

University of Leicester

A SURVEY OF WAGE RATES IN FIVE MIDLAND

COUNTIES, 1750-1834

Thesis submitted for the Degree of Doctor of Philosophy

by

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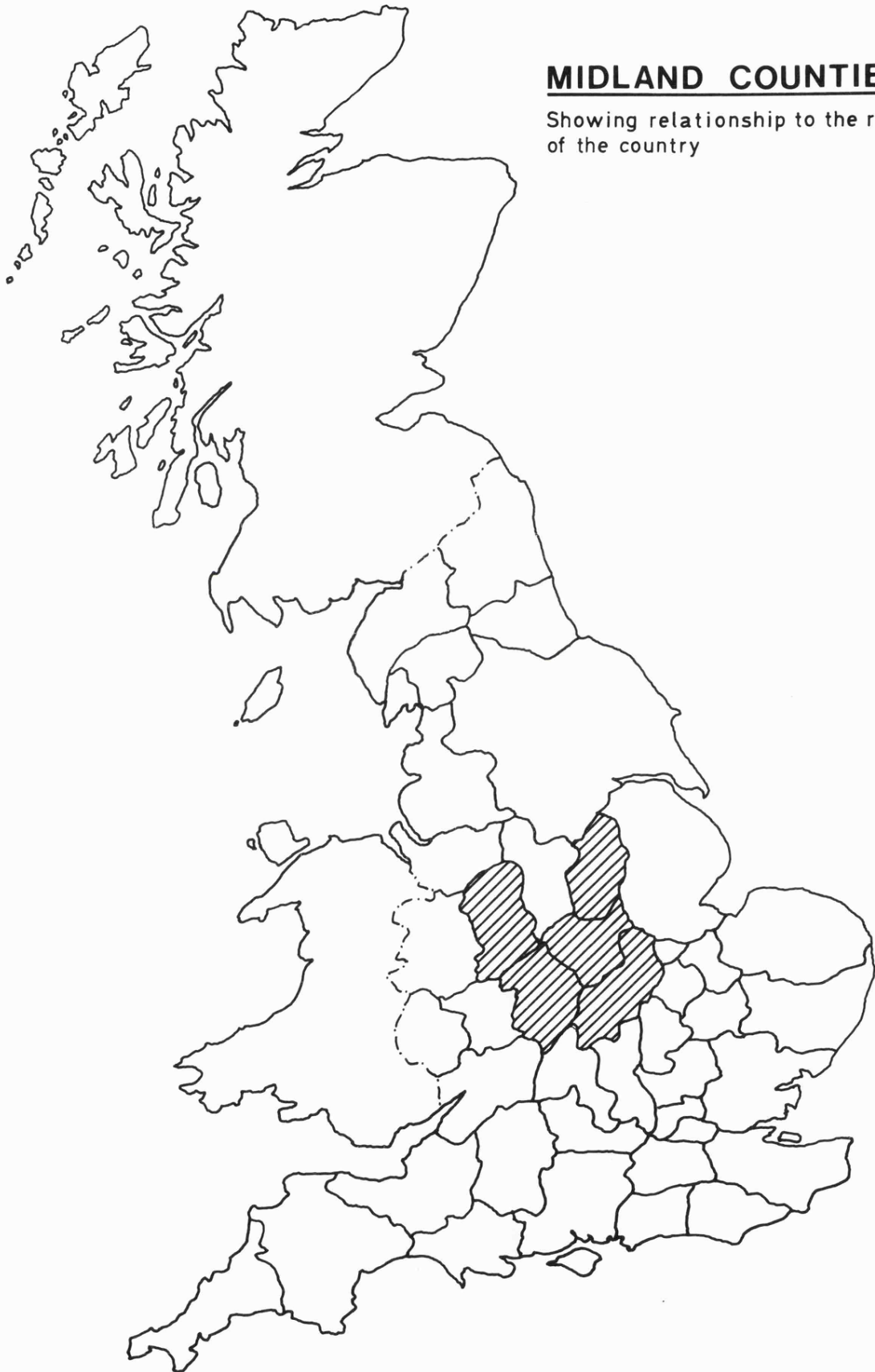
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MIDLAND COUNTIES

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Abbreviations

A.E.R.	American Economic Review
Ag.H.R.	Agricultural History Review
B.P.L.	Birmingham Public Library
B.P.P.	British Parliamentary Papers
C.A.	Corporation Archives
C.T.V.	County Treasurers Vouchers
E.H.	Economic History
Ec.H.R.	Economic History Review
E.J.	Economic Journal
E.M.G.	East Midland Geographer
H.S.	Highways Surveyor
Inc.	Incumbent
I.E.A.	Institute of Economic Affairs
I.L.R.R.	Industrial & Labour Relations Review
I.R.S.H.	International Review of Social History
J.Ec.H.	Journal of Economic History
J.P.E.	Journal of Political Economy
J.R.A.S.E.	Journal of the Royal Agricultural Society of England
J.R.S.S.	Journal of the Royal Statistical Society
L.M.	Leicester Museum
L.R.O.	Leicester Record Office
L.U.S.	Land Utilisation Survey

N.P. and P.	Northamptonshire Past and Present
N'ton R.O.	Northamptonshire Record Office
N.S.J.F.S.	North Staffordshire Journal of Field Studies
N.C.R.O.	Nottinghamshire County Record Office
N.P.L.	Nottingham Public Library
N.U.L.	Nottingham University Library
Ox.Bull	Bulletin of the Oxford University Institute of Statistics
P. & P.	Past and Present
Q.J.E.	Quarterly Journal of Economics
Q.S.	Quarter Sessions
R.E. & S.	Review of Economics & Statistics
R.E.S.	Review of Economic Studies
S.C.	Select Committee
S.B.T.	Shakespeare Birthplace Trust
S.E.J.	Southern Economic Journal
S.H.C.	Staffordshire Historical Collections
S.R.O.	Staffordshire Record Office
U.B.H.J.	University of Birmingham Historical Journal
V.C.H.	Victoria County History
W.R.O.	Warwickshire Record Office

Introduction

In common with many other pieces of research the final version of this thesis differs from that originally intended when the work began. Then, the aim was to extend the study of 18th century consumer demand and the standard of living into the Midland region. The choice of area was partly determined by the location of Leicester itself, but more importantly by the relative neglect of this area by wage historians. Thus a survey of wage data was begun for six Midland counties - although administrative problems at the Derby Record Office eventually led to the exclusion of Derbyshire, leaving only five counties, Leicestershire, Nottinghamshire, Northamptonshire, Warwickshire and Staffordshire.

It soon became obvious that the restricted nature of the sources available would preclude a wide coverage of occupations. In fact, given the constraint of needing fairly long runs of wages, the series that began to take shape represented those workers whose wages had been studied in other areas: builders, estate and parish workers. In other words the coverage of industrial workers was very poor as the surviving business records were far too scattered to permit any realistic regional assessment.

So that some basic standard of comparison could be maintained daily rates of wages were chosen as the most common measure of time spent at work, and this alleviated the problems of comparing piece work earnings across different occupations. These daily rates were expressed for each year of the period so that where the rates changed in mid-year the final figure represented the median position between these rates. Wherever possible the original bills and vouchers were used as sources, rather than

entries in account books, and modal rates of wages were calculated to give some indication of the most common rate for the job concerned, and to avoid the problems inherent in taking the simple mean wage rate which would include some elements of dispersion as the ranking within each parish, building firm or estate changed.

Although the original focus of attention was the 18th century as a whole the coverage of the early years was so poor that increasing emphasis was given to the latter half of the century. Even here, the real changes in the picture became most marked in the last 10-15 years and therefore coverage was extended to the end of the French wars. But in order to include the post war depression the coverage was extended yet again into the 1820s; finally so that these extensions would not prove never ending 1834 was chosen as a termination date. The thinking here was that the new data could be compared with the first real national wage census contained in the Appendices to the 1834 Royal Commission on the Poor Laws. Although this comparison eventually proved extremely difficult, because of the relatively different coverage of 1834 returns and the new Midland data, the temptation to extend the terminal date still further was resisted.

It was at the end of the first stage of the project - once the regional wage census was completed - that the whole emphasis of the research began to alter. Instead of finding a reasonable degree of similarity in wage levels for the same occupations within each of the counties, there began to emerge a complex pattern of wage differentials. These appeared to produce such a dispersion of rates that it was impossible to suggest that one rate for a particular job was in any sense representative. Therefore another dimension was added to the original time series intention: a

cross sectional analysis for the observations for each year across the region. At this stage the original intention had been to search for local prices which could be used to produce some sort of local real wage index, but the problems of the variations in wage rates warranted further investigation.

In its final form the basic findings of the wage census for each group of workers is set out in Chapters 2-4 (based on data in Appendices 1-3.) Some attempt to compare this data with other work on 18th and 19th century wages is made in the first part of Chapter 5; which then goes on to suggest possible explanations of these wage differentials within the region, by relating them to the economic background of the Midlands at this time, which was recounted in Chapter 1. Finally, Chapters 6 and 7 seek to integrate the whole study into the framework of the economic history of the labour market; and in so doing they look at some widely held assumptions which underlie this work. Assumptions which helped to render the discovery of these variations in wage rates such a surprise to one raw unsuspecting postgraduate.

Chapter IThe Midland Region 1750-1834

I

W.G.Hoskins has called Midland England a great divide between the blackened walls and pit head gear of the north and the suburban sprawl of the capital¹ and the location of the Midlands of necessity calls for the descriptions qualified by words such as middling, transitional or partial whenever discussion turns to wage levels, forms of economic organisation or industrialisation. During the 18th century the process of erosion which reduced London's predominant role in the nation's economy and which saw the shift in the balance more northwards, did not pass through the midlands without disturbing the '... green and quiet hunting landscape'.² Although by the 1830s the region could still be described as a predominantly farming area, where the bulk of parishes still belonged to the rural or sparse-rural classes of population density³ few would argue that the balance of the midlands economy had not been permanently altered. Whether attention was focussed on the emergence of the potteries and the Black country in the west or the rapid expansion of the knitted textile industries of the east; whether it was the impact of extensive canal construction or the reorganisation of agriculture the result was the same: a radical realignment of working conditions. This is not to suggest that production was concentrated in large scale factory establishments, or for that matter that

1 Midland England (1949), p.1.

2 op.cit., p.3.

3 G.H. Dury, The East Midlands, p.110.

industry as such was the chief source of employment for we know that the basis of the Birmingham metal trades rested in small scale workshops and that the organisation of the East Midland textile industry was still based on the homes of the workers. We also know that more modern forms of industrial organisation in footwear and knitting in the East, or engineering in the West did not emerge until the second half of the 19th century. Hence the utility of words like middling or transitional to describe a society or an economy which felt the full force of these early winds of industrialisation, but was not blown on to an entirely new course (as in Lancashire, Yorkshire and the West of Scotland) instead they tended to proceed faster on a largely pre-determined course. The Black country, for example, the centre of the west midlands coal and iron industries could still, in 1843, be described as a succession of semi-rural villages.¹ Many industries which progressed in the buoyant conditions of the late 18th century were to collapse by the 1850s: industries like ribbon weaving around Coventry, woollens at Kettering, the handworking sections of the knitting industry in Leicestershire and Nottinghamshire and much of the old button and toy trades of the Birmingham area. Most of these sectors could not cope with the increased output of cheaper products coming from the North and the end of the first phase of industrialisation by the 1830s saw the completion of the cycle of prosperity and depression for many old established midland industries.

These problems of adjustment to the new economic environment had their equivalent in the agrarian sector, where the post Napoleonic depression hit clayland areas hardest; and although clays were not the pre-eminent surface in the midlands they were prominent enough to create more than their fair

1 M.J.Wise (Ed.), Birmingham and its Regional Setting (1950), p.232
(Hereafter referred to as Wise, B.A. - British Association hand book).

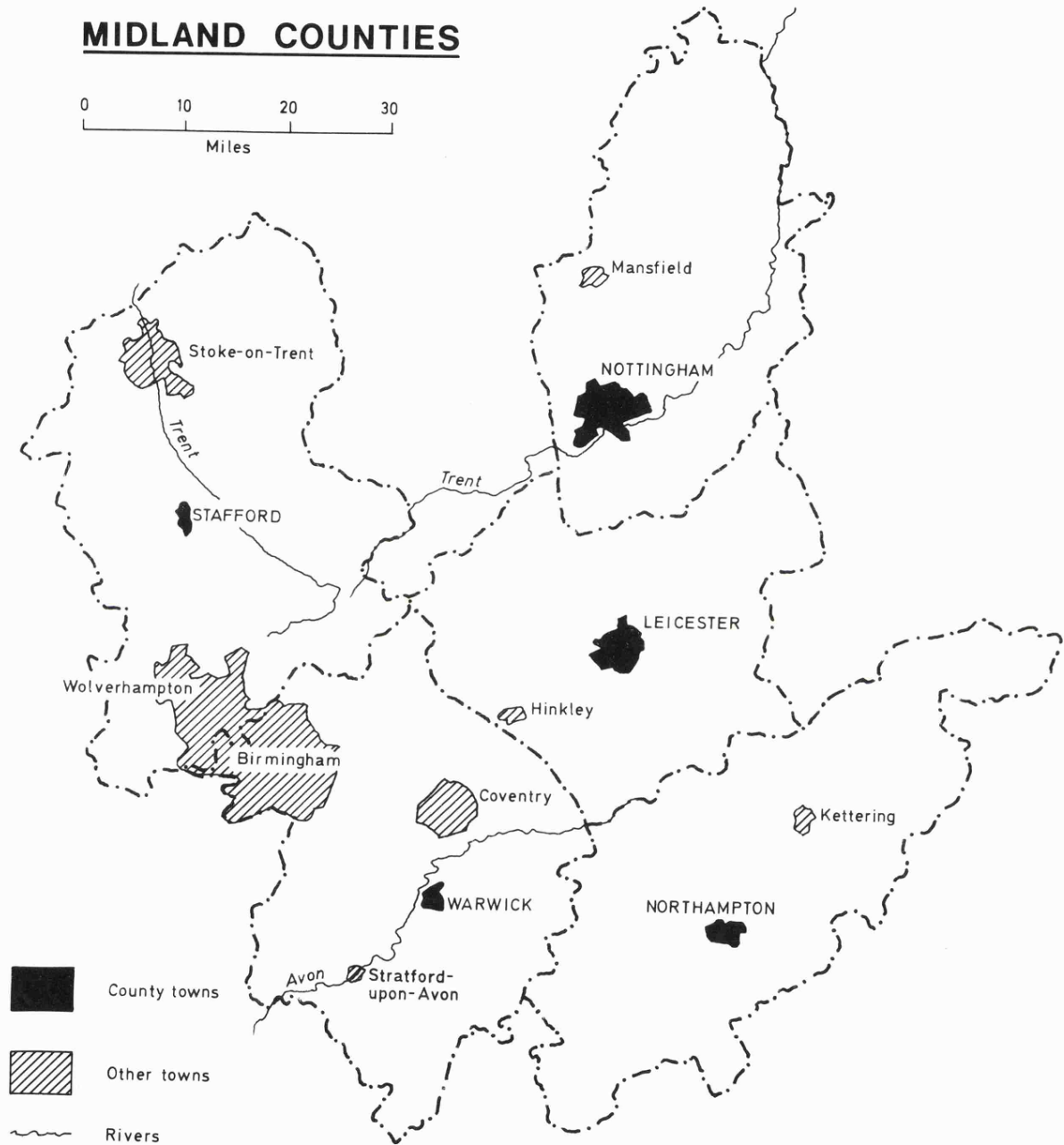
share of problems. In particular the possibilities of cost reductions, and/or further productivity increases, were so difficult to generate that vast arrears of rent were the chief result of the dramatic fall in grain prices. In contrast the much greater flexibility of lighter soils meant that many heavy areas of the midlands, which had been populous and prosperous areas for centuries, became centres of pastoral farming with a consequent reduction in the demand for labour and also therefore a fall in population density. These changes completed the destruction of the old peasant economy in many areas and the larger landowners replaced the vast number of smaller freeholders.

The sweeping forces of economic and social change, which we characterise as the industrial revolution, had a varied impact on the midlands as an area of long standing economic importance. It is the realignment of the economy in the eighty or so years after 1750 that is the subject of this chapter which after examining the major changes in the distribution of population will go on to look in more detail at the changes in agriculture, transport and industry.

II

Of the five counties covered in this survey three (Nottinghamshire, Leicestershire and Northamptonshire) are normally placed by geographers in the East Midlands and the remaining two (Staffordshire and Warwickshire) in the West Midland area. Whilst acknowledging the problem of the margin, where for example the borders of three counties meet just north of Coventry or to the east of Rugby, and also the somewhat artificial boundaries of administrative counties, the division between eastern and western midlands does have some value in an analysis of economic change in this period. For example, the

FIG. 1.



distribution of population over the period 1750-1834 in the east tends to confirm the dominant positions of the county towns of Nottingham, Leicester and Northampton, whereas in the west the older important centres such as Warwick, Coventry, Stafford and Lichfield give way to the emergence of Birmingham as a regional centre of economic life. Consequently the face of the western part of the region appears to have been changed more radically than that of the east, given the rise of the Black country and the potteries in the north, therefore this distinction between east and west will be used for something more than semantic or stylistic reasons.

Leicestershire appears to be strikingly divided by the Soar valley, which itself acts as an important transport corridor for north-south communications, into an area to the east of older settlements on the rolling landscape, and to the west an area of poorer soils, upland relief and therefore later settlement.¹ The concentration of industrial employment in the central and western areas of the county has accentuated the shift in population density to the west as over four hundred years of enclosures has significantly reduced labour demands in the pastoral areas to the east of Leicester.² The gradual rehabilitation of the county town after the ravages of the civil war came partly through its role as a thriving market town for agricultural produce from the surrounding areas, but more especially through rapid spread of the framework knitting industry. Leicester emerged as the centre of the hosiery section which dominated many parishes in the central part of the county but particularly in a crescent from Hinchley in the south west through Leicester itself to Loughborough in the north.³ It was in this hosiery belt that the fastest rates of population growth were

1 N. Pye (Ed.), Leicester and its Region (1972), p.8.

2 Hoskins, op.cit., p.5.

3 Dury, op.cit., p.159.

recorded in the early 19th century in contrast to the much slower rates in the eastern areas of the county. This era also marked the end of the prosperity of smaller market towns (e.g. Market Harborough, Lutterworth or Melton Mowbray) whose fortunes tended to crumble as the regional centre of Leicester grew in importance.¹

Nottinghamshire is very similar to Leicestershire in many ways, not the least important way being the role of the River Trent in dividing the eastern part of the county, with its early-settled old enclosed clay lands from the lighter soil areas of Sherwood Forest and hill pastures of the Derbyshire border areas. In addition, the role of the Trent as a medium of exchange between areas from southern Staffordshire to the Humber ensured this region's prosperity given the trade in new materials and grain.² Nottingham itself shared the expansion of the knitting industry with the surrounding industrial villages which also saw the rapid rise of a mechanised lace industry in the early 19th century. But in the eastern claylands, population densities were maintained longer than Leicestershire as the numbers of smallholders tended to hold up in the face of the growing influence of larger landowners who were more interested in the improvement of lighter sandy soils in the Sherwood area to the west of the Trent rather than the grazing potential of the East. Therefore rather than any major shift in population distribution this period saw the maintenance of the ancient centres of density in Nottingham itself and in the areas of coalfields and cotton mills to the west.³

1 R.H.Osborne, 'A General view of population change in the Middle Trent Counties, 1801-1861', E.M.G. (1970), p.41.

2 J.D.Chambers, The Vale of Trent (1957), p.5 (hereafter referred to as Chambers, Vale)

3 Osborne, op.cit., p.45.

Although the River Nene occupies a central position in Northamptonshire, its role as a transport artery is much less important than either the Soar or the Trent given the problem of navigability.¹ However this could not detract from the predominance of Northampton itself as a centre of population in the late 18th and early 19th centuries when in addition to its function as an agricultural market town, it added the role of production centre for the boot and shoe industry. The improved transport network (via the Grand Junction canal) and the supplies of cheap, unemployed labour from local villages helped to establish this industry in Northampton and so further concentrate population density on the county town.² The only other area of industrial importance in the Ise valley around Kettering and Rothwell witnessed a sharp decline in the position of their major industry, worsted, in the face of West Riding competition and had to wait until the mid 19th century for a revival of their fortunes with an extension of the shoe trade. In the western areas of the county the high percentage of grassland farming provided little justification for anything other than sparse settlements, whilst in the more arable eastern parts the collapse of grain prices after 1815 was instrumental in providing much of the surplus labour for the shoe industry giving some measure of the depths of the depression.³

In the eastern midlands therefore the impact of economic change tended to reinforce the dominance of the three largest towns in terms of their relative levels of population growth and as loci of economic activity. This trend was in stark contrast to the west midlands where the older areas of

1 P.J.Harris and P.W.Hartop, Northamptonshire - Its Land and People (Northampton 1950), p.9.

2 C.D.Morley, 'Population of Northampton and the Ise Valley 1801-51', E.M.G. 11, (1959), p.23.

3 Dury, op.cit., p.147.

greatest density in the lowlands bordered by Stafford, Lichfield, Warwick and Coventry were rapidly overtaken by the growth of Birmingham and the Black Country.¹ Previously, the swamps and forests of the Birmingham plateau had been deterrents to settlements, with only scattered woodland communities in contrast to the nucleated common field parishes south and east of the River Avon. The commercial and industrial reasons for the growth of Birmingham and its hinterland will be considered in more depth below, but its freedom from the sort of strict municipal and craft regulation which dominated the growth of Coventry, ensured the ideal flexible environment within which the major industrial changes in coal and iron production in the Black country immediately to the west, the massive impact of canal building and the old marketing services of the city could be catalysed into the emergence of Birmingham as the regional capital of the West Midlands by the end of the 18th century.²

In many ways the separation of Birmingham from the Black country is somewhat artificial as their growth was to a large extent mutually reinforcing, with the former acting as a finishing, processing and marketing centre for the semi-manufactured products of the latter. The links within this process were provided by one of the densest canal networks in the country which tended to bind the semi-rural communities even more closely together as iron and coal production increased rapidly. Indeed it was this same canal network that was a vital step in the growth of the other main area of expansion: the potteries, where '... the concentration of factory towns within a space of a little over

1. Wise (BA) op.cit., p.161; R. Lawton, 'Population movements in the West Midlands 1841-61', Geography, XLIII (1958), p.165.

2. M.J.Wise, 'Some Factors influencing the Growth of Birmingham', Geography, 33, (1948), p.187 (hereafter referred to as Wise, Birmingham).

