instant to visit the Apprentices and other Children at the Silk Mill at Tring; and, they report, that in the month of November last an assault was made upon one of the Girls sent by these Parishes, by a man upwards of sixty years of age belonging to the Works ~ no complaint was made by the Girl to anyone, and it only came to the knowledge of the Manager of the Mills about 8 or 9 days after by a report of the Old Man having boasted to some of his fellow workmen of what he had done. The Surgeon who attends the Children was directly called in the man taken before the Magistrates and by them committed to gaol, but at the last assises acquitted he was however four months in Prison, and has been dismissed from the Mill where he had worked for a period of twenty five years. The Officers after all the enquiries they could make and from the information they could procure have reason to believe that all was done that the Proprietor and Manager could do to punish the man under the circumstances of the case. This had led to more strict rules being adopted at the House where the Apprentices reside ~ to their being sent to and from their work under the care of one of the workmen and their being brought in and dismissed some ten minutes before the general body of the work people. These measures, together with the bad example of three or four Girls from the Parish of St Marylebone are causing much dissatisfaction and rebellion amongst the Children but from their appearance, an examination of the Food ~ Bed rooms, Beds and from the answers of the Matron to the questions put to her, the Officers are strongly of opinion that the Girls are well taken care of, and that a benefit has been conferred upon them, in placing them in the situation.

There are fifty four apprentice Girls between the age of twelve and eighteen, and when due allowance is made for the contaminating influence of the older portion of the inmates of the Workhouse to which they have been subjected more or less since they first breathed until sent to Tring, it is only surprising that they behave so well.

The Clergyman of the Parish the Revd John Yelloly and his Curate are very attentive to the Children at the Sunday School which they are all required to attend and the reverend Gentlemen have taken great pains to provide amusement for the

Scholars by themselves on two Holy days that are given in the year. They have not often visited the Cottage where the Children reside but acceded to a hope expressed by the Officers that in making their ministerial visits to the houses of their Parishioners they would not pass by this one.

The last twelve Children have now been at the Mills rather more than a month and the Churchwardens and Overseers recommend that no time should be lost in completing the binding them Apprentices, feeling sure that it is more for the benefit of the girls themselves than for that of the Parishes.

Henry Coode

## APPENDIX VII

Table A.9 Silk workers by Age and Gender 1891

Age	St Albans			Redbourn		
	Male	Female	All	Male	Female	All
0-14	6	18.2	17	24	32	56
15-20	9	27.3	20	7	40	47
21+	18	54.5	25	3	35	38
15+	27	81.8	45	10	75	85
All	33	100	62	34	107	141

Age	Tring			All Districts		
	Male	Female	All	Male	Female	All
0-14	16	35.6	40	46	67	113
15-20	9	20.0	65	25	107	132
21+	20	44.4	89	41	111	152
15+	29	64.4	154	66	218	284
All	45	100	194	112	285	397

Age	Sex Ratios		
	St Albans	Tring	Redbourn
0-14	63	67	75
15-20	55	16	18
21+	91	29	9
15+	69	23	13
All	67	30	32

Source: CEBs 1891 Hertfordshire



**Table A.10 A comparison of English Counties**  
as published in the *Morning Chronicle* 2 January 1851.

	Pop	Ignorance above average	Proportion of Education to Pop	Improvident marriages above average	Bastardy above average	Pauperism above average	Crime above average
Eastern							
Norfolk	412,664	38	1 in 10.5	21	53	29	17
Suffolk	315,073	42	1 in 9	24	27	36	7
Essex	344,979	42	1 in 9.5	35	below 19	50	17
E. Midlands							
Herts	157,207	53	1 in 9	69	5	17	15
Beds	107,936	53	1 in 8	142	17	26	18
Cambridge	164,459	33	1 in 11	39	average	27	below 1
South & E. Midlands							
Hunts	58,549	38	1 in 8	122	below 18	8	below 18
Northants	199,228	15	1 in 7	84	below 11	20	10
Midlands							
Leicester	215,367	below 2	1 in 10	104	below 23	18	25
Notts	249,910	1	..	31	18	below 26	below 15.8
Derby	272,217	below 13	..	below 16	39	below 44	below 39

This table is reproduced as printed in the *Morning Chronicle* 2 January 1851 p.6ii Labour and the Poor. Letter XLII 'The Spinning House'. The notes below accompanied the table, and it will be remarked that the evidence for the high level of improvident marriages (Col.4) is taken from the returns of the Registrar General, and not from the 1851 Census, which lists only 32 married men under the age of 20 in the whole of Hertfordshire.

1851 Census Report : BPP 1852-3 LXXXVIII p.147

**Table:**

Col 1 = Pop of each county

Col 2. = % of ignorance in each county above the average of England and Wales, as indicated by no. persons signed register with their marks 'and who may be assumed to be incapable of writing their names,'

Col. 3 = prop. of young pop receiving education, by results of Church School enquiry, instituted 1847.

Cols 4 & 5 = % above average of marriages in which males under 21 yrs \_\_\_ and illegitimacy as recorded in returns of Registrar Gen.

Col 6 = Condition of each county .... pauperism, 'calculated upon the proportion, to the whole population, of persons relieved in each county in the year 1847.'

Col 7 = Crime, indicated by gross criminal commitments of males to the assizes and quarter sessions during 1847.

Nos in table under each head show amount % in each county above the average of whole of England and Wales. (Fractional parts omitted)

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Part I, England and Wales, and islands in the British Seas, PP 1844 Vol.XXVII

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*Population Tables. Part I. Numbers of the inhabitants in the years 1801, 1811, 1821, 1831, 1841 and 1851*

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