20 square miles in North Staffordshire was one of the notable products of the Industrial Revolution'.¹

Staffordshire was regarded by many contemporaries as a sparsely populated and barborous county in a '... state of the greatest rudeness',² before the later 18th century changes which tended to polarise activity between the iron-orientated south and pottery dominated north, with a prosperous agricultural area in between. The role of Lichfield in the centre of the county illustrates well the impact of the industrial changes as its old importance as an administrative and ecclesiastical centre was reduced to the provision of service industries for the local agricultural area.³

In Warwickshire too, the older administrative centres at Coventry and Warwick lost their position relative to Birmingham. Coventry lay at the centre of the medieval road system and became an important centre of cloth production with the spread of 'new draperies', but in the face of stern competition from other textile areas and the development of a more diverse industrial background in Birmingham, it became by the early 19th century a '... relatively unattractive place of small ribbon producers...'.⁴ Although Warwick remained the political centre of the county until well into the 19th century it developed only slowly as a residential area for the gentry and

1 J. Thomas, The Rise of the Staffordshire Potteries (Bath, 1971), p.3.

2 V.C.H. Staffordshire, Vol.1; (1908), p.293.

3 H. Thorpe, 'Lichfield a study of its growth and function', S.H.C. (1950-1), p.190.

4 V.C.H. Warwick, Vol.VIII (1969), p.231; and J. Prest, The Industrial Revolution in Coventry (1960).

later as a supplier of provisions, consumer goods and financial services to the neighbouring spa resort of Leamington.

In the western midlands therefore the industrial revolution produced major changes in the dispersion of economic activity with the focus of attention shifting northwards in Warwickshire and southwards in Staffordshire. This left the distribution of population in the former county top heavy with very sparse settlement throughout the southern and eastern areas leaving older market towns at Alcester, Stratford and Rugby as centres of purely local importance. Whilst the central agricultural belt in Staffordshire emerged as a lightly settled belt between the Wedgewood influence to the north and the heavier industries to the south.¹

III

In the last section the main emphasis was placed on the growing industrial areas of the midlands as the focus of the widespread changes that took place in the economy during the late 18th and early 19th centuries. However, underlying these industrial elements was a very large rural sector which exercised profound influence upon the wider regional economy. Influence partly in terms of employment and incomes for the large numbers who were still employed in agriculture, partly in providing food and a labour supply for the expanding industrial areas, but also in terms of investment. Here, the role of the larger landowners was vital in the provision of fixed capital in farming, which facilitated the wider adoption of new agricultural techniques; but also in their interest in transport

1. M.W. Greenslade and G.C. Stuart, A History of Staffordshire, (Beaconsfield 1965), p.41.

changes and urban property development. It was the crucial role of the landowners in social overhead investment that bridged the urban and rural economies and channelled the surplus product into industry. Therefore a general survey of the agricultural scene in each of the five counties under consideration is necessary in order to understand the variations in emphasis within the midland economy.

Any attempt to describe farming patterns within an area as large as a county is bound to produce '... contradictory evidence which tends to blur the firm outline of one's generalisations, without, however, obscuring their central truth'.¹ But Leicestershire is a county where the broad physical divisions are reasonably straightforward and produce a basic soil and land use division between the stiffer clay loams of the eastern areas and the more friable soils of the west.² This distinction leads, predictably, to the light/heavy land-use patterns which appear to have been the basis of the revolutionary changes in 18th century agriculture, when the productivity of the lighter soils was transformed within a Norfolk type rotation by the elimination of the fallow year. Leicestershire does in fact fit this pattern in so far as the heavier soils in the east tended to adopt an increasingly pastoral emphasis in agriculture whilst the western lighter soil areas had a much larger arable component.

Although the pace of conversion to arable farming quickened considerably in the 18th century, the origins of this trend go back to the 16th, from which time the county gradually ceased to be a predominantly open-field arable county.³

1 V.C.H.Leicester Vol.2 (1954), p.234.

2 The main sources used in this section are: R.M.Auty Leicestershire (L.U.S. 1943); W.J.Moscrop, 'A Report on the Farming of Leicestershire', J.R.A.S.E. (1866); J. Monk, General View of the Agriculture of Leicester, (1794); W. Pitt, General View of the Agriculture of Leicester (1809).

3 D.R.Mills, 'Landownership and Rural Settlement with special reference to Leicestershire in the mid-19th century', (unpublished Ph.D thesis Leicester 1963).

The form of enclosure was by agreement until the mid-18th century and was concentrated mainly in the eastern division where it often resulted in depopulation when larger landowners were the prime movers and this began the westward drift in population density noted above¹ as labour demands were reduced. However the second wave of parliamentary enclosures in the late 18th century, which took the enclosed area from 60-90%, witnessed an increasing interest in the southern and western districts where many smallholders took the initiative, and where consequently depopulation was lower because the dominant form of land use was arable.

The main result of the enclosures was to reduce drastically the arable acreage from over 60% in the 17th century to 16% in 1801 bringing in its wake the '... final decay of the smaller peasant farmer and the emergence of the larger grazier'.² Although this trend was reversed in the later years of the Napoleonic wars, when much submarginal land was reconverted and the arable share rose to about 30% in 1815,³ this was really only a stay of execution for the smallholder as the severe post war depression finally ruined his efforts to survive by mortgaging his land.

In the post war years the depression in agriculture plus the continued trend towards pastoral farming in the east produced the smallest rates of population growth in the whole country, in contrast to the parishes in the hosiery belt where agricultural underemployment could be supplemented by outwork. Even the depressed and highly unstable conditions in hosiery after 1815 did not deter the movement of labour into these western parishes whenever the slightest sign of expansion appeared.⁴

1 See p.5.

2 W.G.Hoskins, The Midland Peasant (1957), p.262.

3 W.G.Hoskins, 'The Leicestershire Crop Returns of 1801', Trans.Leics. Arch.Soc. XXIV, (1948), p.135.

4 Pye, op.cit., p.431.

To sum up therefore, the eastern division was largely in grass with areas on the slightly colder upland soils to the north and east of Melton given over to dairying, but with the richer lowland pastures along the river valleys used for fattening sheep and cattle brought in from other counties. Whereas in the western parts of the county the lighter soils (and the nearness of demand at Leicester) meant that the arable share was about 50% with another dairying area to the west of Leicester around Market Bosworth. As far as the overall condition of farming was concerned this would obviously vary considerably thus making generalisations extremely hazardous but it is worthwhile mentioning two points noted by Caird: firstly that rents were very high (reflecting the nature of the demand for meat products?) and secondly the poor performance of many of the larger landowners in their agricultural spheres. He chastised them for their lack of interest in improving methods and their obsession with short tenancies although he does point out that the majority of landowners were fairly small and thus the potential for establishing themselves as best practice leaders was that much smaller.¹

It is very likely that this latter comment on the role of improving landlords was in such sharp contrast to their role in Nottinghamshire² where they pioneered the use of many new techniques in light soil farming. From the map used by Lowe in his 1794 survey (Fig. 2) it can be seen that the divisions within the county are more complicated than in Leicestershire. A cross section from west to each^{sk} would see the landscape change from the poor pastures on the Derbyshire border to the older settlements of the midland clay plain with a '... thin lozenge of lighter soils in the brecks of Sherwood...'³

1 English Agriculture in 1850-51 (1852), p.219.

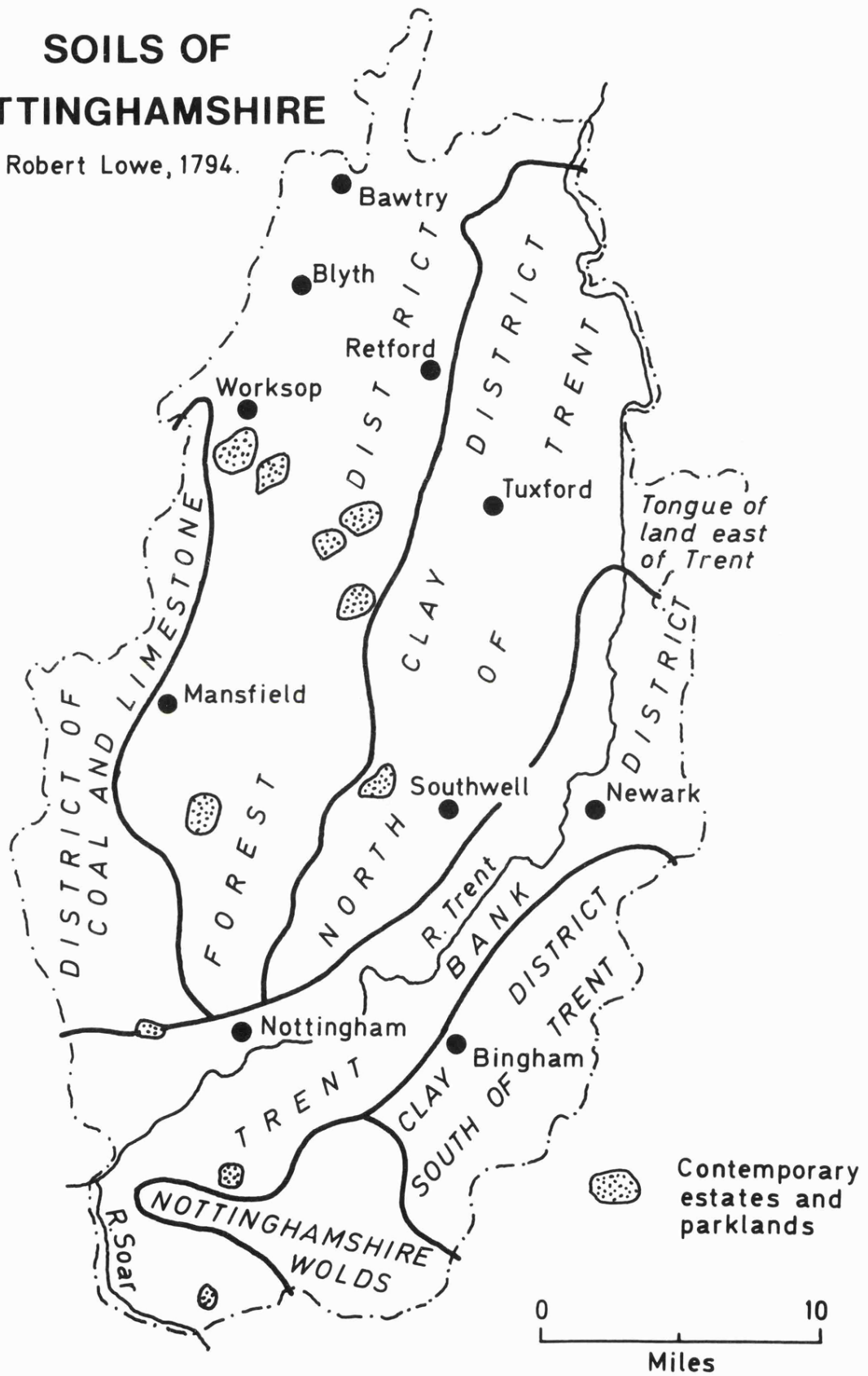
2 Main sources here are K.C.Edwards Nottinghamshire (L.U.S. 1943); R. Lowe, General View of the Agriculture of Nottinghamshire (1798); R.W.Corringham, 'Agriculture of Nottinghamshire', J.R.A.S.E. (1845)

3 Chambers, Vale, p.7.

SOILS OF NOTTINGHAMSHIRE

After Robert Lowe, 1794.

FIG. 2



in between. Along this axis the major problem in the west was to wrest a livelihood from the poor soils whereas in the east the more normal problem was to obtain a better or fuller reward.

The picture of agriculture in the early 18th century would have revealed a fairly prosperous landscape of open fields with an arable emphasis on the eastern clays, the dominance of the woollen interest in the forest districts and a much more mixed system in the Trent valley where the nearness of urban food markets encouraged intensive production. As in Leicestershire enclosures radically altered this picture by transforming the sterile landscape of the forest areas where its thin soils produced only fern, gorse and heath vegetation, into the most efficient area of the county by the early 19th century. It was the larger landowners who were the instigators of these changes although they were more numerous than Sir George Savile intimated when he told Lord Rockingham that '... four Dukes, two Lords and three rabbit warrens takes in half the county in point of space'.¹

There had been a long history of enclosure from the 16th century onwards but the motive had been dominated by the desire to produce more wool, and therefore extend the pastoral areas. The bulk of this early enclosure was undertaken in the eastern areas and in the Trent basin so that about a third of the counties open fields had been enclosed by 1750. This percentage had reached three quarters by 1800 but the main motive had become the consolidation and improvement of arable farms and the focus had shifted westwards onto the less tenacious soils⁵ in the northern clay districts and into the Dukeries. Here, the classic forms of turnip husbandry, with its

¹ Quoted in J.D.Chambers, 'The Problem of Sherwood Forest', Agriculture 62, (1955-6), p.177.

dual effects on fertility and winter stock feeding, had enabled the margin of cultivation to be extended into areas that were previously waste by using the investment resources of the estate owners to great effect.

The main effect on land use of these changes was to raise the share which arable farming took in the county from about 40% in 1750 to over 60% in the 1830s and within this county aggregate dramatic increases came in the Dukeries (15-66%) and the north west (33-66%) with only the very heavy clays south of the Trent showing a drop (47-40%).¹ In addition to this increase in the quantity of grain and root crops there followed increasing yields as new methods were written into tenancy agreements and landlords provided for the larger levels of fixed investment so that the isolated improvers of the early 18th century became much more typical of Nottinghamshire agriculturalists by the 1830s. Hand in hand with these improvements went better methods of sheep breeding with its greater flexibility and more immediate profits relative to the grazing and fattening areas of Leicestershire and Northamptonshire.

By the 1820s therefore the whole basis of agriculture had been transformed especially in the Dukeries, which had previously been unenclosed sheepwalks, and where fairly large farms with strict tenancy agreements to protect land-owner investment had provided the framework for the dramatic change in land use. In the south in the Trent basin the excellent lighter soils and rich meadows provided the ideal basis for the expansion of dairying and market gardening for the growing market of the Nottingham region. Even the claylands to the north of the Trent had adapted their methods to improve output, for although this was an area of flux with areas still under the open-field system,

1 D.V.Fowkes, 'The Process of Agrarian Change in Nottinghamshire 1720-1830', (Unpublished MA thesis, Liverpool 1971), p.491.

where the clays despite their higher sandy content were too strong for turnip cultivation and where farm sizes were much smaller, an elaborate six course rotation and some voluntary consolidation of holdings, had increased the area under the plough from 43% in 1750 to 54% in 1830. In fact the only black spot was the area to the south of Nottingham where the clays were much more tenacious and difficult to work with the result that the area of permanent pasture increased although its quality was poor.

Many of these improvements continued in the post-war depression although at a reduced pace with interest taken in fertilisers, increased stock densities, but more especially in drainage especially in the clayland area north of the Trent. The problem here was to try and eliminate or reduce the proportion of fallow years on this stiff land and part of the solution was found in the famous floating water meadows of the Duke of Portland. In the far north of the county too continued attention was focussed on the drainage problems of the Carrs in the Blyth area, and once again it was the larger landowners who took the initiative.

To conclude this review of the agricultural scene it might be useful to consider the role of parkland owners in a little more detail. Although the county had contained a considerable number of parks since the middle ages their area reached a peak of 23,000 acres in over 50 parks in the late 18th and early 19th centuries.¹ In terms of size and influence the nature of these parks revealed a good deal of diversity ranging from the ancient royal forests through the recently extended areas in the Dukeries to the smaller possessions of rising industrialists. The emphasis in these parks lay on the commercial side with much less attention being paid to game, pleasure

1 D.V.Fowkes, 'Nottinghamshire Parks in the 18th and 19th Centuries', Trans.Thoronton Society (1968).

gardens and landscaping than the timber and agricultural interests. Vast areas of the estates in the Dukeries were planted during the 18th century partly to meet their own needs but also to cope with the growing demand for pit props, hop poles and from builders.¹ On the farming side the role of the larger estates in financing and pioneering the use of newer methods has already been mentioned and this function can hardly be over-estimated as the new techniques were quickly introduced on home farms and then forced onto tenants through stricter agreements.

This whole process of change epitomises the advantages of size in terms of agricultural progress where economies of scale through the consolidation of landholdings produced greater output at lower cost. In Nottinghamshire the larger landowners took the lead in improving farming, they channelled their industrial, mineral and property returns into agriculture so that, for example, investment could continue even through the post-1815 depression. But it was also their example which influenced the smaller landholders on the eastern claylands into changing their organisation and practices in the search for higher profits. The actual implementation of the new methods on their own lands, and the diffusion of ideas to other areas which resulted from their efforts brought Nottinghamshire to the forefront of the agricultural revolution.

The observations of contemporary agricultural writers from Young to Caird were consistent in their praise and admiration of the efforts made by Nottinghamshire farmers to improve their methods; they were equally consistent in their deprecatory remarks about the condition of farming in

1 Fowkes, op. cit. p.79.

Northamptonshire.¹ Even in 1851 Caird found '... good farming still the exception...'² and went on to castigate landlords for their lack of interest in farm management - a point made in the same year by Bearn who found '... little taste in this county for experimental farming',³ despite the existence of several large landed proprietors. Perhaps these problems of low levels of efficiency and lack of improvers may be attributed to the same cause: the poor quality soils which cover most of the county? The predominance of the heavy midland clays gave little incentive to the widespread adoption of turnip husbandry, which was so common in Nottinghamshire, although the arable component in Northamptonshire agriculture was still important. In fact, Pitt⁴ noted the large exports of grain to other counties in 1809, so that there is little doubt that this county was able to increase its arable output beyond the needs of its, admittedly sparse, population but the costs involved were high and could only be covered by the rapid inflation of wartime corn prices. Indeed, it was the post war slump in prices that inevitably exposed the inefficiency in grain production when costs could not be adjusted downwards with anything like the flexibility noted above in the Sherwood area, and this resulted in a very severe depression for Northamptonshire farmers.⁵

In terms of relief the county may be divided into two broad areas: the heights or cold uplands which run across Northamptonshire from the south west

1 The main sources used were: J.Donaldson, General View of the Agriculture of Northampton (1794); W.Pitt, General View of the Agriculture of Northampton (1809); S.H.Beaver, Northamptonshire (L.U.S. 1943); W. Bearn, 'On the Farming of Northamptonshire', J.R.A.S.E. (1852).

2 Caird, op.cit., p.416.

3 Bearn, op.cit., p.102.

4 Pitt, Northamptonshire (1809), op.cit., p.232.

5 Dury, op.cit., p.139.

around Daventry to Stamford in the far North east, and form the least populous part of the area. Secondly the rest of the county made up of warm park-like, tree-studded lower county to the east encompassing the Nene valley in the centre, and at the north eastern extremity there is an area of recently drained fenland in the Soke of Peterborough. The soil divisions are a little more complicated with the most fertile red sandy soils found in scattered patches around Northampton itself and provided rich pastures and meadow land whilst the arable side produced the finest crops of corn.¹ A much larger area of red stony soils lay to the south of the county and provided the principal turnip land, but was far too weak in fertility, given the shallowness of the soils and the large proportion of stones, to be able to sustain an extension of more intensive arable farming but tended to make good sheep pasture. By far the biggest soil area which dominated the eastern side of the county was the mixed clayey loams extending from Brackley to Rushden, and presented a very stiff surface which made cultivation difficult without extensive drainage. Thus the soils in these southern and eastern parts were of a poor quality and could not have provided much response if any enterprising farmer had shown any interest in root crops and convertible husbandry. Whereas in the main grazing areas to the west the fattening pastures were of a much higher quality particularly in the gravelly soils of the Nene and Welland valleys, and on the north western pastures which bordered Leicestershire and which had strong clay soils. The only other soil area was in the far north east on the reclaimed fens just west of Peterborough where the peaty soil provided a hardworking background for wheat and turnips with a large area of good grass.

1 Beaver, op.cit., p.390; Bearn, op.cit. p.59.

By the early 19th century these soil divisions therefore produced a predominantly pastoral economy in the south and west and an arable emphasis in the north and east, although the quality of the clayland farming in the east was much poorer relative to the prime quality grassland areas of the west.

As far as enclosures were concerned it was the second half of the 18th century, when parliamentary acts allowed the final breakdown of resistance by common property owners, that completed the erosion of open fields that had begun in the 16th century. It appears that about 60% of land remained unenclosed by the early 19th century and the bulk of this lay in the central and southern parts of the county.¹ By the time Donaldson reported in 1794 this proportion had been halved as a result of a wave of enclosure in the central part of the county especially in the Nene and Welland valley grassland areas. This process was part of the general increase in improvements financed by the shift in rewards towards food producers in the late 18th century and resulted in improved farm buildings, better drainage schemes (especially in the Fens) not to mention the development of landscaped country houses and parks.

The land use system around the turn of the 19th century had two main elements therefore with a stock emphasis in the west and an arable in the east. In the west cattle was brought in from other counties for '... topping up for the London market',² having been bought soon after Ladyday and released slowly from September through the following February. Whereas sheep were bought at the beginning of winter and the lambs sold off in May, with the ewes being retained until late autumn. There was a much stronger arable content on the mixed farms of the east, but the efficiency of production

1 W.E.Tate, 'Enclosure movements in Northamptonshire', N.P. and P., 1, No.2, (1949), p.29; J. Steane, The Northamptonshire Landscape (1974), p.226.

2 Beaver, op.cit., p.389.

was still dominated by the form of rotation which tended to be a much more rigid three year system on the open field farms, than the more flexible mixture of root crops in a six year course in the enclosed areas. In the former open field areas, therefore, the post-1815 depression added further misery to the dual problems of poor soil and inflexible rotation, whilst even the enclosed areas proved incapable of withstanding the effects of the drastic fall in corn prices. On the other hand the grazing areas were not nearly so hard hit given the responsiveness of meat demands and the later expansion of the milk and dairying side once railways opened the London market even further.¹ This relative prosperity was reflected in the improvement noted in pastoral farming by Bearn in 1852 particularly in the drainage and breeding spheres, although he still noted the backwardness of the clayland farmers to the east with their small farms and obsolete methods.²

Turning to the western midlands we find that although parts of Warwickshire³ may be considered to be an extension of the clay vale, which dominated so much of the eastern part of the region, there is also a complexity of glacial soils in the central and northern parts of the county leaving only the southern and eastern sectors as true clay areas. In general, the most significant change in the farming landscape of this county was the way in which the basis of the agricultural system was transformed from being wool-dominated to become '... chiefly a corn county...' between 1750 and 1830.⁴ This change was directly related to the main soil divisions within Warwickshire which may be divided into three main groups. Firstly the heavy claylands

1 G.E.Fussell and M.Compton, 'Agricultural adjustments after the Napoleonic Wars, E.H. (1939), p.197.

2 Bearn, op.cit., pp.97-103.

3 The main sources used were J.Wedge, A General View of the Agriculture of Warwick (1794); A.Murray, A General View of the Agriculture of Warwick (1813), A.W.McPherson, Warwickshire, (L.U.S. 1946); M.Evershed, 'Farming of Warwickshire', J.R.A.S.E., XVII, (1881).

4 V.C.H. Warwick, Vol.2, (1908), p.274.

east of a line drawn from Rugby to Stratford; secondly the very productive Avon valley area where deep sandy loams provided the most productive soils; and thirdly the rest of the county where soils were very mixed but were on the lighter side.

18th century enclosures chiefly affected the areas to the east which according to Wedge (1794) were mostly open before 1750.¹ The motivation behind these enclosures was, as in eastern Leicestershire, to extend the pastoral influence, thereby providing the incentives for improved methods of breeding and fattening of both sheep and cattle (and also of course reducing the demand for labour allowing the surplus to go to the expanding areas around Birmingham). By the time the second agricultural reporter, Murray, came along in 1813 the process of enclosure had been completed in the eastern districts but had been extended into the central Avon area and to the various wastelands around the urban parts of the north, such as Sutton Coldfield and Meriden Heath.

Land use had changed dramatically therefore by the early 19th century with the whole county changing to an arable farming basis especially in the central area. Here, the better soils allowed the introduction of the Norfolk system with its mixed sheep/turnip components, which the 1801 crop returns (Fig 3) revealed as dominant in the central and northern areas.² It was the extension of more progressive techniques in this area which really turned the balance in Warwickshire towards corn, and which saw a trend towards larger farms with the consequent economies of scale noted in Nottinghamshire. In

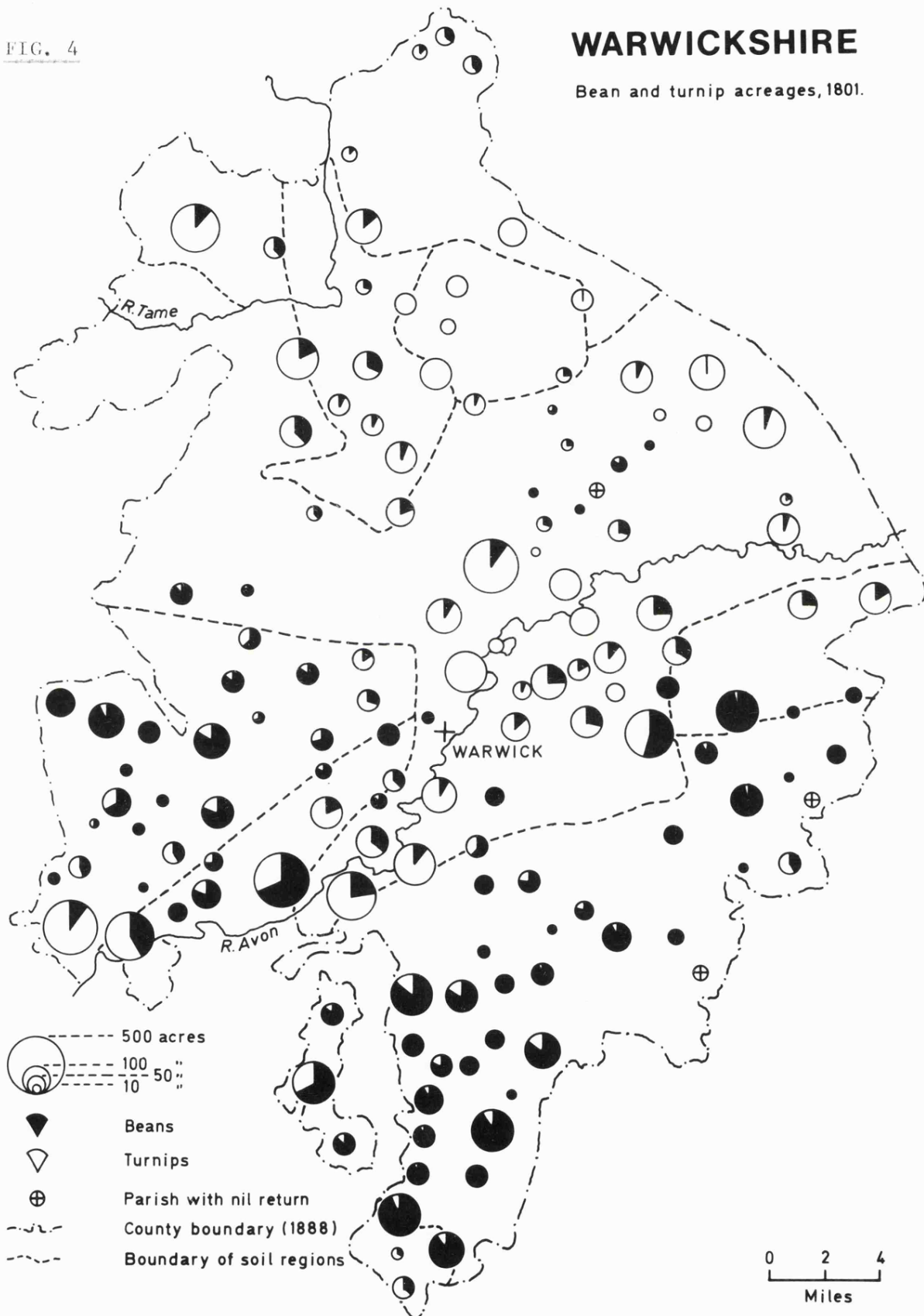
¹ op.cit., p.20.

² R.A.Pelham, 'Agricultural Geography of Warwickshire during the Napoleonic Wars', Trans.Birm.Arch.Soc., Vol.68 (1952), p.96.

FIG. 4

WARWICKSHIRE

Bean and turnip acreages, 1801.



the areas further to the north the influence of the Birmingham market was paramount thus confirming the position of the gentleman graziers that Young and Marshall¹ had mentioned from the 1770s. All along the borders with Leicestershire the livestock and dairying interests thrived with the rapidly expanding market only a few miles to the west being buoyant enough for farmers to expand their livestock interests even in the Napoleonic wars when corn returns might have tempted many into conversion to arable farming.² The areas even nearer to the market saw the increased predominance of vegetable cultivation and market gardening as land values soared and all available waste was enclosed. This left only the eastern claylands as a predominantly pastoral area although the quality of the grazing land varied considerably. The better areas ran alongside the richer pastures of western Northamptonshire, around the parishes of Farnborough and Warmington, whereas areas to the south witnessed a deterioration in quality in the absence of drainage improvements and without the successful cultivation of root crops.³

As in the other midland counties the areas of lighter soils and those under the influence of urban markets did not suffer as badly in the post-1815 depression, as those on the stiffer claylands. Consequently in the vicious circle of falling rents and falling investment in the east, the much needed drainage improvements did not take place on the clay areas, whilst the steadier rents and returns elsewhere, meant that the responsiveness of agriculture in the central and northern parts of the county was sufficient to overcome the

1 A. Young, Northern Towns (1768), iii, p.272; W. Marshall, The Rural Economy of the Midlands (1796), p.81.

2 J.M.Martin, 'Social and Economic Trends in the Rural West Midlands 1785-1825' (Unpublished M.Comm thesis Birmingham, 1960), p.125.

3 Evershed, op.cit., p.481.

worst effects of the depression.

This distinction between light and heavy soils, and its consequences for land use and rural prosperity, has been at the centre of this survey of midland agriculture and Staffordshire¹ is no exception. In essence the differences between the free-draining, light land soils and the heavy claylands marked the incidence of the agricultural revolution, for progress in the lighter soils via the four course rotation of wheat, turnips, barley and clover allowed the development of a more productive mixed farming system. The advantages for the farmer in this mixed system were that he could produce two saleable products, and become a risk averter in some ways, but also that productivity improvement would be cumulative as greencrops allowed more stock to be kept and the dung from the stock produced better cereal yields.² However, the claylands could not share in this process because the moisture levels in the soil made it very difficult to work, compressed the working season and rendered the growth of fodder crops (especially turnips) virtually impossible.³ In addition to this, the only way of resting and cleansing the soil after grain crops was to leave the land fallow thus effectively reducing the area of land available for cultivation and the poor quality of much pastureland permitted only low stocking densities. The costs therefore of these clayland farmers were inflexible and the only real way to improve their position would have been to have spent large sums on drainage. During the post-1815 depression, as has

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- 1 Main sources: W.Pitt, A General View of the Agriculture of Stafford (1808); J. Myers, Staffordshire, (L.U.S. 1945); A.D.M.Phillips, 'A Study of Farming practices and soil types in Staffordshire around 1840', N.S.J.F.S. (1973).
 - 2 E.L.Jones, Agriculture and Economic Growth in England 1650-1815, (1967).
 - 3 Phillips, op.cit., p.43.

already been noted, it was on the claylands that the farmers bore the brunt of the falling grain prices as their costs were difficult to prune quickly, they did not therefore have sufficient capital to drain their land nor did they have the resources to switch the emphasis to the livestock side where prices were holding firmer.¹

This model is naturally somewhat general, given the large range of mixed soils within the light/heavy spectrum, but it does provide a good starting point especially in a county like Staffordshire which according to Caird had two major divisions '...gravelly and sandy soils ... (and) ... a considerable quantity of heavy land ... the proportion between the two is estimated as being two-thirds the former to one-third the latter'.² In fact the county falls into three main parts with outcrops of grit, limestone and mixed soils in the north, a wider area of strong clays in the central part, and a combination of mixed and lighter soils in the south. However, despite these variations, the agrarian regimes which emerged in the 18th century, did reflect the broader categories of heavy land farming in the central parts of eastern and western Staffordshire, with the lighter more mixed system elsewhere (see Fig 4).

The transformation in agriculture by the turn of the 19th century³ had much less to do with the enclosure of open-field areas than in the other midland counties. In fact, Staffordshire was a county of very old enclosures beginning in the 13th century in response to the severe labour shortages, and going through the 16th and 17th centuries,⁴ with the bulk of 18th century

1 E.J.T.Collins and E.L.Jones, 'Sectoral Advance in English Agriculture 1850-80', Ag.H.R. 15 (1967), p.65.

2 Caird, op.cit., p.229.

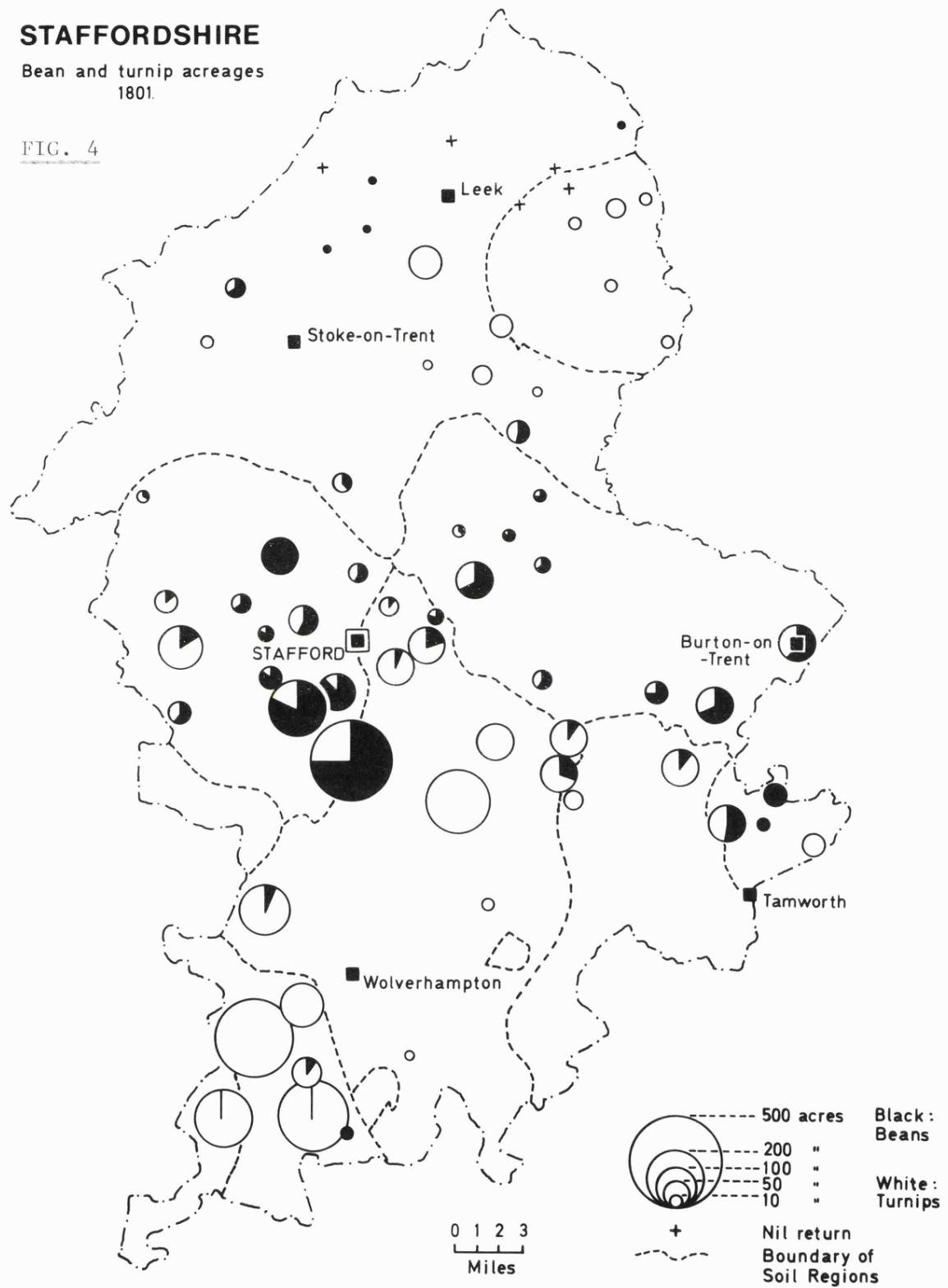
3 V.C.H. Staffs, Vol.1 (1908), p.292.

4 H.R.Thomas, 'The Enclosures of open-fields and Commons in Staffordshire', S.H.C., 1931.

STAFFORDSHIRE

Bean and turnip acreages
1801.

FIG. 4



enclosures relating to commons and waste. In themselves the early enclosures had not really altered the organisation of the farms nor the proportion of larger consolidated units but had produced many amalgamated farms with scattered fields far distant from one another. Rather it was the economic pressures of the late 18th century which supported the logic of fields consolidated into one unit and allowed the advantages of scale to be developed.¹ It was from these years also that extensive areas of waste were brought into cultivation from the Northern moorlands, Needwood Forest, Cannock Chase and Sutton Coldfield.²

The overall picture of agricultural land use as it had developed by the early 19th century seems to fit broadly into the light/heavy model, with the wheat/bean rotations dominating the central clay areas and the turnip husbandry the lighter areas. Wheat had become the main crop on the heavy lands under the stimulus of rising prices, but the continued existence of fallow years and the drainage problems left these areas in deep trouble after 1815 when only the vast accumulation of rent arrears or the willingness of energetic land-owners to spend vast sums improving their lands, permitted the survival of their tenants. Even then, the sheer scale of resources required for such an operation forced the Stafford family, one of the richest in the country, to restrict their expenditure on the tenacious clays of their Lilleshall and Trentham estates.³ Although the future for these heavy lands was said to have lain in grassland farming the extent of their increase in stocking densities was still very limited by the 1830s due to the inflexibility of

1 J.R.Wordie, 'Social Change on the Leveson-Gower Estates 1714-1832', Ec.H.R., XXVII, 4, (1974), pp.599-603.

2 Myers, op.cit., p.636.

3 E.Richards, 'The Leviathan of Wealth in West Midlands Agriculture', Ag.H.R., 22, (1974), pp.97-117.

the soils and the capital costs involved.¹

On the southern light lands the dominance of the Norfolk system was unbroken, whether the emphasis was on grain (especially barley) or livestock (mutton especially for the urban markets in Birmingham and the Black country) the system was sufficiently flexible to respond to changing price incentives. In fact the areas to the south east, around Wolverhampton and the Shropshire borders, tended to have a higher arable content including not only wheat and barley but also potatoes and market garden produce. Whereas in the south western areas the gentleman graziers tended to specialise in the production of fat sheep and cattle, pig meat and milk for the expanding markets of southern Staffordshire and North Warwickshire.²

In the other main area of the county, the far north, the most severe problems concerned the colder climate and the rising rainfall of the grit and limestone moorlands. However the gritstone area did possess the advantages of interdependence with the local mining and textile industries so that the margin of cultivation could be altered fairly quickly without drastic results for incomes and employment. Within the mixed system in these moorland areas it was oats that dominated rotations as the winter foodstuff for store cattle and sheep, but the greater dependence on agriculture in the limestone districts meant that even the expansion of the dairying and livestock interests were insufficient to prevent deeper distress than in the gritstone districts after 1815, given the greater expansion of arable acreage during the Napoleonic wars.³

1 Phillips, *op.cit.*, p.42.

2 Martin, *op.cit.*, p.29; R.W.Sturgess, 'The Response of Agriculture in Staffordshire to price changes in the 19th Century', (Unpublished Ph.D thesis, Manchester 1965), p.19.

3 R.W.Sturgess, 'Agricultural Change in the Staffordshire Moorlands 1780-1850', *N.S.J.F.S.* (1961).

All the advantages therefore in Staffordshire lay with the lighter lands in the southern part of the county where not only were the soils more productive (in terms of crop yields and stocking densities) but they also possessed within a very short distance one of the fastest growing urban food markets in the country and it is hardly surprising therefore that they became the more dynamic sector relative to the more tenacious lands to the north.

IV

Given the land-locked situation of the midland counties it is fairly obvious that any change for the better in the quality of inland transport would have great economic consequences for the region. With the barriers to the carriage of goods overland still overwhelming in the early 18th century coastal shipping remained the most important transport medium when it was linked to the more navigable rivers. The gradual, although hesitant, progress of the economy through the 17th and early 18th centuries had produced a growing interest in the improvement of the water based transport network, with efforts to increase the range and facilities on the rivers and in the ports. At the same time dissatisfaction with the state of the roads, whose upkeep was the responsibility of the individual parishes, had led to the spread of turnpike trusts, at first on the main routes to London but later spreading outwards towards the rest of provincial England.¹ According to Albert the peak era in the development of turnpikes outside the London area came in the years between 1751-72, and although their influence continued as better methods of construction vastly improved the conditions

1 W. Albert, The Turnpike Road System in England 1663-1840 (1972).

of travel on the main roads, their economic impact took second place in the face of competition from artificial waterways, or canals. In the years from the 1770s onwards the widespread construction of canals provided a major step in the emergence of the national economy, as opposed to a series of poorly connected local economies - a process virtually completed by the railway developments from the 1830s.

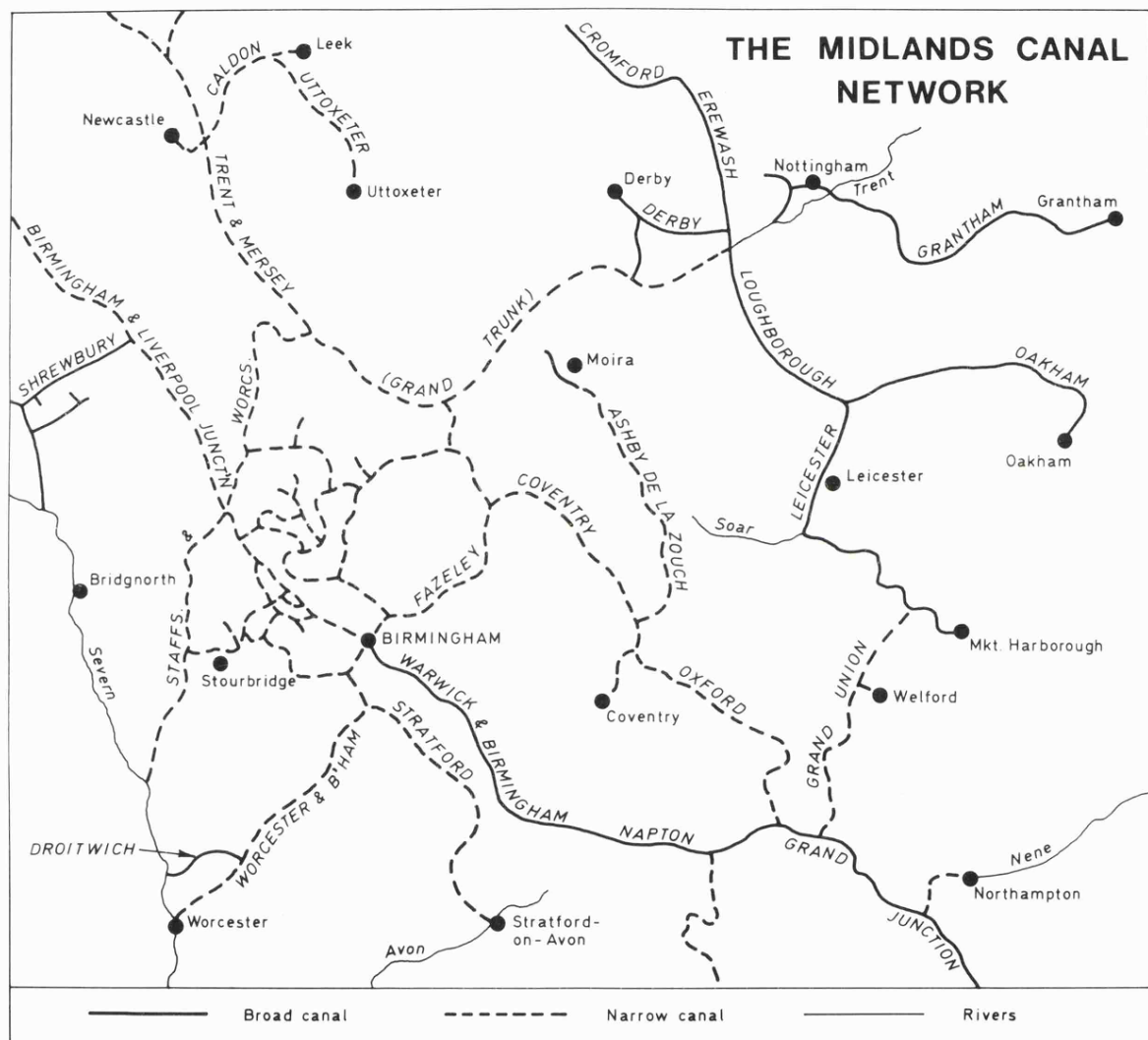
As this survey of the midland economy ends in 1834 the major emphasis in this review of transport developments will be on canals, not so much because of the unimportance of rivers and roads but because of the enormous changes that canals produced in the midlands - especially in the west. It was the construction of canals which catalysed the mineral resources and craft traditions of the west midlands into the industrialised phenomenon of Birmingham and the Black country; it was the canals which permitted the rapid expansion of the potteries; and it was the growth of the canal network which played a major role in confirming the economic pre-eminence of Nottingham, Leicester and Northampton in the eastern midlands.

In the pre-canal era the main problem in the west midlands was that the bulk of South Staffordshire and North Warwickshire lay between the navigable parts of the Severn and Trent river systems.¹ Although the role of the Severn system in the rise of the metal trades was important during the pre-industrial era the much more intensive demands which came in the later 18th century would have been held up by the serious problems of flood and drought in the upper limits of the river.² The influence of the River Trent

1 V.C.H.Stafford Vol.II (1967), p.285.

2 W.H.B.Court, The Rise of Midland Industries 1600-1838 (1938), p.7.

FIG. 5



in the west midlands was also limited by the navigation problems beyond Burton, and in the north the progress of the potteries was limited by transport problems despite improvements to the Weaver.¹ The River Nene was navigable only to the north of Northampton itself and even then was frequently subject to problems of drought and flooding.² And the condition of the Soar in Leicestershire was little better until the improvements of the 1770s.³ In fact it was only in Nottinghamshire that river transport played any major part in the pre-industrial economy. J.D.Chambers has emphasised the crucial role of the Trent⁴ as an agent of economic change in exchanging the valuable minerals of Derbyshire, the surplus corn of eastern Staffordshire for imports from the Baltic area and groceries from the north. This central role did not diminish at all from the mid-18th century onwards and the Trent acted as a central focus for pre-railway transport in the county as the canals were very much feeder links to this great river system.

Thus only the single example of the Trent in Nottinghamshire provided an adequate form of natural water transport in the midlands and hence interest in artificial waterways was bound to be strong with very significant consequences as the latter part of this section will show. In contrast, the evolution of the road system was much slower and tended to lag behind the expansion of demand, which is not to belittle the progress made therein but to emphasise the rapid expansion in the need for an efficient system of

1 A.L.Thomas, 'Transport developments and the pottery industry in 18th Century', S.H.C. (1934).

2 Donaldson, op.cit., p.232.

3 T.J.Chandler, 'The Canals of Leicester', E.M.G., 10 (1958), p.27.

4 Vale of Trent, op.cit., p.5.

inland transportation, especially for heavy and bulky goods. It was the tremendous increase in the need to move these bulky goods, such as coal and metal products, in addition to the growth in more traditional traffic which placed intolerable burdens on road traffic and which produced the redoubtable and universal condemnation of road conditions that prevailed in the later 18th century. For example, turnpike activity was widespread in Northamptonshire in the 18th century as increased numbers of cattle were driven through the county, but these road improvements were barely able to cope with existing traffic let alone the increase in movements of coal to Northampton itself.¹ Equally the older roads of the area between Birmingham and the Black country severely restricted the scope of industrial expansion in this area of difficult terrain² and the needs of potters for smooth transport of their fragile output was hardly met by their '... infernal roads'.³ To sum up therefore, the turnpikes that were extended in the 18th century varied very much in quality and their standards of repair were often very conservative;⁴ they were unable to provide an efficient system for the transportation of the traditional, high cost, commodities let alone the low cost, bulky goods which became so important in the late 18th century.

The main changes in the Leicestershire transport system after 1750 tended to confirm the dominance of Leicester in its emergence from the decayed state of the mid 17th century;⁵ the growth of its central marketing functions was underlined by the turnpike trusts, but its industrial position was magnified by the building of canals, the first and most important of which

1 Steane, op.cit., p.258.

2 Wise (BA), op.cit., p.183.

3 A.L.Thomas, op.cit., p.95.

4 Albert, passim. Ch.7.

5 Pye, op.cit., p.285.

was the Soar navigation. This provided a classic example of the role of coal as a motive force in the building of canals, as the new system, completed in 1778, linked the Leicester area with the coalfields of South Derbyshire in such an efficient way as to undercut the county's own coal producers whose own venture, the Charnwood Forest Canal (completed in 1794) was a much more difficult project to construct and was therefore more costly.¹ The transport of coal dominated this traffic, at first going by canal to Loughborough and then by road to Leicester, Rutland and Northamptonshire as the local coal owners blocked the transport of coal through to Leicester until their own canal opened in 1794. In terms of direction the major traffic flows were southwards and provided a good reason for attempts to extend the system further to meet the Grand Junction canal in Northamptonshire. After many constructional problems this network was completed in 1814 when the Grand Union completed the link from London to Leicester as one of the major national waterways, with local significance in the movement of iron and coal southwards and linen, flax and timber northwards from Northamptonshire to Derbyshire.

The other canals in Leicestershire were not nearly as important as this trunk route, but a link was forged with the agricultural areas of the Melton district by the Wreak navigation (1800) and Oakham canal (1803) although uncertainty over the water levels in the former and the restricted agricultural economy of the area east of Melton reduced the impact of the network. Another system in the far west was projected to link the Trent to the Coventry area via the Ashby canal and was completed after ten years of construction in 1804 but its impact was also limited, this time because of the failure to link up with the Trent after travelling problems in an area subject to mining

1 Chandler, op.cit., p.29.

subsidence north of Ashby. The only important result of this project was that Hinckley became a chief reception and distribution centre when Pickfords established their main wharf in the town.¹

It was therefore the main north-south waterway which provided the most important route in the county by linking the Derbyshire and Nottinghamshire coalfields with the expanding industrial and domestic demand to the south (although this tended to cripple Leicestershire's own coal areas). This system greatly expanded the market for the products of the area's hosiery industry and contributed to the vast expansion of the industry in the central parts of the county. However the potential for the southern parts of the network were limited by the costly and belated completion of the system which had little time to develop before the introduction of railways.

This southern extension was much more important to Northampton once a branch had been established from the town via the Blisworth tunnel in 1815. Prior to this link the transport situation in the county had been parlous, given the severe difficulties of movement along the River Nene and the increased wear and tear on the road system of the extensive cattle drives. Despite the growth of turnpikes, the road system could not cope with the growth in the numbers of cattle being fattened in the county on their way to Smithfield, and the greater movements of bulky goods, especially coal.² Interest in water carriage was first shown in southern areas under the influence of the Oxford canal (completed in 1790) and pressure thereafter came for a link between Northampton and the national canal network.³ This link, as shown above,

1 Ibid., p.36.

2 Donaldson (1794), op.cit., p.48.

3 Pitt (1809), op.cit., p.112.

was finally completed in 1815 and '... proved a great benefit to the town...' ¹ in particular for the shoe industry but also for the general growth of the town by permitting an extensive building programme. But the sparsity of manufacturing activity outside Northampton itself provided little incentive to extend the canal network throughout the rest of the county especially in the depressed woollen sector around Kettering.

The crucial role of the River Trent in the Nottinghamshire transport system has already been noted and the most important changes in the second half of the 18th century relate to improvements in the river itself once the Trent-Mersey link had been established in 1777 joining the whole of Staffordshire with the Humber for the first time. Other parts of the system tended to act as feeder links to this central focus, particularly in linking Nottingham itself with the Derbyshire mining area through the Erewash canal (1779) and the Nottingham canal (1796) ensuring speedy transport of the much-needed coal supplies. The only other important canal outside the Nottingham area was that linking Chesterfield and the Trent in the north of the county completed in 1777. This opened up the mineral interests in the Worksop area to outside markets and traded upstream in coal, lead, stone and cast metals. ² A much less important link in the south was the Grantham canal which joined Nottingham and the agricultural areas of the Vale of Belvoir in 1797, but like the Oakham canal in Leicestershire it was of little real importance given its main role in supplying coal to Grantham and the surrounding villages. In return from this area of meagre agricultural production ³ it carried corn, malt and wool.

1 P.P. (Lords), 1831-2, cccxi (1831), p.63.

2 Lowe (1798), op.cit., p.186; K.C.Edwards (Ed) Nottingham and its Region, (1966), Ch.xix.

3 See above p.19.

Two main features therefore dominated the transport network, firstly the town of Nottingham with its enormous fuel demands and secondly the location of the Trent as the main artery of carriage; both features tending to concentrate economic activity even more on the county town as they had done in Leicestershire and Northamptonshire.

In contrast, the development of canals in the West Midlands '... effected a transformation of the geography of the district ...'¹ as the growing trade of the central zone was being held back by the scarcity of navigable water and the deterioration of road surfaces under the pressure of such heavy goods. A glance at the map of the midlands canal network (fig.5) will indicate the much greater density of canals in the west given its rapid industrial expansion and its lack of alternative transport. There was, according to Pitt² '... no county better accommodated with artificial canals which have much promoted the rapid expansion of Birmingham and the Potteries'. The breakthrough which canals permitted was so great that it outweighed the constructional problems encountered in this district of high elevation so that geographical obstacles to the growing economy of this area were lowered considerably.

It was in the northern area that the first real breakthrough came with proposals to link the Mersey and the Trent under pressure from potters, Liverpool merchants and local aristocrats. The transport problems of the pottery industry were particularly severe as they needed facilities for bulky inward transport of raw materials such as clay, flint and salt, but also a fairly efficient outward transit for their fragile products. There

1 Court, op.cit., p.12.

2 Op.cit., p.229.

was a paucity of navigable rivers in the area and road surfaces were poor given their clay subsoil, which, if it was free from mud, was not made more passable by the frequency with which some potters would dig their clay from the highways!¹ Despite the extensive development of turnpikes throughout Staffordshire the increasing traffic worsened road surfaces and led to the search for alternatives to the overland routes to the Mersey, Severn and Trent (thence to Liverpool, Bristol and Hull for export). Surveys began in 1755 to construct a way of bridging the gap between the Mersey and the Trent, but were slow to develop until the fuller impact of the Bridgewater canal was appreciated. Actual construction began in 1766 and was completed eleven years later when the cost per ton of moving goods from Liverpool to Etruria had fallen by 75% in addition to the avenues opened to the east via the Trent to the Humber. This single project therefore opened large areas of the north, central parts of the midlands to outside influences and with the link to the Severn having opened in 1772 the three main exporting centres for the pottery industry were now linked together.

It was the Staffordshire-Worcestershire canal which linked the Trent at Haywood (near Stafford) to the Severn at Stourport and this was in operation by 1772 providing an outlet to the south west for pottery, coal and the products of the Birmingham ironwork industries. The problems of access to coal and raw material supplies was causing concern in these latter industries by the 1760s such that a canal was projected to link up with the best local colliery district around Wolverhampton. Work began in 1768 and within four years the canal had been completed as far as Aldersley, some miles beyond Wolverhampton where it joined the Staffordshire-Worcester canal, thus opening

1 A.L.Thomas, op.cit., p.36.

the Birmingham district to the export potential of the Severn as well as providing a more certain, and cheaper supply of materials from the mines and furnaces of Bilston and Wednesbury.¹ Once this vital link had been forged between the initial stage of manufacturing iron products, and the various processing sectors both areas proceeded to grow quickly as the canal itself became a focus for the location of new foundries, rolling mills and factories so that '... ultimately there came to be a continuous line of factories along the waterway from Birmingham, through Smethwick, Oldbury, Tipton Green and Bilston to Wolverhampton'.² The mutual benefits from these canal developments were so evident that branches, and extensions proliferated to produce '... the densest canal network of any open in the county'.³

Thus by the early 1770s the west midlands transport network had been transformed by gaining direct links with Liverpool, Bristol and Hull; but the other arm of the transport cross⁴ to London, had to wait another 20 years. This connection was planned from 1768 to skirt the boundary of the east and west midlands along the borders of Warwickshire, Staffordshire and Leicestershire from the Trent-Mersey canal, via Coventry and Oxford to London. However, local rivalries and the problems of construction delayed the opening of the route to London until 1790 by which time an alternative route via Birmingham and Warwick had been started and this was opened in 1800 meeting the Oxford canal at Napton.⁵ This completed the four elements in the national canal network which centred on the Midlands, providing the industries of the area with access to all the major markets and ports. There were many other projects such as the canal from Wolverhampton to the Trent (Wyrley to Essington

1 Wise, Birmingham, op.cit., p.188.

2 G.C.Allen, The Industrial Development of Birmingham (1929), p.31.

3 Wise (B.A.), p.232.

4 R.A.Pelham, 'The Worcester-Birmingham Canal', U.B.H.J., V, (1955-6), p.81.

completed 1798) which ran across an underdeveloped part of eastern Staffordshire and had many water level problems; the Stratford canal which was not completed until 1816 and created little real impact in the rural areas of south Warwickshire; and the direct canal from Birmingham to Liverpool which opened in 1835 just as railway development was starting and therefore was almost obsolete.¹ But the most important elements in the canal system of the west midlands were the main throughroutes via the Trent-Mersey, the Staffordshire-Worcestershire, the Birmingham canals and the Oxford and Grand Junction links to the south east. It was these improvements in the transport system which cemented the realignment of the west midlands economy towards the industrial areas around Birmingham, the Black country and the potteries.

V

One of the drawbacks to discussing industrial developments in a specific area or region, is that concentration on a few of the larger industries may give an impression of total dependence, for income and employment, on these sectors. This is particularly the case with the midlands in the 18th and 19th centuries when the fullest effects of urbanisation and large scale factory organisations had yet to be felt. In fact, the towns and villages possessed an enormous range of employment from the multifarious local crafts (such as wheelwrights, blacksmiths, tailors, shoemakers, etc.) through the processing industries (such as malting, brewing or milling) to local service trades (such as shops, carriers or attorneys).² The elements of self-sufficiency wherein these village or town workers supplied their own areas were still

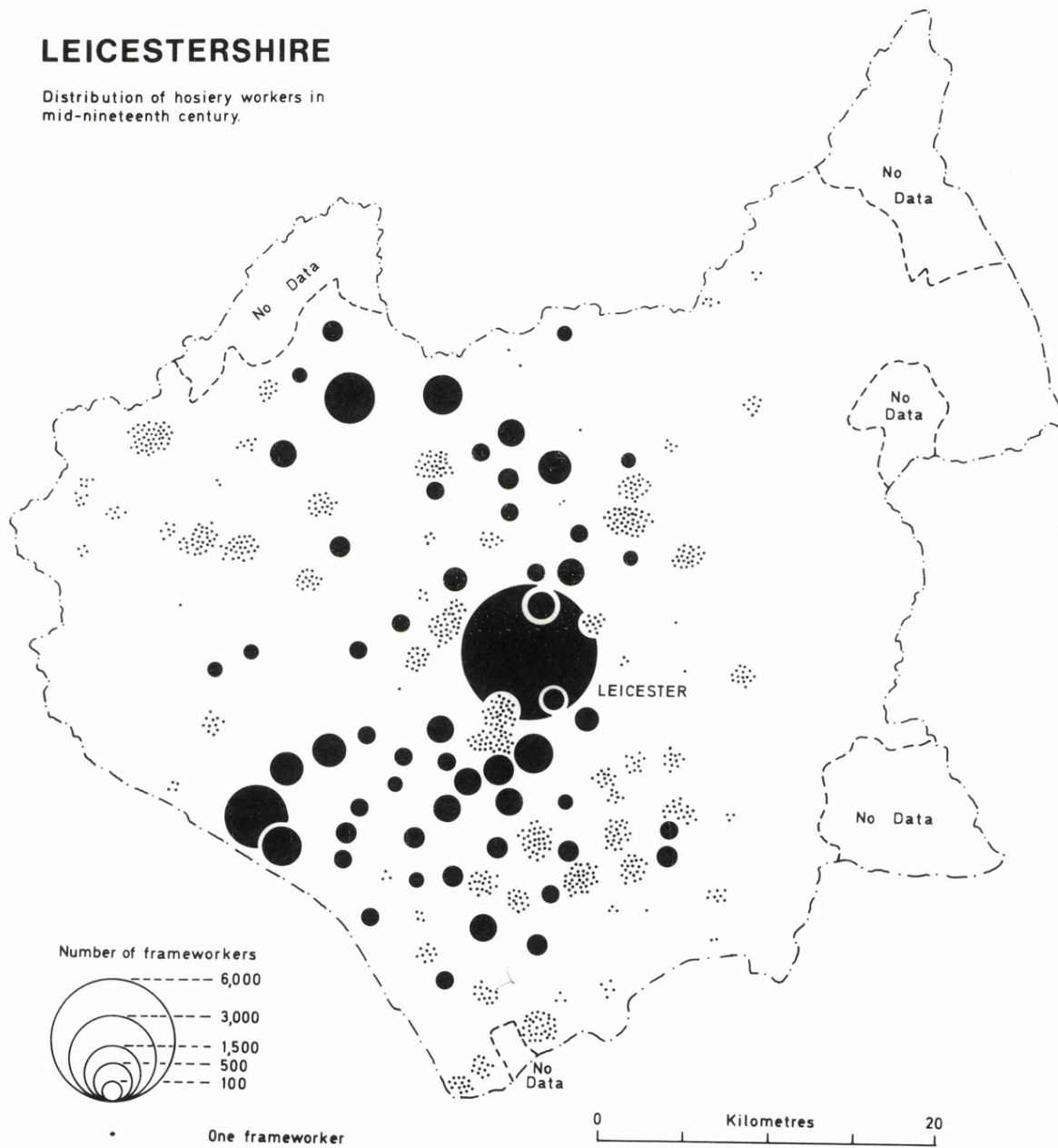
1 C. Hadfield, The Canals of the West Midlands (1966), p.188.

2 A. Everitt, Ways and Means in Local History (1971), p.42.

FIG. 6

LEICESTERSHIRE

Distribution of hosiery workers in
mid-nineteenth century.



strongly in evidence until the later 19th century when the railways had created national markets and the extension of mass production yielded cheaper goods and services. Whilst accepting this variety of employment opportunities the object of this section is to outline the progress of some of the more important industries in the late 18th and early 19th centuries with the aim of establishing a firmer background to the labour market against which the subsequent chapters on wages may be judged.

There is little doubt that hosiery was the most important source of industrial employment for large numbers of people in the east midlands, but particularly in a belt from southern Leicestershire northwards through Leicester, Loughborough, Nottingham and on into eastern Derbyshire (see Fig. 6). The word hosiery had become, by the early 19th century, a generic term used to include the production of shirts, gloves and cravats as well as stockings,¹ and that there were also a wide variety of fabrics including '... worsted, lambs wool, cotton thread, silk and mixtures thereof ...'² However, the basic element which characterised the industry was that the yarn was knitted on frames rather than the more normal process of weaving.

The expansion of the industry in the east Midlands was a late development, as the control exercised by the company of Framework knitters had restricted the growth of the industry to the London area after the invention of the frame by William Lee in 1589. Although there is some evidence to suggest that frames were introduced in Hinckley around 1640³ it was the later 17th and early 18th centuries that saw the share of the midlands in the national total of frames

1 Pye, op.cit., p.365.

2 J. Curtis, A Topographical History of Leicestershire (1831), p.xii.

3 Pye, op.cit., p.363.

rise quickly from 20% in 1664 to 75% in 1753.¹ Undoubtedly one of the attractions of this area was lower labour costs, but equally important must have been the freedom from corporate regulations as demand began to expand for less high quality stockings rather than those produced for the luxury silk market in London.² The other advantages of the area lay in their proximity to raw materials once the dependence on high quality imported silk had been broken, and some rough specialisation emerged for Leicestershire in woollen and worsted hosiery, and for Nottinghamshire and Derbyshire in finer quality cotton and silk respectively.

In terms of organisation, the industry was organised along the classic lines of the domestic system with merchant hosiers supplying the materials but also providing the frame itself for which he charged a weekly rent. These very low entry costs, plus the relative ease with which the frame could be assimilated into small cottages and the skills quickly learned, meant that the industry spread throughout the area as an adjunct to agricultural employment especially in the larger open villages.³ It was in many of these villages that the conversion of land use towards pastoral farming created surplus labour and thus created ideal conditions for the spread of knitting.⁴ Hosiery was therefore a handicraft industry, with a technology which had hardly changed for over two centuries and where the positive supply response was highly elastic. It was precisely this elasticity which brought more and more labour into the industry in the face of rising demand in the later 18th century, but it was also this expansion which created the gross overcapacity and depression in the post war years when demand was much less buoyant.

1 Dury, op.cit., p.255.

2 Pye, op.cit., p.365; Mills, op.cit., p.226.

3 Mills, op.cit., p.221; W.A.Jenkins 'Economic and Social History of Leicester 1660-1835' (Unpublished M.A. thesis London 1952), p.75.

4 See for example W.G.Hoskins, The Midland Peasant (1957), Ch.X.

These post-1815 years were ones of '... almost perpetual depression...' ¹ as an exceptionally large number of independent producers competed in a market subject to the vagaries of fashion and severe French and Saxon competition. Not that the industry had ever been a source of widespread prosperity, but at least in the years from the 1780s to the end of the French Wars the rewards had at worst remained constant, whereas thereafter earnings were reduced by about half as the hours worked rose by at least the same amount. ² In addition the labour force were concerned to point out many non-wage grievances which involved truck payments, the practice of work spreading to ensure that hosiers at least got their frame rents, and the various arbitrary deductions made against earnings using excuses of inferior quality products. Therefore the rapid growth of the industry in very small units, the expansion of population in the urban centres and larger villages and the post-war agrarian depression led to an orgy of self-destruction amongst producers as the hosiery industry was turned into a '... repository for the un- and underemployed'. ³

The only response that came from the hosiers to these problems of constantly changing fashions and foreign competition was to encourage the expansion of 'cut-up' stockings, which were made by stitching together sections cut from a large piece of knitwear rather than articles fashioned in one piece. ⁴ Although this was probably an effort to modify production and create new markets, it merely led to disputes about inferior goods ruining the rest of the market, and brought the wrath of the Luddites down on the heads of the

1 M.I.Thomis, Politics and Society in Nottingham (1964), p.26.

2 Ibid., p.17.

3 Chambers, Vale of Trent, p.59.

4 Thomis, op.cit., p.30.

hosiers concerned.¹ The real solution was to reorganise the industry into a factory system, producing a better quality, more flexible product, but because of the idyllic attachment of small producers to their independence, the attractions of frame renting for hosiers and the ease with which labour costs could be pressurised downwards this improvement in technology was delayed until the mid-19th century, by which time the handicraft section had been extinguished by depression in a welter of social and industrial unrest.

Thus the rise and fall of the domestic hosiery industry in the east midlands gives us some idea of how quickly the demand for employment from the rapidly growing workforce had outstripped the ability of the regional economy to provide sufficient jobs. The results of this unbalance were reflected in the rapidly rising poor rates during the period 1815-34, and the backlash of political unrest which was particularly shown in Nottingham and Leicester where well over half of the labour forces were engaged in the hosiery trade.²

Another branch of the clothing industry in the midlands which exhibited some similar tendencies was that of ribbon weaving in Coventry and the villages immediately to the north. Here weaving of silk ribbons had emerged from older woollen trades and dominated the industry of Coventry from the mid-18th to mid-19th centuries.³ Like the hosiery industry the ribbon weavers operated on a small scale in their own homes with their loom upstairs in the 'top shop', and there was a proliferation of these producers working on materials supplied by local factors of the larger silk merchants. In addition the prosperity of the later war years, especially the so-called 'big purl' time between 1813-15

1 ~ Ibid., p.79.

2 For a deeper analysis of this unrest see E.P.Thompson, The Making of the English Working Class (1963); and A.Temple Patterson, Radical Leicester (1954).

3 V.C.H. Warwick, Vol.VIII (1969), p.170.

had seen the entry of large numbers into the trade. But there were also differences between this region and the hosiery areas to the north east, especially in the degree of control exercised by the smaller journeymen over the trade which thus delayed the kind of cut-throat competition which dominated the hosiery trade after 1815.

The origins of this ability to regulate their trade went back to the days of the craft guilds, but was supplemented by the more closely defined fabric and area of production. Within the silk trades Coventry specialised in producing lower class fancy ribbons, leaving the plain silk ribbons to the Derby/Leek area and the broader silk fabrics to the Macclesfield and Spitalfields districts; as far as the area of production was concerned this tended to be limited to Coventry itself with a few villages to the north of the city providing any extra output that may have been needed.¹ Thus the Coventry area did not experience the internal competition which was seen in the hosiery district between woollen, worsted, cotton and silk stockings; nor did they have to control the activities of producers over an area as large as that stretching from Hinckley to Sutton in Ashfield in the hosiery trade. Even the political structure was different in Coventry where the extended franchise gave the journeymen more power and thus limited the role of violent protest in the difficult years after 1815.

The whole post-1815 depression was, at first, a more orderly affair in Coventry as the marginal weavers in the mining areas to the north were laid off first, and as attempts were made to enforce the attachment to price lists as a way of preserving 'honourable dealings' between masters and men.²

1 Prest, op.cit., p.44.

2 Ibid., p.79.

Ultimately however this period proved to be the Indian summer of the industry as the rapid growth of smaller masters created difficulties in the regulation of the trade, as the increased use of machinery created a barrier between the operatives based in factories and those still based in their homes, and as the full force of laissez-faire opinion was brought against the whole mercantilist framework of regulations. By the 1830s therefore Coventry began to experience the bitterness that has been noted in the hosiery trade as an overexpanded industry was forced to adjust to the realities of severe foreign competition.

As the rising poor rates and unemployment of the years after 1815 indicate, the other sources of industrial employment in the east midlands were limited. In Nottinghamshire the more conventional cotton textile mills in the west of the county from Hucknall to Worksop prospered during the 18th century when water power was still vital, but were strikingly reduced as steam became the motive force and as competition from Lancashire became more intense.¹ The only other branch of the clothing industry of any importance was the lace trade which was the second largest employer of labour in Nottingham after hosiery. Until the early 19th century the lace industry was also essentially an outwork trade subject to the same pressures as hosiery, but the greater pace of technical change in lace (particularly Heathcoat's bobbin-net process) transformed the industry into a factory based organisation.² Although earnings on the whole were higher in lace (despite the severe fluctuations in trade) the numbers employed were much smaller, and were replacing those engaged in the older domestic methods - not only

1 Dury, op.cit., p.136.

2 R.A.Church and S.D.Chapman, 'Gravener Hensen and the making of the English Working Class' in Land Labour and Population in the Industrial Revolution, Ed. G.E.Mingay and E.L.Jones (1967), p.132.

in Nottinghamshire but also in Buckinghamshire, Bedfordshire and Northamptonshire.¹ The lace trade continued to grow but its real impact on the local economy did not come until the second half of the 19th century when the 'Leavers' process set the foundation for patterned lace.

In coal mining the main developments in the east midlands came much later in the 19th century although Wallis has noted² the existence of about 20 pits in the south western corner of Nottinghamshire in 1811. This total had scarcely altered by 1854 and thus the influence of mining outside the immediate vicinity of the Erewash valley must have been limited, except in that it would provide employment for some of the surplus labour in this very poor pastoral district. It was really in the post-railway era that this coalfield was opened up to wider markets³ relative certainly to the coastally situated fields of the north east, or those in the Black country. In Leicestershire too it was the coming of the railway that finally removed the problems of inaccessibility which had faced the Charnwood mining district, and which the canals had failed to solve.⁴

In many ways Northamptonshire represented the classic pre-industrial county with the undoubted underlying importance of agriculture, the existence of a small but fairly prosperous indigenous woollen industry around Kettering and Rothwell, the buoyancy of several market towns acting as local centres

1 Dury, op.cit., p.161.

2 'Nottinghamshire in the 19th Century', Geographical Journal (1914), p.51.

3 Dury, op.cit., p.170.

4 See above, p.43.

at Daventry, Brackley, Raunds, Towcester and Thrapston, and a thriving county town which acted as the service and distribution centre for furniture, shoes, clothes, etc.¹ The main elements which changed this picture have already been sketched² but in general they involved the increasing predominance of Northampton as one of its service functions (shoemaking) expanded into a national industry, and the decay of both the older woollen centres and the influence of the market towns.

Although the importance of the shoe industry had been growing steadily in the county during the 18th century, it was from the early years of the 19th century that growth was most rapid. Of the more immediate factors responsible for this acceleration the problems caused by the strikes of London shoemakers in 1809 and 1812-13 were probably vital, as the ensuing production difficulties, given the governments military contracts and rising domestic demand for a low priced product, forced merchants to look elsewhere for output.³ At about the same time the paucity of water transport in the area was being corrected by the completion of the link to the Grand Junction canal of Bilsworth in 1815.⁴ Further progress was stimulated by the deepening depression in agriculture in these eastern arable areas which released low cost surplus labour to the expanding footwear industry and allowed Northampton to become a '... one industry town ... employing 80% of household heads from villages within a twenty mile radius by 1851'.⁵

1 Everitt, op.cit., p.28.

2 See above, p.9.

3 R.A.Church, 'Labour Supply and Innovation 1800-60: The Boot and Shoe Industry', Business History, XII, No.1, (1970), p.27.

4 See above, p.37.

5 Foster, op.cit., p.76.

In many ways the organisation of the industry was ideally suited to the economy of this area in providing family employment within the domestic system.¹ From a central warehouse in Northampton the partially processed product was sent out to the villages so that the work of the 'clicker' (who cut the upper components of the shoe out of the hide) might be bound or closed by the men, stitched and the eyelets inserted by the women and children. This had the dual advantage of providing employment in periods when work on the land was slack, and keeping workers scattered and unorganised in rural areas so that production costs could be kept at very low levels.² These lower labour costs in a reasonably accessible county, together with the low capital costs of a domestic handicraft system, appear to have been vital in the growth of the industry - more vital than the oft-quoted local leather supplies which were quite small relative to the leather obtained from distant sources.³ In fact the advantages of this low cost handicraft system, resting on family employment in surrounding villages, were so great that mechanisation and factory production were successfully resisted in this district until the 1850s.

Spatially, the main spread of the footwear industry was concentrated on Northampton and its immediate area (see Fig 7) until the second half of the century, when other areas of the county began to increase their share of output sharply. One of the more important reasons for the failure of the industry to spread outside Northampton was the existence of other industries, especially in the Ise valley, which might have competed for labour and so

1 V.A.Hatley, 'Some Aspects of Northamptonshire History 1815-51', N.P.&.P. (1965), p.246.

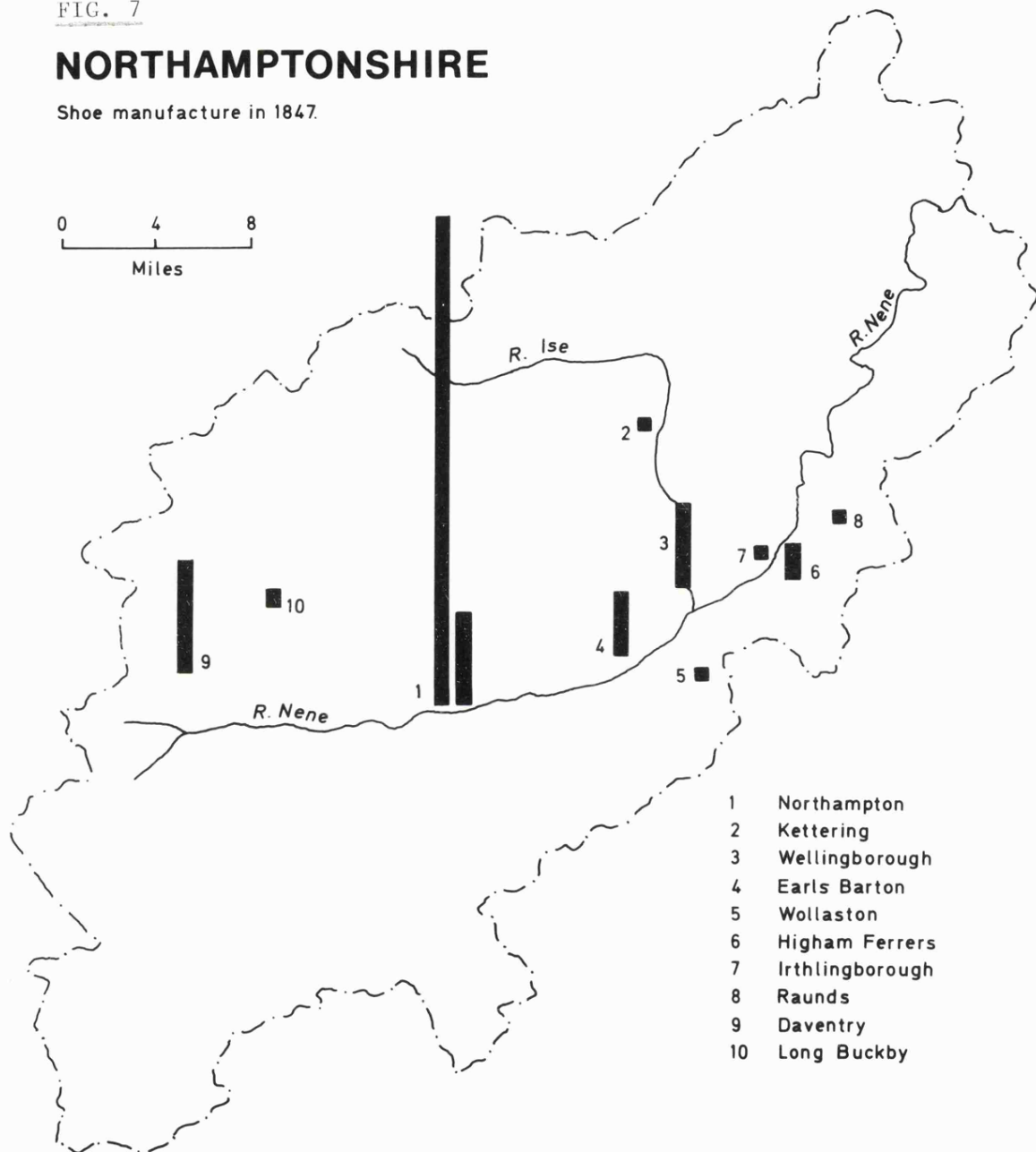
2 P.R.Mounfield, 'The Footwear Industry of the East Midlands: III Northamptonshire 1700-1911', E.M.G. 24, (1965), p.442.

3 Ibid., p.441.

FIG. 7

NORTHAMPTONSHIRE

Shoe manufacture in 1847.



raised production costs. In fact, these industries were in the process of severe decline and it was their extinction which allowed the footwear industry to spread further afield in the second half of the 19th century.

The woollen industry in the Kettering area had benefitted originally from the local supplies of long staple wool, and the plentiful supplies of water power in the area. Its progress had been slow until the early 18th century but had accelerated particularly in the pre-canal era from the 1740s to the 1770s when the extended network of village producers responded quickly to the growth of demand.¹ But the spectacular technical and transport changes in the Northern coalfield areas meant the inevitable decline of this area although its death was slow as shown in the 1821 census report for Kettering which listed nearly a half of the population as paupers and commented on the lack of alternative employment to replace the woollen manufacturing in this pastoral farming area.² By the 1830s the permanency of this depression was recognised and footwear entrepreneurs began to move into the area in order to use its capital and labour potential.³

By the end of the 1830s therefore the role of Northampton as a marketing and administrative centre had continued to grow to the exclusion of the smaller market towns, and it had added the shoe industry, which directly employed 35% of its inhabitants and with an even higher proportion of those in the surrounding villages. Although this resulted in a large proportion of non-agricultural workers they were for the most part totally unorganised and they '... retained very strong links with the rural areas ...'⁴

1 H.A.Randall, 'The Kettering Worsteds Industry in the 18th Century', N.P.& P., Vol.IV (1970-1), p.316.

2 J.M.Steane, 'The Poor in Rothwell', N.P.& P., Vol.III (1968), p.146.

3 Manfield, op.cit., p.439.

4 Foster, op.cit., p.103.

In the West Midlands the most important change was in the spatial realignment of the economy towards Birmingham and the Black Country away from the lowland towns of Lichfield, Stafford, Warwick and Coventry.¹ Industrially, the area developed a rough division between the metal producers on the coalfields of South Staffordshire, and the trades in Birmingham itself which assembled or finished the partially processed materials into metal wares. The presence of abundant raw materials in the Black Country (an area of about 100 square miles bounded by the towns of Walsall, Wolverhampton and Stowbridge with its heartland on an axis from Dudley to Wednesbury) especially the famous thirty foot seam of thick coal had ensured the developement of an iron industry in the area. But until the mid-18th century the major constraint on further progress was the problem of charcoal supplies which limited the ability of the industry to supply the local slitting mills and forges and who had to import most of their pig iron via the River Severn.² It was the technical progress in coke smelting and steam power in the later 18th century which radically altered the scale of production and produced a major impetus to the search for better transport facilities.³ The falling costs which followed the transport improvements and the nearness of the large Birmingham market enabled the South Staffordshire iron industry to supply 20% of the nation's output by 1806 and 35% by 1830⁴ although the organisation of the industry was still scattered in small production units throughout the area.⁵

1 See above, p.8.

2 Wise, (B.A.), p.162.

3 See above, p.39.

4 T.J.Raybould, The Economic Emergence of the Black Country (Newton Abbot 1973), p.132.

5 Allen, op.cit., p.38.

Progress in the production of local coal, ironstone and limestone was intimately linked to the iron industry whose importance declined steadily after the 1830s as the materials were '... wastefully worked out ...'¹ and the region turned to engineering as its staple industry.

Working conditions in the Black Country were never easy given the nature of the work and fluctuations in employment generated by dependence on the derived demand of the Birmingham trades, where the vagaries of fashion (for jewellery, toys and buttons) or war (for arms) produced much short-time working and unemployment.² In the absence of employment opportunities for the family, the problems of obtaining land for allotments and the fluctuations in earnings, it is hardly surprising that '... there was a shortage of miners needing recruitment drives in South Wales and Shropshire in the 1830s'.³

Many aspects of the growth of Birmingham have already been mentioned including its freedom from guild regulations, its nearness to raw materials supplies, its improved accessibility following canal construction and its marketing and distributive functions, but in industrial terms, it was its established reputation as a centre of skilled craftsmen which allowed the expanded output of the iron industry to be used in the metalware trades.⁴ From a wide range of interests in leather, saddlery, guns, swords and buckles, Birmingham metal craftsmen began to capture wider markets in England and in the colonies in the third quarter of the 18th century as the growth in the size and number of workshops went hand in hand with quality improvements in

1 G.J.Barnsby, 'The Standard of Living in the Black Country during the 19th Century', Ec.H.R., XXIV, No.2 (1971), p.220.

2 Ibid., p.221.

3 Raybould, op.cit., p.187.

4 Allen, op.cit., p.28.

an effort to correct the inferior image of 'Brummagem pretences'.¹ These improvements meant the expansion of the jewellery trade, the diversification of button manufacture from metal into pearl and covered, the establishment of specialised brass trades, coach painting and cabinet dressing.² As far as markets were concerned the problems of wartime trade meant a realignment towards the home market and even after 1815 industrial changes maintained this emphasis by developing along lines laid down earlier rather than returning to the provision of guns and buttons to overseas markets. For example out of the brass trades came the production of boilers, copper sheeting, gaslights and water pipes; the metal trades were extended into wire ropes, steam engines and bedsteads; whilst the jewellery trades moved into electro-plating and the extended use of gold rather than silver.³

The organisation of the metal trades has traditionally been used as the contrast to the factory production noted in the northern textile areas. In this sense the development of small workshops using highly skilled artisans was thought to have given Birmingham the advantage of a diversified industrial structure which would be less subject to prolonged depression.⁴ A priori reasoning has often extended these notions into comments about the lack of technical change in the metal trades and the low entry costs of firms into the industry giving the opportunity for upward social mobility and therefore less problems of social discontent. But recent work by E.P.Duggan

1 Wise (B.A.), op.cit., p.173.

2 Allen, op.cit., p.32.

3 Wise (B.A.), op.cit., p.213.

4 E.g. A.Briggs, Victorian Cities (1968), p.62.

has modified this picture and suggested that traditional analysis might have been based on the need to maintain the existence of a misleading stereotype.¹ He points out that although fixed entry costs were lower in Birmingham there remained very serious barriers on the variable cost side particularly in relation to trade credit. But more importantly he establishes the steady reduction which took place in skill requirements as technology improved albeit on a small scale; improvements in the accuracy of lathes and tools tended to reduce the need for craftsmen's judgement at all stages of production and instead called for less skilled minders.² This tendency is supported by his examination of wages in engineering in Manchester and Birmingham where the latter were lower than the former at all skill levels except the lowest, i.e. the labourers. In addition the problems of family employment relative to Lancashire make the dependence on the household head that much greater, while the lack of a social unrest he appears to think is more a matter of the difficulties of labour organisation in the large range of workshops with such a confusing system of factors and sub-contractors making individual bargaining the norm.³

The only other industry of any real importance in the West Midlands was the pottery industry which expanded rapidly in the later 18th century. However this is not to suggest that other industries were not of some local importance, for example the textile industry in the Dove Valley around Leek, or the Warwick woollen industry up to 1815, or the Stafford shoe industry,

1 'The Impact of Industrialisation on an Urban Labour Market: Birmingham 1770-1860' (Unpublished Ph.D thesis Wisconsin 1972).

2 Ibid., p.136.

3 Ibid., p.121.

or even the mining areas of East Warwickshire and Northern Staffordshire; it is rather to indicate that their influence was purely local (e.g. Warwick) or as yet nascent (e.g. Stafford footwear only developed to any extent with mechanisation after 1850).

It was in the later 18th century that the pottery industry expanded from its subsistence basis under the influence of the changes in transport, the expansion of home¹ and foreign demand² under the leadership of industrial captains like Wedg^uewood, Spode, Minton and Adams.³ The organisation and technology in pottery was changing from a domestic handicraft by-employment to a dual form embodying larger factories and a proliferation of small workshops under the control of skilled journeymen. However, the direct influence of the industry in a spatial sense was limited to an area of 20 square miles around Stoke, but dependence was, therefore, that much greater. It was the presence of local raw materials which had originally determined location; coal for the kilns, local clay and lead ores to be used in glazing. But even when local clay supplies had to be supplemented by Cornish imports, and when salt had superseded lead in glazing, the local supplies of skilled labour and the nearness of the next highest element in total costs, coal, kept the industry in Northern Staffordshire. However, the need to transport even more material inputs if production was to expand held back expansion until the improvements to the Weaver and the Trent-Mersey canal were completed.

Thereafter the nature of production tended to diverge between the larger

1 See D.E.C.Eversley, 'The Home Market and Economic Growth in England 1750-80' in Mingay & Jones (1967), p.233-4.

2 V.C.H. Stafford, Vol.II, p.26 for an estimate of over 80% of Wedgwood's output going to exports in 1787.

3 J. Thomas, op.cit., p.74.

organisations and the smaller workshops. In the former there was, in contrast to accepted opinion, a great improvement in technology, in particular involving the use of steam engines.¹ These were used to drive wheels, for pressing flat and hollow ware or for tile making so that by 1785 this area was second only to Cornwall in the number of engines in use. Of course, these larger factories were not representative of the whole industry until the later 19th century, but within the numbers employed came a large proportion of women and children.² This offers a contrast to the areas in the south, as many boys were employed as lathe treaders and women and girls as flowerers. In the smaller workshops control was exercised by a master potter who gathered together a number of journeymen and apprentices under one roof, and there was even some early process specialisation in painting, gilding and printing.

Industrial relations were conducted within a highly paternalistic network, where the leaders of the industry met regularly with the other master potters to exchange technical knowledge but more particularly to exercise control over price lists and wages. This control was only challenged at the very end of the period when the repeal of the combination laws allowed unions to challenge the employers' position. Despite various strikes and disputes in the early 1830s including the intervention of Doherty and Owen, these challenges failed to erode the powerful position which had been built up by the masters.

1 Ibid., p.92.

2 V.C.H.Stafford II, p.53.

TABLE 1

The Distribution of the Labour Force in the Midlands - 1841
(% of the total occupied - male and female)

61

		Leics	Northants	Notts	Staffs	Warwick
1. Agriculture	Farmers, graziers etc. Agricultural Labourers	5.0 <u>15.0</u> <u>20.0</u>	5.3 <u>29.1</u> <u>34.4</u>	4.4 <u>16.0</u> <u>20.4</u>	3.8 <u>11.0</u> <u>14.8</u>	3.0 <u>11.5</u> <u>14.5</u>
2. Mining Manu- facturing and Building	Mining ¹ Textiles Iron Trades Engineering Pottery Boot & Shoes Building ² Labourers ³ Miscellaneous ³	0.9 Hosiery 18.0 Lace 2.0 Other <u>3.1</u> 23.1	- Lace 3.7 Other 1.0 — 4.7	1.1 Hosiery 13.0 Lace 7.8 Cotton 1.4 Other <u>1.5</u> 23.7	9.3 Silk 1.0 Other 0.7 — 1.7	0.6 Ribbons 3.7 Weavers 2.3 Silk <u>1.7</u> 7.7
		0.5 0.2 0.2 — 3.5 3.5 1.8 <u>33.7</u>	- - - 9.4 4.4 3.3 2.0 <u>23.8</u>	0.7 0.5 - - 3.3 4.4 1.9 <u>35.6</u>	10.2 1.0 8.9 - 3.3 8.0 4.3 <u>46.7</u>	7.3 1.2 - - 4.2 6.4 6.4 <u>33.8</u>
3. Others	Retail Trades & Handicrafts ⁴ Government ⁵ Professionals Domestic Service Independent Others ⁶	19.5 1.0 2.1 16.0 5.2 2.5 <u>46.3</u>	15.6 1.8 2.1 14.1 5.1 3.1 <u>41.8</u>	20.2 1.9 2.0 13.2 4.8 1.9 <u>44.0</u>	17.7 1.2 2.1 11.6 4.1 1.8 <u>38.5</u>	25.3 1.5 3.0 14.3 5.5 2.1 <u>51.7</u>
TOTAL		100.0	100.0	100.0	100.0	100.0

Footnotes to 1841 Occupational Distribution

1. Includes coal, copper, lead, iron and tin.
2. This category includes all non-agricultural labourers and not just those employed in building.
3. All other small industries are included here - among the most common being brick and tile makers, basket makers, coach makers and rope makers.
4. This category was defined in very imprecise terms and containing mining and building in addition to the retail trades and handicraft industries. Having removed mining and building, the occupations that remain concern wholesale and retail trades, road transport and small, usually self-employed, manufacturing concerns. The high proportion of small production units in the Birmingham area therefore probably accounts for the higher proportion of workers in this category in Warwickshire.
5. A crude summation of military, naval, central and parochial/town officials.
6. Almspeople, prisoners, paupers and lunatics.

VI

To conclude this survey of the midlands it is helpful to examine the results of these economic changes as they are reflected in the distribution of the labour force at the end of the period, in 1841.¹

As might be expected Northamptonshire contained the largest number of workers in agriculture, and the smallest number in secondary employment. The West Midland counties had the smallest proportion of their labour force in agriculture at around 14.5%, and this was well below the national average of 22.2%. In terms of employment in agriculture, Leicestershire and Nottinghamshire had fractionally less than the national average.

Employment in mining reflected the unimportance of the Leicestershire and Nottinghamshire coalfields relative to Staffordshire. Instead, the largest category of employment in these two former countries was the textile industry, and especially hosiery; although the strides made by the lace trades in Nottinghamshire are confirmed by the 1841 data. In other areas the importance of textiles is much less evident, for example in Northamptonshire the decline of the Kettering area² is reflected in the fact that many more

1 The census provides the first comprehensive analysis of the labour force in terms of disaggregated industrial coverage and the inclusion of all income earners. In 1801, 1811 and 1821 only a rough threefold division between agriculture, trade and manufactures, and the rest was adopted, and even then the reports were couched in terms of families being dependent for their livelihood on these categories rather than occupations as such. Although the 1831 census was more informative it only referred to adult males, and still used five very broad groupings rather than a detailed industrial breakdown. See W.F.Spackman, An Analysis of the Occupations of the People (1847); 1851 Census introduction pp.lxix - c; Deane & Cole. op.cit., pp.137-140.

2 See above, p.54.

people were employed in the scattered domestic lace industry than in this older woollen sector; in Warwickshire too the decline in the Coventry ribbon trades is confirmed.

As far as the other main industries are concerned the importance of the boot and shoe industry in Northamptonshire (9.4%), pottery in Staffordshire (8.9%) and iron and engineering in Warwickshire and Staffordshire are underlined. The steadiness of numbers employed in building is another notable feature of the table, but the number of labourers is much greater in the west midland counties where the possibilities of industrial employment are greater.

The overall size of these secondary employment categories relative to the national average shows only Staffordshire with a larger number of workers in these sectors with nearly 47% compared to the national figure of 40.5%. Once again the relative underdevelopment of Northamptonshire comes out in a total which is only two thirds of the national average.

In the remaining groups the most important feature appears to be the high numbers employed in the handicraft sectors in Warwickshire which presumably reflects the high proportion of self-employed metal workers.

Economic change in the Midlands between 1750 and 1834 therefore appears as a complex amalgam of innovation and continuity in products, processes and organisation. The bulk of the innovations came in the west, yet even here methods of production remained essentially small scale and based in workshops rather than factories although they were located in the more specifically urban areas of the Black Country. It was in these western areas that the degree of dependence on industrial employment was greater,

in contrast to the closer links between industry and the rural areas of the eastern midlands. Even these trends however should not cloud the impression of a region firmly linked to its rural base as large parts of southern Warwickshire, central Staffordshire, eastern Leicestershire, and the bulk of Northamptonshire were hardly affected by the forces of industrialisation until the coming of the railway released the bonds of their isolation.

Chapter II
Building Workers

I

The building trade was (and still is) probably the most ubiquitous industry within the economy covering

".... the whole range of industrial organisation, the English carpenter, who did estate repairs and building from timber grown and felled on the estate, to the capitalistic contractor for Regent Street or Waterloo Bridge with his mixed teams of Cockney craftsmen and spalpeen labourers, part directed by master craftsmen sub-contractors, for paintwork it might be or for paving".¹

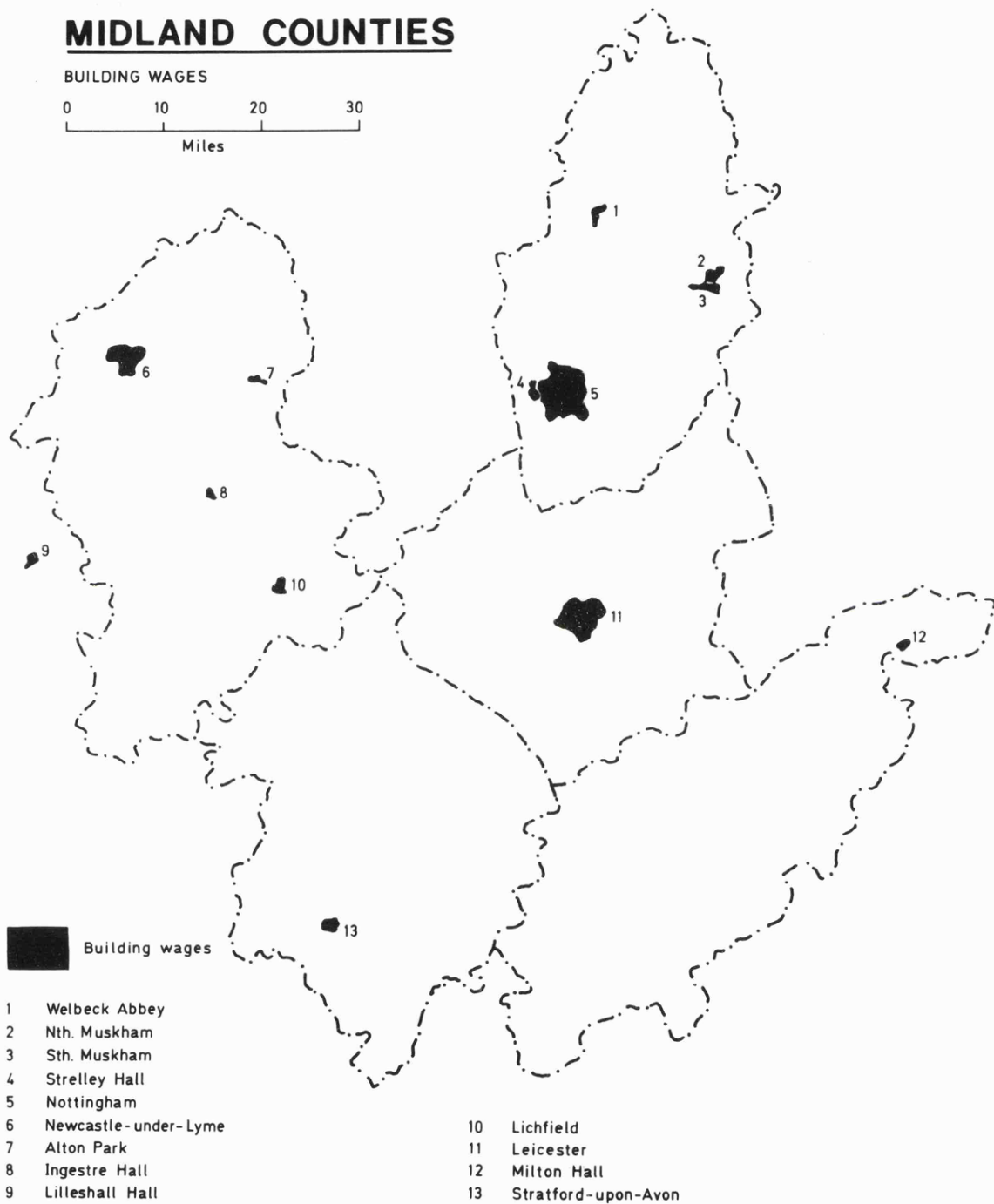
The wage data for building workers in the Midlands has been assembled from a variety of sources within the spectrum suggested by Clapham. Two series underpin the whole section: Nottingham and Stratford-upon-Avon, which both cover the entire period from 1750 to 1834. In addition to these, figures for Leicester begin in 1778 and the three together may be considered as an institutional series, in that they represent payment for work done on public projects. Essentially, however, the work is the same for all three series except that it is performed under the aegis of different administrative bodies: for Nottingham and Stratford wage rates have been taken from the vouchers to the Chamberlain's accounts² and for Leicester from the County Treasurer's vouchers.³ Both of these officers were responsible, within their

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- 1 J.H.Clapham, An Economic History of Modern Britain (1926) Volume 1, pp.165-6.
 - 2 Nottingham Corporation, Chamberlain's Vouchers Files 1806 E - 1855 (N.P.L.) Corporation Archives. Stratford-upon-Avon Corporation Chamberlain's Accounts, Receipts and Vouchers Vol.VII-XXIII (S.B.T.)
 - 3 Leicester Quarter Sessions papers - County Treasurer's Vouchers Q.S. 112/280 (L.R.O.)

FIG. 8

MIDLAND COUNTIES

BUILDING WAGES



unit of authority, for "the upkeep of the Shire (or Town) hall, the gaol, Bridewell and the repair of bridges".¹ They were required to "systematise the accounts, and check the bills of the master craftsmen".² Fortunately for historians not all of them were as corrupt as contemporaries believed³ and the receipts and vouchers were retained, at least for Nottingham, Leicester and Stratford.

The jobs themselves were fairly straightforward: "pulling down weekly cross and building new"⁴ or "paveing and repairing chappell Bar"⁵ or "repairs to North Bridge"⁶ or "repairs to Melton Bridewell"⁷ or "work in ye chapil garden"⁸ or "spreading gravil".⁹ In general these workers were the forerunners of today's council workmen, although they were not permanently employed by these bodies but were "small independent handi-craftsmen".¹⁰

A much weaker series comes from Ravenstone Hospital Vouchers¹¹ where general repair bills survive, whilst all the other figures come from the

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- 1 P. Styles, The Development of County Administration in the late 18th and early 19th Centuries (Dugdale Occasional Paper No.4) (Oxford 1934).
 - 2 S. & B. Webb, English Local Government: The Parish and the County (1906), p.508.
 - 3 Webbs, op.cit., pp.507-12.
 - 4 Nottingham C.A. 1806 E. Voucher No.88.
 - 5 Op.cit. Voucher No.54.
 - 6 Leicester C.T.V., Q.S. 112/127 Voucher No.30.
 - 7 Op.cit. Q.S. 112/237 Voucher No.6.
 - 8 Stratford C.R.T.V. Vol.VII No.127.
 - 9 Op.cit. Vol.12 No.84.
 - 10 Clapham, op.cit. p.162.
 - 11 Ravenstone Hospital Accounts and Vouchers 51-52A (L.R.O.).

private sector and are taken from estate papers where, at this time particularly,

"each generation of owners seem to have felt the urge to modernise and improve, to add a new wing here or rebuild stables there, to remodel the gardens, landscape the park or install a menagerie all these major alterations giving years of work to building craftsmen and their labourers".¹

In addition to improving their own homes, estate records contain considerable information about efforts to build new houses, or alter their tenants houses.²

Putting all of these sources together gives a series which, over the 84 years concerned, has a minimum of 4 observations a year and a maximum of 10 - with 6 being the mean sample size. Unfortunately the Estate building series are not nearly as complete as the public figures with Nottinghamshire estates dominating the picture from 1750-75 and Staffordshire thereafter, with poor coverage for the other three counties.

The workers in the building industry were divided, somewhat untidily, between craftsmen and labourers for it is almost impossible to differentiate accurately between the degree of skill encompassed in the term 'mason' or 'carpenter'. Master craftsmen were indicated clearly, for the most part, but varying types of journeyman helpers etc. could not be distinguished in the bills.³ However, the degree of continuity in the series used here, facilitated the identification of particular workers, so that by consulting later bills it was possible to get a clearer idea of whether the particular workers were labourers or young journeymen/apprentices rising through the scale. Unlike Mrs. Gilboy, who looked for median wage rates, this study

1 G.E.Mingay, English Landed Society in the 18th Century (1963), p.216.

2 See especially the Sutherland collection D593/F (S.R.O.) for extensive urban building in Lichfield, Lilleshall and Newcastle.

3 E.W.Gilboy, Wages in 18th Century England (Cambridge U.S.A. 1934), p.166.

has concentrated on the mode or "rates that were considered to be representative because they were recurrent".¹ This method seemed much more appropriate when dealing with workers who were supposed to be of two different classes, so that the rates given are the craftsmen's and labourers rates which occur most often, rather than an average of a whole bill. An example from the Nottingham Chamberlain's Accounts will illustrate the problem:

"Wm.Stone To stripping, tyling, draining and repairing chimney tops from May 10th, 1790.

Self 5 days 12-6; Thos Tearn 10 days 1-1-8;
 Rich.Simpson 4 days 8-8; Jn.Thatcher 8 days 17-4;
 Robt.Selly 6 days 13-0; D. Parker 10 days 15-0;
 P. Tomlinson 8 days 12-0; Saml. Burton 6 days 9-0;
 Jn. Hanbury 6 days 8-0." ²

In this case the rate given to William Stone, the Master Craftsman, is eliminated as is that given to Hanbury, to leave $2/2$ and $1/6$ as the rates used. Although this is a relatively simple example, it illustrates precisely the nature of the wage rates given in the tables below.

The choice of modal rates is not too difficult in years of stability (e.g. 1750-90 or 1824-34) but the process becomes more complex

"when the labour market was moving It is what we should expect in a market of individual contracts; when the demand for labour rose certain new engagements took place at higher rates; this marginal demand price took time to spread to other engagements which first continued at the customary price but as the proportion of new engagements rose some of the men in old engagements

1 E.H.Phelps Brown and Sheila v. Hopkins "Seven Centuries of Building Wages", Economica XXII 1955, p.196, reprinted in E.M.Carus-Wilson (ed) Essays in Economic History, Vol.II (1962), pp.168-178.

2 Nottingham C.V. 1814 E (N.P.L.)

got sympathetic rises, a market formerly concentrated upon one rate now came to show a bracket of two and a general rise in the market brought about a gradual cessation of engagements at the original rate".¹

Although this statement refers to the 16th and 17th centuries the same general trends were evident in late 18th and early 19th centuries except that the whole process was much quicker. Where rates were changing and were unsettled two relatively equal modes were evident and the median of these was inserted into the series, but the changes were not too gradual and a new overall rate emerges fairly quickly.

The use of daily rates of wages, to some extent, determined which kinds of building workers were considered, in that plumbers, glaziers and millwrights were almost always paid by the piece and that the time taken to complete the work was not recorded on the bills. This leaves masons, carpenters, bricklayers, plasterers, tilers and paviors whose daily rates were relatively easy to identify. These rates were almost always the same as:

"each worker would regard himself as belonging to a particular stratum - say of craftsmen as distinct from labourers - and would therefore expect a wage conforming to its social status: masons, tilers and carpenters would expect wages of the same rough order of magnitude".²

Mrs Gilboy also found that "there was almost no difference in their (.... masons and carpenters) rates".³

1 Gilboy, op.cit., p.253.

2 E.J.Hobsbawm, "Custom, Wages and Work Load" in Labouring Men (1963) p.346.

3 Gilboy, op.cit. p.253.

II

The mean wage rates for all of the building observations are shown in Figure 9 and seem to show three phases:

- (a) a period of steady increase from 1750-1790 at a compound annual rate of 0.9% for craftsmen and 1.0% for labourers,
- (b) much faster growth up to 1814 of 2.5% p.a. for both, and
- (c) a post-war decline followed by recovery from the mid 1820s producing, by 1834, a fall of 0.3% p.a. for craftsmen and a fall of 0.8% p.a. for labourers.

Perhaps the most obvious difference between the two series is in this post-war phase, when the labourers rate falls further (to 1822-3) than the skilled rate: 140:165 (1790 = 100) and thereafter stabilises at a level lower than the skilled rate: 152:175.¹

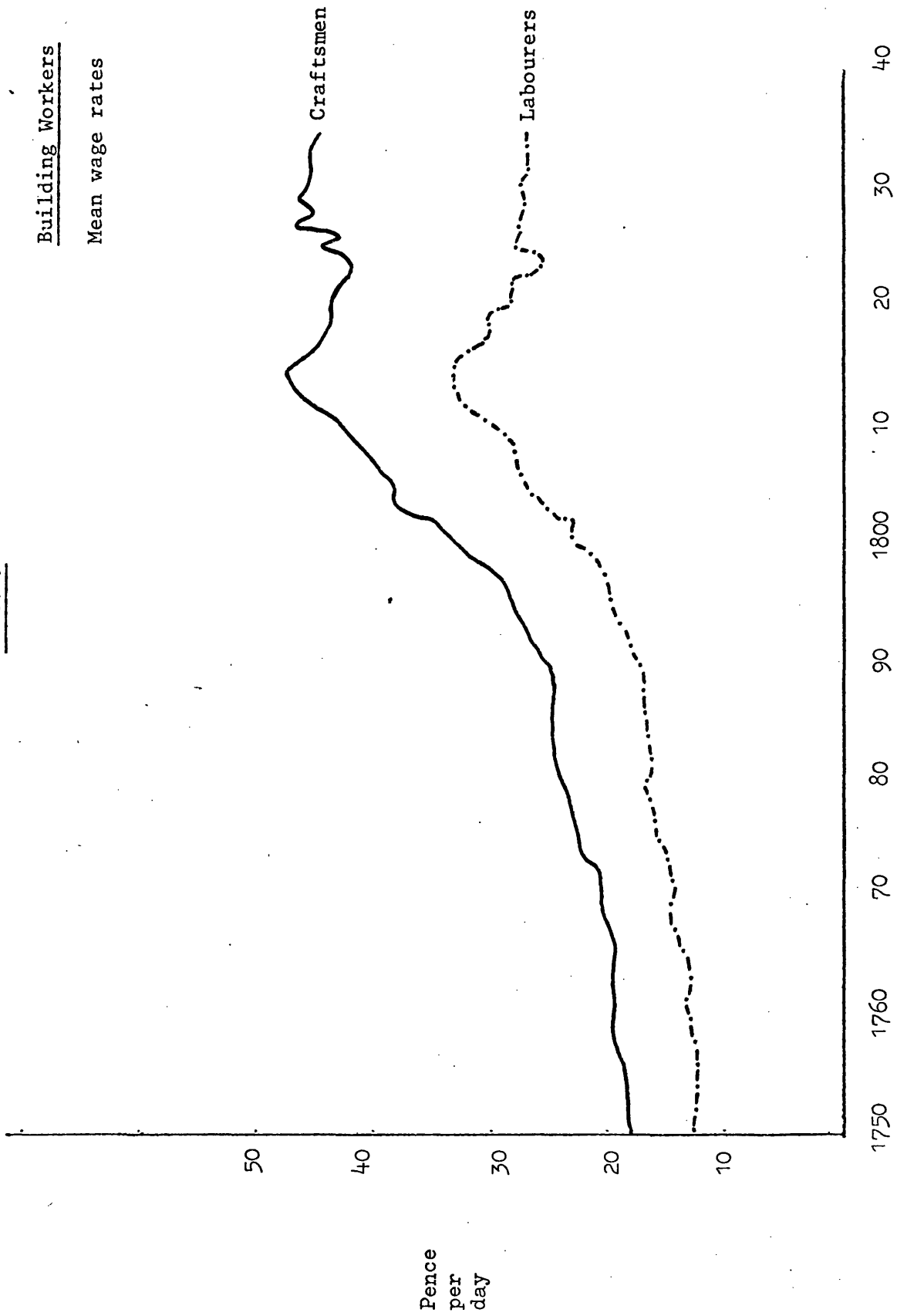
However, although this mean index gives some sort of standard against which to put the exact observations, using the mean ".... is like looking through a keyhole; the part of the room you can see cannot give a full idea of the whole room".² Before looking at the constituent series in some detail it is worthwhile considering the validity of the mean index by looking at the coefficient of variation (or judging how representative of the room is the view through the keyhole). Figure 10 shows the coefficient for both series, and in particular it reveals the wider variation - except for a few years in the 1790s - in rates paid to labourers in this sample. Accepting the warning that too much weight should not be placed on these coefficients because the number of observations changed from year to year, they do reveal that on the same jobs, in the same location, the rate paid to labourers is generally subject

1 For a detailed review of these occupational wage differentials see below Chapter 6.

2 W.J.Reichmann, Use and Abuse of Statistics (1961), p.72.

FIG. 9Building Workers

Mean wage rates

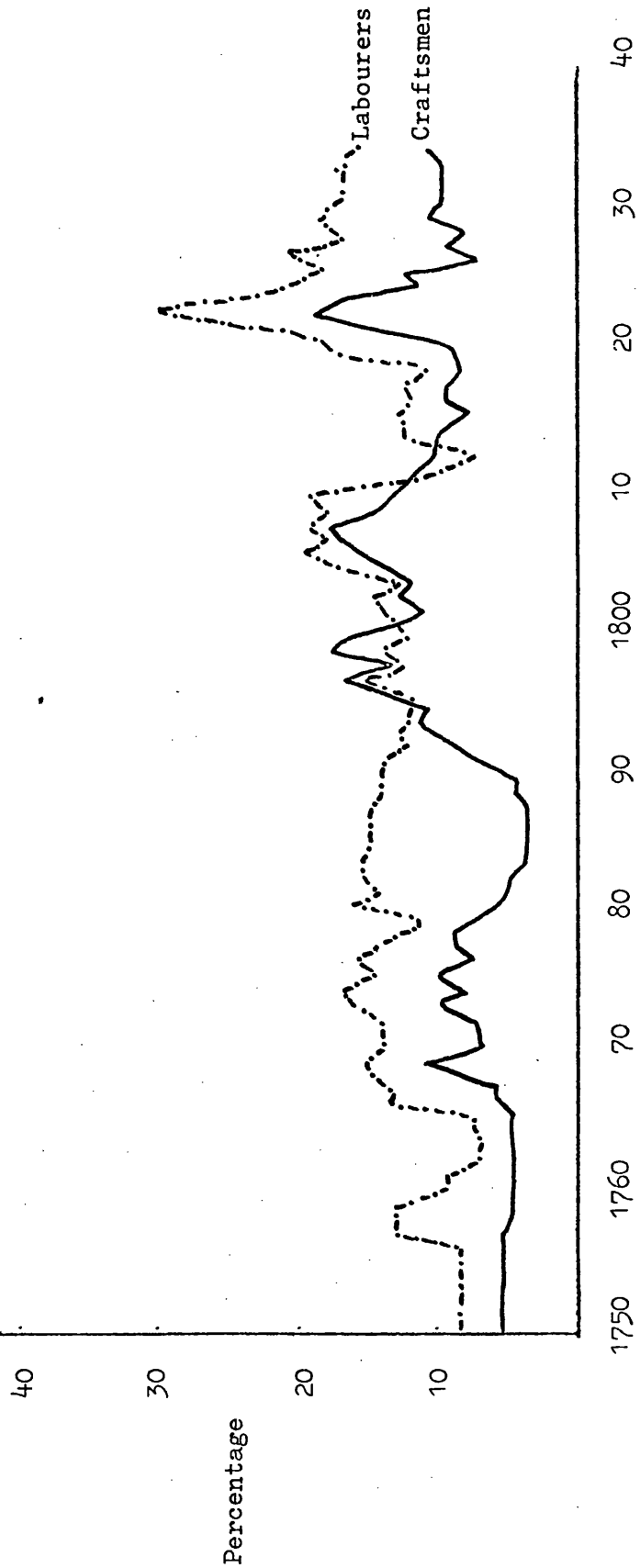


Source: Appendix 1

FIG. 10

Building Workers

Coefficient of variation
(Standard deviation as a
percentage of the mean)



Source: Appendix 1

to wider fluctuations. Looking at Figure 10 this distinction seems most evident before 1790 when the labourers coefficient is just about double that of the skilled workers; the gap is again fairly distinctive after the war possibly indicating that the rates paid to skilled workers varied more in a period of rapidly rising wages than did their unskilled counterparts.

Returning to the question of how good is the view of the room given by the mean index, the impression gained is that it is not totally invalid, given that the standard deviation for labourers is usually 15% and that for skilled workers normally under 10% (in both cases excepting the very high figures in the early 1820s caused by the appearance of very high rates in Leicester and Nottingham compared with the others, especially the very low rates at Lilleshall).

Once the key is turned and the door is opened the whole room is visible, and it is to the room, in the form of the constituent series, that attention must now be turned.

III

The Nottingham series is taken from the vouchers to the Chamberlain's accounts,¹ and looking at the series in relation to the mean index they tended to rise at about the same rate up to 1790, but faster up to 1814 - craftsmen 3% p.a. and labourers 2.8% p.a. (the regional mean for both series rose at 2.5% p.a.). Within this wartime period, however, the nature of the increases were quite different, for the skilled workers rate remained static until 1795 when it began to move fairly swiftly to 1811 (4.2% p.a.) whereas the labourers rate rose steadily in the 1790s (2.9% p.a.) but then faster to 1807 (4.2% p.a.) where it remained fixed until 1816.

1 Corporation Archives (C.A.) 1806 E - 1855 N.P.L.

Post war behaviour of the two series was very close to the mean trend, in that the labourers rate fell faster, to a deeper trough and recovered later than the skilled rate, but to a stable level about the same distance from their peaks (i.e. 11% or 12% below).

In relation to the other series generally, the rate paid in Nottingham was higher and tended to move ahead of changes in the mean trend. There are, however, some exceptions: for craftsmen the lack of change in the early 1790s left the rate behind Leicester, Strelley, Lichfield and Newcastle, and after 1815 for a few years (1818-21) behind Leicester, where the rate did not drop at all, but the levelling off of rates in the 1820s left Nottingham and Leicester paying by far the highest rates. The labourers wage rate was not nearly as strong in leading the other series, only in the years 1800-07 (when the rate rose rapidly) and in the 1820s did the rate paid, exceed that paid elsewhere.

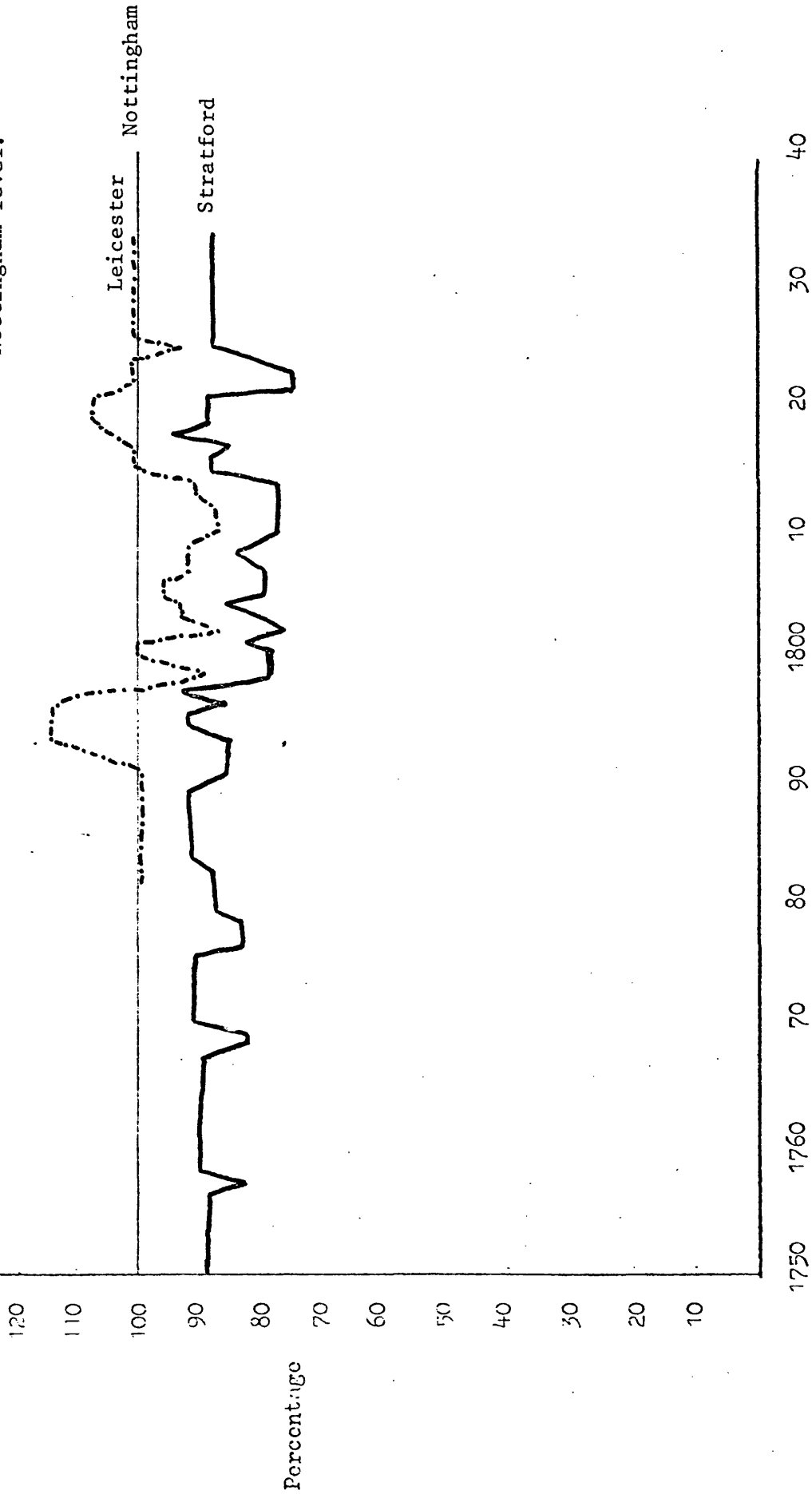
Workers for the Stratford Corporation¹ were paid rates at the opposite end of the spectrum to Nottingham; the rate consistently lagged behind the mean index for both labourers and skilled builders. The relationship of Stratford to the other two major series at Nottingham and Leicester is shown in Figures 11 and 12 and the skilled rate seems on average to be 15% - 20% below Nottingham but 25% - 30% below for labourers (slightly nearer to Leicester in both cases) and the trend was for the labourers gap to widen. Stratford rates also tended to be lower than any of the other series except perhaps for Lilleshall and Milton.

The rates paid to both skilled and unskilled workers moved only slowly up to the mid 1790s (the labourers rate for instance increased at an annual

1 Accounts, Receipts and Vouchers to the Corporation accounts, Volumes VII-XXIII (S.B.T.).

FIG. 11

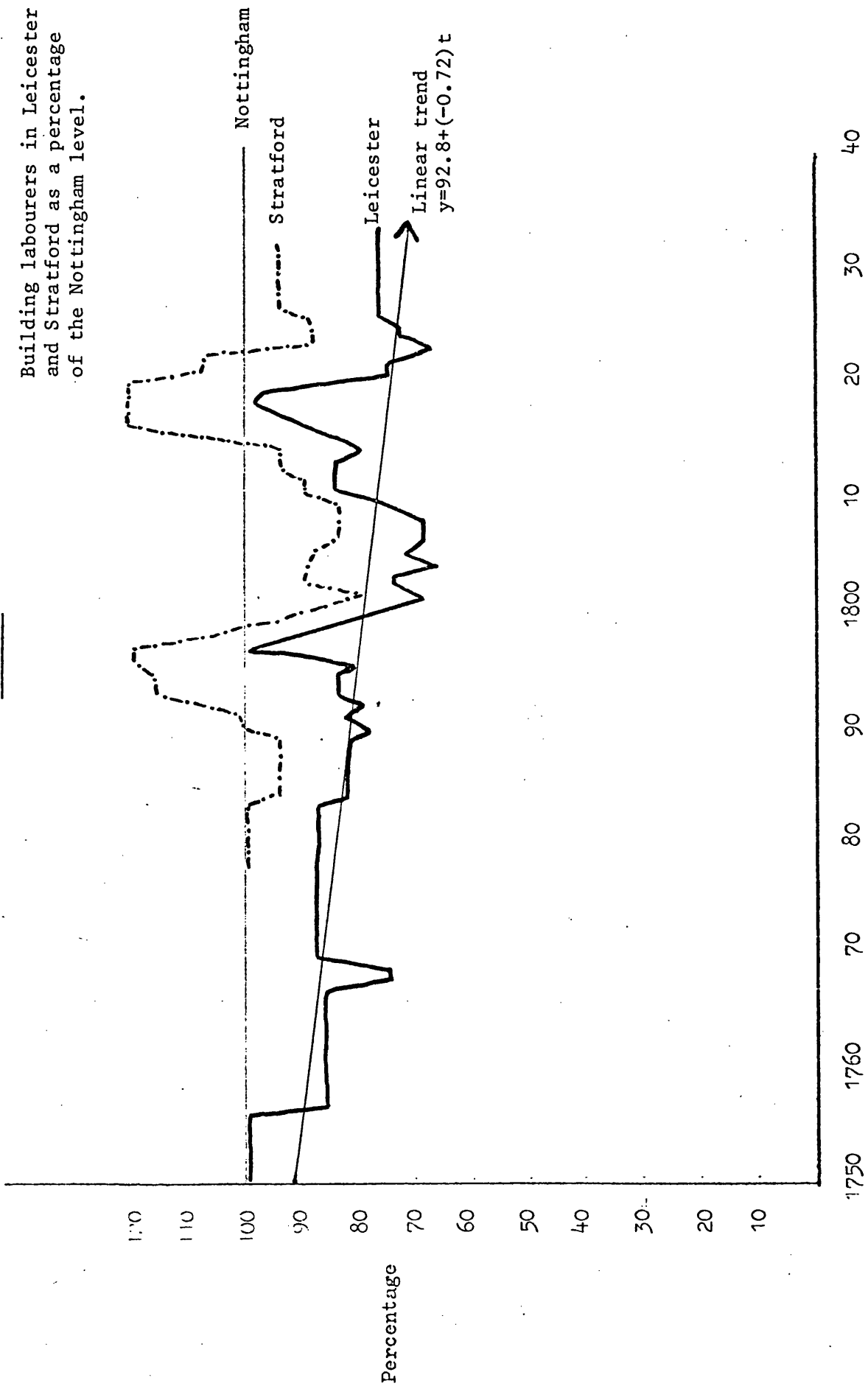
Building craftsmen in
Leicester and Stratford
as a percentage of the
Nottingham level.



Source: Appendix 1

FIG. 12

Building labourers in Leicester
and Stratford as a percentage
of the Nottingham level.



Source: Appendix 1

rate of 0.4% compared to the mean of 1.0% from 1750-90). From the mid 1790s the craftsmen's rate rose as fast as the mean rate up to the peak year in 1814, but the labourers' rate rose more slowly in the 1800s and much faster from 1809-12, than the skilled rate did. The peak for labourers in 1812-14 was higher than the skilled peak but this to some extent was caused by a low figure in 1790 when the labourers' rate deviated from trend by not increasing from its 1789 level.¹ After 1815 both rates fell but the labourers' rate fell both before, and to a lower level than the craftsmen's. Recovery was also different in that the rate paid to craftsmen stabilised from 1825-34 at its peak level, whereas the labourers was 20% below its 1814 rate, which was, for the first time, consistently above Milton - the lowest of the sample at the end of the period.

Builders working for the County Treasurer in Leicester² were paid at rates very close to the Nottingham as Figures 11 and 12 show, with the skilled closer than the labourers, thus the rate paid in Leicester was one of the highest in the sample. As the series only starts in 1778 there is very little to be said about the pre 1790 period except that the rate paid to labourers was below the others. After 1790 the craftsmen's rate moved fairly swiftly to 1805 but then remained constant until 1811 when it moved to a peak in 1814. The labourers' rate also increased in the early 1790s but then remained stable from 1796-1803, rose to 1805 and like the craftsmen's rate in Leicester, remained stable until 1811. Thereafter it reached a peak in 1813 at a level above 1790 almost exactly the same as the mean index. After the war both Leicester rates remained the same until 1822 when the labourers'

1- A comparison of growth rates from 1750-1814 reveals that the craftsmen's rate rose by 1.5% p.a. and the labourers by 1.43% p.a., thus more of the labourers' increase came after 1790 than the craftsmen's.

2 Leicester Quarter Sessions Papers - County Treasurers Vouchers, Q.S. 112/1-280 (L.R.O.).

rate dropped to level out from 1824 at 12% below the peak level but the craftsmen received the same rate throughout the period 1813-34. Two main differences appear then between these two rates, firstly the stability of the labourers series around the turn of the century¹ and secondly the post-war pattern in Leicester seemed able to withstand the depression in rates felt by the other series, although the labourers' rate could not resist the downward pressure in the early 1820s.

The three estates² in Nottinghamshire provide scattered figures for building wage rates only up to the 1800s. The basic trend was for rates paid at Strelley to pull away from the others - craftsmen from the later 1770s and labourers all the way through, so that when the speed of change quickens at Strelley in the early 1790s (4% p.a.) the gap widened even further - in fact the rates paid were 20-25% higher than the Nottingham Corporation level only two or three miles to the east! At Welbeck the rates paid lagged very badly in the later 1790s, especially for the labourers, whilst the few Muskham observations indicate too, an early lag in the labourers' rate, although the scattered observations from the 1800s indicate that rates paid were well up to the Nottingham levels.

The Fitzwilliam estate at Milton³ is the source for a reasonably long series of building wages in Northamptonshire and the rates paid appear to be among the lowest in the sample. In the years 1780-1790 the craftsmen's rate was the same as the others whereas the rate paid to labourers was by far the lowest, being 40-50% less than the others. The decade from 1790-1800 saw

1 This stability is also seen at Stratford, Milton, Lichfield and Newcastle for labourers.

2 Middleton at Muskham Mi Av 7-273 (N.U.L.), Portland at Welbeck DD5P (N.R.O.), Edge at Strelley DDE 1/1-37 (N.R.O.).

3 Fitzwilliam Estate Papers - Miscellaneous Vouchers, boxes 127-1123 (N'ton R.O.)

these relative positions reversed, with the rate for craftsmen remaining the same until 1798, by which time the rate for labourers had risen to the level of most other series. Around the turn of the century labour market pressures once again produced a different response: the labourers' rate rose hardly at all (thus falling behind the others once again) as the craftsmen's rate at first increased and then remained static from 1802-07. After 1807 the craftsmen's rates rose very fast to a peak in 1813 but the labourers' rate hardly altered to reach a peak also in 1813 but at the lowest level of all the series. The post-1815 behaviour of both series is slightly difficult to determine since the series are intermittent, but there is no doubt that they both levelled out at a rate much lower than the others relative to their 1790 figure, and in terms of the absolute rate paid.

The two series for Milton thus behaved in a very different way during the war: first one rising as the other remains constant and then vice versa. From being abreast of the others in 1790, the craftsmen's series fell behind throughout, and only in two periods 1808-9 and 1819-20 was the rate not the lowest of all. The rate paid to labourers, however, began much further behind the others, up to 1790, but progressed faster (7% p.a.) in the 1790s to reach the mean level, after which the rate progressed as well as Stratford and even better than Lilleshall. The rate did not, however, show much change from 1806-14 and the peak level was (unlike the craftsmen's rate) 25% below the mean, and after 1815 the rate also dropped below the others (except Lilleshall) to level off just below Stratford, but 45% below Nottingham, i.e. generally as far behind the others as before the war. The series are similar to Stratford in the sense that the labourers' rate showed a stronger rate of growth, 1790-1814, than the craftsmen, mainly for similar reasons: very poor rates paid to labourers at the outset.

The Sutherland estate papers¹ supply data for three series at Lichfield, Newcastle-under-Lyme and Lilleshall.

Lichfield and Newcastle rates ran quite close together and tended to pay among the highest rates. Labourers wage rates in both towns were the highest up to the 1790s when the rates paid stabilised, allowing other series to make up the leeway. Progress in the 1800s was faster, leaving the Lichfield series² again as the highest with Nottingham in 1814. The dominance of the craftsmen's rate was not as clear up to 1790 but the rates paid were, nevertheless, very high. Although both towns reached similar peak levels and generally moved together in the 1790s all of the increase in the rate paid to craftsmen in Newcastle came before 1802-8 with stability thereafter; the pattern in Lichfield was the opposite, i.e. no change up to 1807 but very fast thence to 1813.

Up to 1815, then, the rates paid in these two towns were among the highest of the sample and although the rates fall thereafter the workers in Lichfield were paid at fairly high levels. The scattered data for Newcastle, however, seems to indicate that the post-war decline was more intense than Lichfield.

Lilleshall rates in contrast were among the lowest of the whole sample. The gap, or the lag behind the mean, gets wider as years go by, so that from being abreast of the others 1767-7, the rates paid 1819-23 were 25% behind the mean for craftsmen and 66% for labourers. Within these end-points the rate for labourers does not lag as far behind as the craftsmen 1788-97 and vice-versa 1804-10.

1 Sutherland Collection : Lichfield D593/F/12/2/1-45, Newcastle D593/F/3/9/1-35 and Lichfield D593/F/3/5-8/1-43 (S.R.O.).

2 The Newcastle labourers' rates are missing 1808-16.

Two much shorter series, from the Shrewsbury estate at Ingestre and Alton,¹ conclude this closer look at the constituent series. The coverage of these figures is poor, and all are post-1800. At Ingestre the craftsmen's rate saw fairly slow progress up to 1814 but generally maintained this level through to 1828 when the series ended on a par with Stratford. Progress for labourers up to 1814 was equally slow although the rate was less able to withstand the downward pressure in the early 1820s but the rate recovered well to stabilise above the Stratford rate. The few Alton figures put the series on a similar level to Lichfield and Newcastle up to 1815, although the rate fell faster in the immediate post war years and the remaining five years 1830-4 placed Alton on exactly the same level as Stratford.

Despite the heterogeneity in the behaviour of these constituent series can any general trends, or conclusions, be drawn?

Looking first at relative levels, the ideal tool to have used would have been Spearman's coefficient of rank correlation, but the problems of missing data means that a much looser analysis, through the naked eye, has to be used. It seems clear that building wage rates in Nottingham and Leicester come out of the period 1800-34 much better than the others, establishing a level one rank above them (the superiority being clearer for craftsmen than labourers). At the other end of the scale Stratford, Milton and Lilleshall rates bring up the rear. The Staffordshire towns come somewhere in between, as they keep well up to the highest rates paid, until the turn of the century, when they tended to fall behind, and after the war they were not as able to maintain their peak levels as well as Nottingham and Leicester, in fact they stabilised at the same rate as Stratford.

1 Shrewsbury Collection D240/E/263-465 (S.R.O.).

As interim conclusion, on the basis of these building wages, would tend to support a critical approach to the use of national, or county, wage indices for such an imperfect labour market. But more detailed analysis will follow when the wage rates for agricultural/estate and highways labour have been examined.

The actual movements of these levels has been discussed in some detail above and the diversity of behaviour especially during the war precludes, for the moment, any attempt to bring out the similarities or dissimilarities in the series. Suffice it to say that most of the rates before 1790 rise steadily like the mean trend, but after 1815 the picture is different. Figure 9 showed the steeper fall and poorer recovery of the labourers' wage rate which is caused partly by the unique maintenance of the peak wage level at Leicester from 1813-34, and the recovery also of Nottingham and Stratford craftsmen to level off, from the mid-1820s, at their peak rate.

Chapter III
Estate Workers

I

It is important to be clear from the start that the wages in this section are taken from Estate records and are not therefore simply agricultural wages despite the siting of all the estates in rural areas. This distinction might at first appear semantic, but it is an important one which is frequently overlooked. In a recent appeal for attention to the preservation of farm records E.J.T. Collins distinguished carefully between:

"... estate and farm records. The estate is a unit of administration and on it the individual farm is a fixed asset which the landowner exploits only indirectly by hiring it out for an agreed rent. The farm on the other hand is a unit of agricultural production, directly exploited by an entrepreneur who risks his resources for business profit. Their respective records reflect different economic motives and very different forms of exploitation".¹

Although Dr. Collins gives too little weight to home farms on the estates he does distinguish between a unit solely dependent upon agriculture and the more diversified estate of which the farm could be a part.

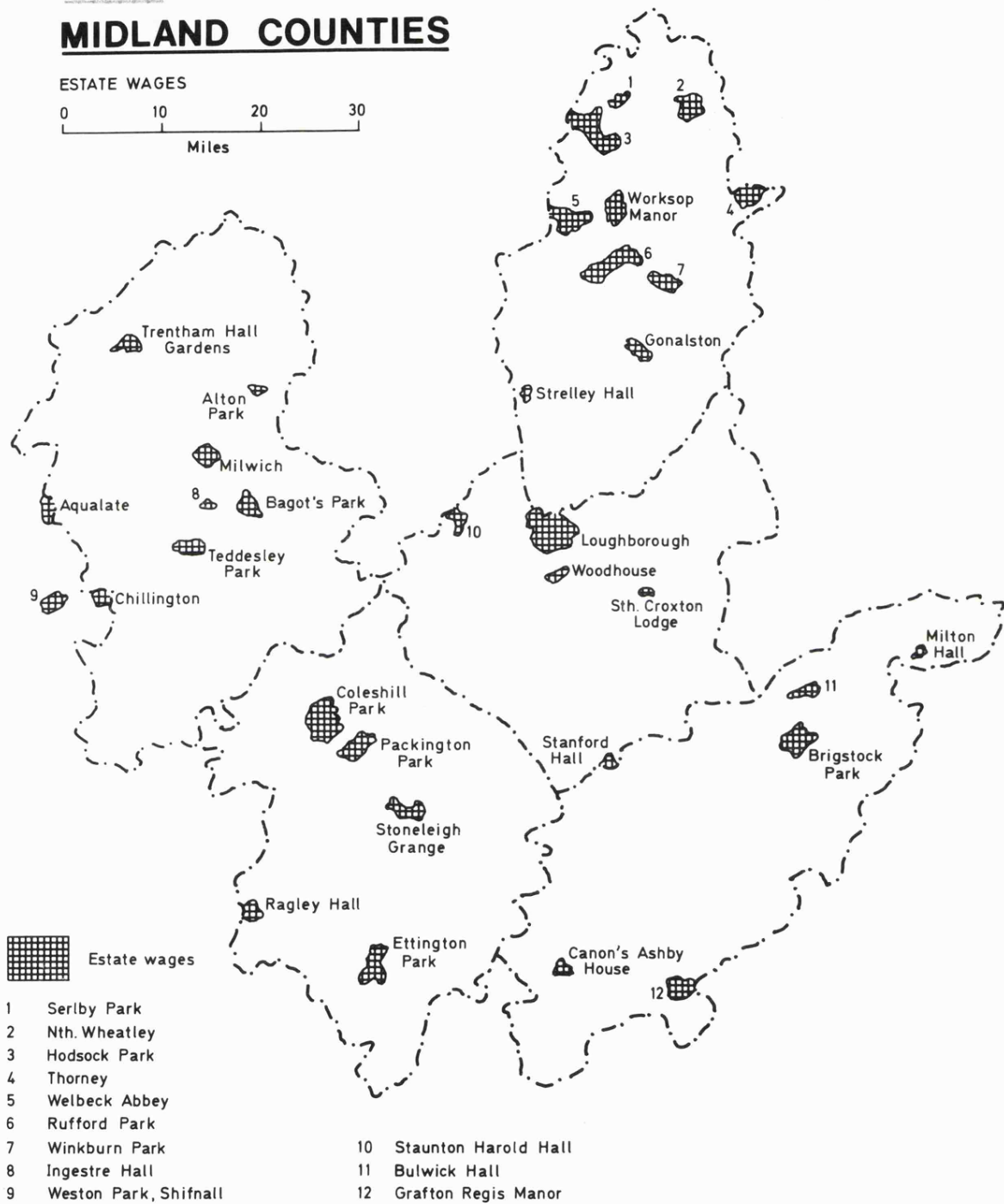
Very few discussions of rural wages make this distinction clear even though as far as employment through the year is concerned, it is crucial, because the flexibility of the labourers and the availability of other work

¹ "Historical Farm Records", Archives, Vol.VII, No.33 (1966) p.143.

FIG. 13

MIDLAND COUNTIES

ESTATE WAGES



on the estate alleviate the problems of unemployment particularly in the winter months.

All of the wage statistics in this section come from estate records, not as a matter of choice but because of the:

"... apparent dearth of historical farm records ... [which even where they exist] ... are unsystematic and incomplete, recording often little more than memoranda kept, lest particular transactions or circumstances should be forgotten... Thus it would seem that the number of farm records at present in repositories represent but a pitifully small proportion of the total which must have been kept".¹

The labourers working on these estates seem to have received little or no attention from historians, as Chambers pointed out in a review of the two main works on Landed Society in the 18th and 19th centuries: "Since in the books reviewed here, the labourers are not considered it would appear that English landed society consisted of 'those with a proprietary interest in the land and its products'".² This seems doubly strange given the fact that the presentation of labour payments in the estate accounts which have survived is usually so good, in that not only are wages recorded, but quite often the number of days worked and in some cases the kind of work being done. It is from these labour sheets that the actual wage rates paid have been taken.

The late 18th and early 19th centuries seem to be recognised as:

1 Ibid., pp.145-8.

2 J.D.Chambers review of "English Landed society in the 18th century" by G.E.Mingay and "English landed society in the 19th century" by F.M.L.Thompson, Economica, XXXI, (1964) pp.330-1.

"... the era of the 'garden park' and the landscape gardening movement ...[with]... its trend towards a greater degree of ornamentation and beautification within many parks. Mansions were resited and rebuilt, lakes created, pleasure grounds formed and large-scale plantations made. There was also an apparently contradictory trend towards a more practical and profitable use of parkland, particularly in terms of a greater degree of agricultural usage".¹

F.M.L. Thompson writing of the 19th century further concluded:

"that the great parks, whose maintenance was part of the imposing fabric of the aristocratic presence, were never intended to be economic propositions in themselves ... and the real returns on the several hundred pounds which were spent on the annual upkeep of a park were not visible in monetary terms",²

and the consequences of this expenditure were mentioned by Mingay in referring to the 18th century where:

"the need to maintain prestige and the pressure of social conventions and responsibilities all combined to nullify moves towards household economy ... this inability to keep down their expenditure had at least the happy corollary of sustaining incomes ... [as] ... the requirements of a great house were a not insignificant factor in the employment and prosperity of its environs, and this was of importance in an under-employed countryside".³

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- 1 D.V.Fowkes 'Nottinghamshire Parks in the 18th and 19th Centuries' Transactions of the Thoronton Society (1967), p.72.
 - 2 English Landed Society in the 19th Century (1963), p.96.
 - 3 English Landed Society in the 18th Century (1963), p.161.

It would seem therefore that the non-agricultural side of estate employment as well as expanding in this period was not subject to the rigours of profit maximisation in a formal sense although there must have been some limit even if it was bankruptcy,¹ and that more interest was being shown in agriculture under the stimulus of "rising (corn) prices, rising rents and rising demand".²

Evidence of these trends on the estates from which wages have been extracted is legion for example: "£6,612 spent on the lake alone in Clumber Park between 1774 and 1789";³ proposals to "take part of the (Workshop Manor) park over for tillage";⁴ expansion of the home farm at Milton in the 1790s;⁵ planting of commercial timber at Shifnall;⁶ enclosure from the chase at Teddesley.⁷ As most of these tasks (i.e. parks and gardens and enclosure for tillage tended to be labour intensive, employment opportunities increased leaving wage statistics behind, occasionally in a remarkably efficient form similar to the example quoted by Thompson:

1 But even if the estate had to be sold, the demand for them and the pressures to maintain conspicuous consumption patterns were so great, it made it likely that the purchaser would continue to behave in a similar fashion irrespective of his previous economic background. See for example E.L.Jones 'Industrial Capital and Landed Investment: the Arkwrights in Herefordshire 1809-1843' in Land Labour and Population in the Industrial Revolution (ed) E.L.Jones and G.E.Mingay (1967).

2 Fowkes, op.cit., p.72.

3 N.U.L. Ne 142.

4 Sheffield City Library W.197.

5 N.R.O. Fitzwilliam papers box 457.

6 Weston park estate accounts TP 594/3 on temporary deposit at S.R.O.

7 S.R.O. D260/ M E87-97.

"The estate office (contained) ... a head clerk ... a clerk of works with a staff of craftsmen and labourers, mainly employed about the castle, home farm and other lands in hand but also available for some repair work on farms in the home district and that there was a head forester, head keeper, head gardener and a bailiff managing the home farm each in charge of a separate department (with its own) labour force".¹

Although it could be as Collins suggests that "well-kept (estate) accounts may have been inspired ... by a keen desire to prevent fraud"² a number of the estate accounts used here are organised in separate sections thus enabling the historian to see how the labour force is moved about to cope with the changing levels of employment in the park, gardens, plantation or on the home farm. Unfortunately, not many of these estate records have survived, but enough material exists from 24 estates in this region to give an index with a mean of six or seven observations per year.

The labour force considered in this chapter is not only therefore employed in agriculture, but in a wide variety of jobs on the estate for which the rates of pay, for the ordinary labourer as opposed to the cowman, shepherd or ploughman, are very similar.

As with the chapter on building it is the daily wage rate which has been collected, but unlike the builders (or road labourers for that matter) there are many different ways in which these rates are paid, and it is not simply a summer and a winter rate distinction, but a whole host of variations

1 Thompson, op.cit., p.169.

2 Collins, op.cit., p.146.

ranging from the same rate all through the year to the payment of five different rates in the same year on the Stoneleigh estate in Warwickshire in 1765.¹ Fortunately the existence of the labour sheets (whether weekly, fortnightly or monthly) permits the identification of changes in the rate so that in the case of Stoneleigh quoted above it is possible to pick out for how long the different rates were paid: 18 weeks @ 11d, 9 @ 12d, 8 @ 17d, 4 @ 14d and 13 @ 10d. A yearly average is then taken in order to get a basis for comparison across the region as a whole.

These rates within the year have not been completely forgotten because they can give a clue as to when exactly the rate changes from year to year but before placing too much economic weight on the reasons for the different rates within any one year it is worth bearing in mind that:

"wages were not wholly subject to either free competition or to any iron law of subsistence; they were governed far more by the custom of the locality and marked differences were observed in wages paid in parts of the country separated by comparatively short distances".²

a conclusion confirmed by J.D.Marshall working on Lancashire wages in the early 19th century "It should be borne in mind that wages, especially in agriculture, can be influenced by custom and tradition. Such influences fall within the province of the sociologist but the regional historian has to take account of them".³

The influence of tradition is especially noticeable in the 18th century where on many estates wages are paid by the quarter, with the summer quarter

1 S.B.T. DR/18 series B, p.14.

2 J.D.Chambers Nottinghamshire in the 18th Century (2nd edition 1966), p.281.

3 'The Lancashire Rural Labourer in the Early 19th Century', Transactions of the Lancashire and Cheshire Antiquarian Society, Vol.LXXI (1961) p.105.

from July to early October being higher than the rest of the year. It is very clear however that this practice generally dies out (certainly in this sample) in the 19th century when the most common form of payment is that of a single rate throughout the year, but more will be said about this later. To some extent then the mean index and the component series are artificial in the sense that they are not the actual rates paid but a yearly average rate; this approach is however necessary to get the series into some common form to facilitate comparison.

II

The mean index for estate labourers is presented as Figure 14 and indicates the following main trends:

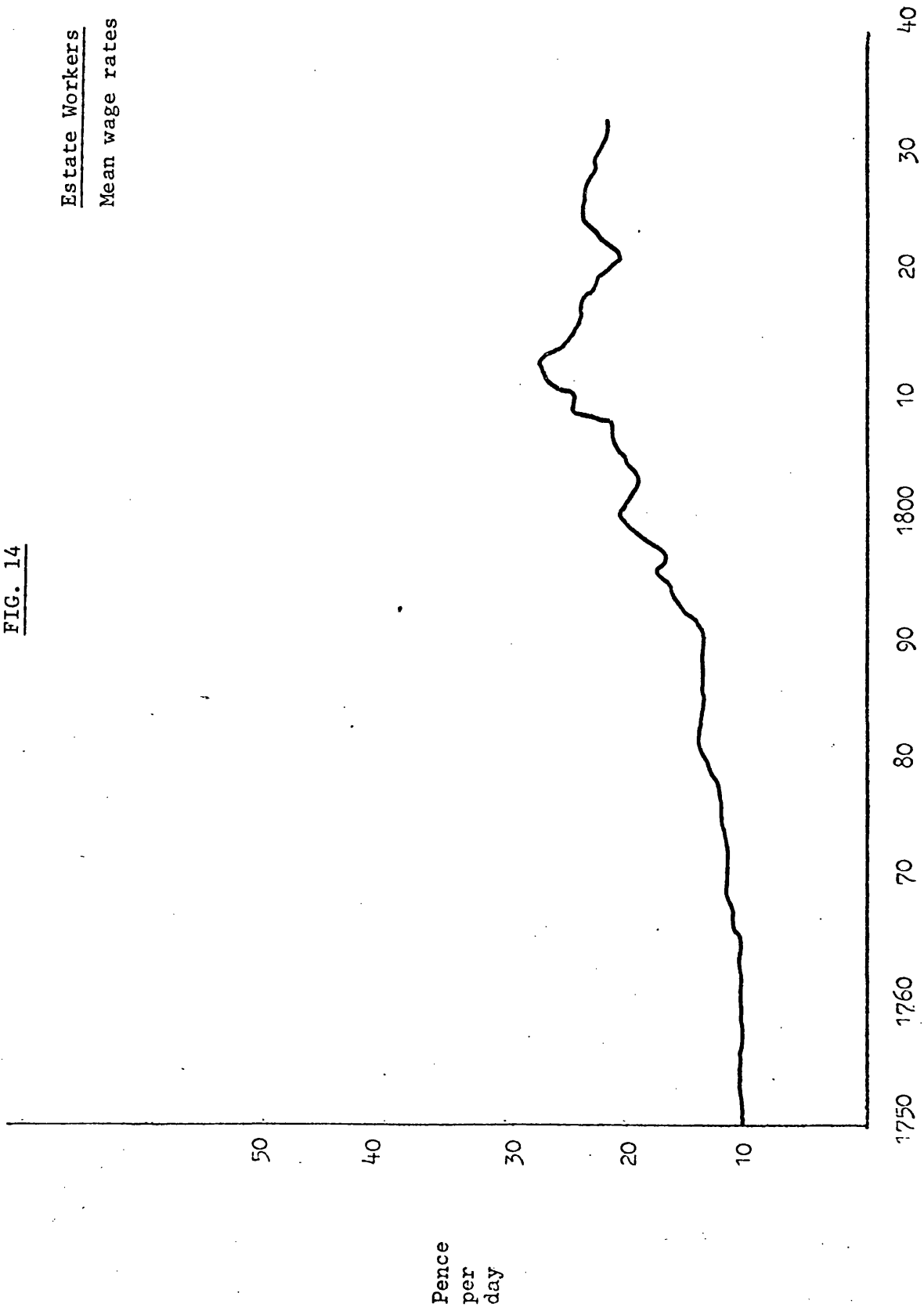
- (a) a steady increase of 0.7 per cent p.a. from 1750-1790,¹
- (b) a period of much quicker increase of 2.8 per cent² from 1790 to a peak in 1814 but with a check in the early 1800s due possibly to the '... backwash of servicemen seeking work during the ... Peace of Amiens'³ and
- (c) a period of decline down to 1834 of 0.9 per cent p.a. with a very distinct trough in the years 1822-23 from which there is some recovery thereafter but on a declining trend.⁴

Figure 15 shows the co-efficient of variation for the estate labourers series on the basis of six or seven observations a year (about the same as

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- 1 Distinctly slower than either building craftsmen and labourers or high-ways workers.
 - 2 About the same rate of increase as highways but faster than builders.
 - 3 E.L.Jones 'The Agricultural Labour Market in England, 1793-1872', EcHR, 2nd series, Vol. XVIII, No.2 (1964), p.325.
 - 4 This declining trend from the 1820s is also evident in the highways series - it is less evident for the building series.

FIG. 14

Estate Workers
Mean wage rates

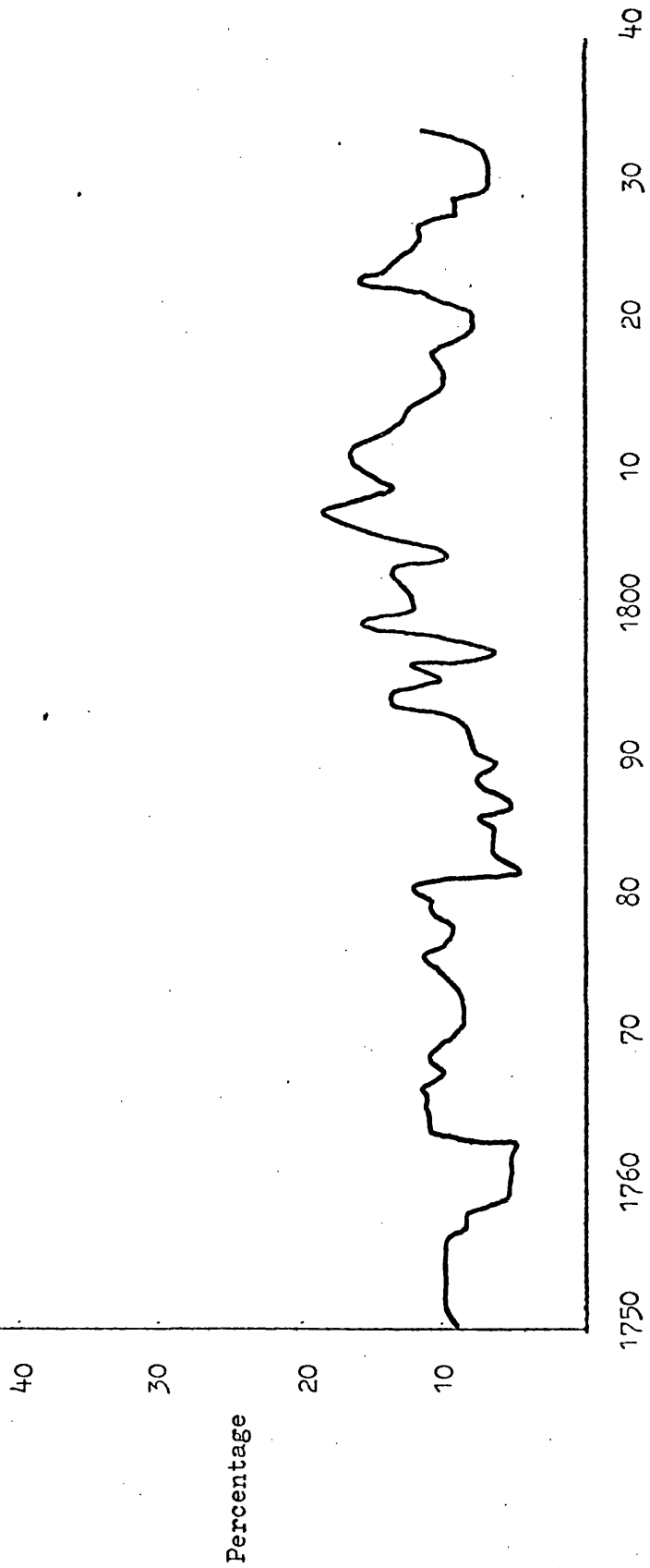


Source: Appendix 2

FIG. 15

Estate Workers

Coefficient of variation
(Standard deviation as a
percentage of the mean)



Source: Appendix 2

the building series) and, bearing in mind the warnings given above,¹ the standard deviation of the rates averages about 10 per cent of the mean index. As it stands this variation is much smaller than the other two unskilled series (building and highways labourers) but not quite as small as the building craftsmen's; and the larger variations from the mid-1790s to about 1810 were caused by the persistent failure of some rates to rise until well into the 1800s (e.g. Milton, Grafton Packington, Teddesley and Chillington) whilst others rise from the 1790s (e.g. Aqualate, Rufford, Gonalston and Shitnall). All in all the conclusion of the last chapter² applies here: the mean index is not hopelessly invalid because of very wide variations. Unfortunately the estate labourers series is not underpinned by any full series, as was the builders index of the last chapter; instead it is rather like a patchwork quilt from which some general analysis of levels and trends will be attempted on a county by county basis.

III

The series for Leicestershire are easily the worst in terms of representation with only isolated observations and two short runs of wages. The reasons for this paucity of data are difficult to find although it may be that there were a smaller number of estates in this county, compared with the other midland counties.³

1 p. 72.

2 Ibid.

3 D. Mills Landownership and Rural Population with special reference to Leicestershire in the mid-19th century. (Unpublished PhD thesis Leicester 1963), p.150.

In a table of counties ranked in order of the proportion of total area which was occupied by estates Leicestershire came 27th out of 40 with only 19%; of other counties covered in this survey Nottinghamshire came 3rd (38%), Staffordshire 8th (31%), Northamptonshire 9th (30%) and Warwickshire 17th (24%). Thompson, op.cit., p.32. This ordering was confirmed by the number of estate wage observations found for each county.

Despite a fairly low winter rate (10d) the short series for Staunton Harold¹ has a fairly good yearly average as a consequence of a high hay and harvest wage rate. In common with several other places the wage rate began to rise in the late 1770s, and in 1783 when the series ends it is the highest rate paid at 15d (the mean was 13.9d). The only other observations are for the years 1828-30 (when payments were by a common annual rate) and were slightly above the mean. The only other run of any significance is at Stanford² (in the far south of the county near Rugby) from 1750-9 where one of the lowest rates was paid. The average here is made up of three-quarters of the year at 8d and the other quarter double this at 16d!

The four remaining observations have one thing in common: that they all tended to be above the regional mean. At Loughborough³ in 1764-7 and 1775 the highest rates of the whole sample were paid in these particular years with a very high non-harvest rate as the cause. The rates at Croxton Lodge⁴ in 1792 lay above the mean, thanks mainly to a high rate for the harvest quarter. Wage rates at Burleigh House⁵ 1800-01 were well above the mean and were highest of all except for the Nottinghamshire estate of Strelley which were extremely close to Nottingham itself; but by 1812 when another rate was found very little change had taken place so that Burleigh had fallen behind the mean and was only just above such low rates as Teddesley and Shifnall. Finally at Beaumanor⁶ in 1833-4 the rate paid was just above the mean.

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- 1 Ferrers MSS 26DS3 2465/6 (L.M.)
 - 2 Braye MSS unclassified vouchers Box III (L.M.)
 - 3 Rectory payments DE667/70 (L.R.O.)
 - 4 Home Farm payments DE814/3 (L.R.O.)
 - 5 Finch MSS DG7/1-43 (L.R.O.)
 - 6 Herrick MSS DG9/2054 (L.R.O.)

There is better coverage for Nottinghamshire although even here the series tend to be somewhat haphazard in their coverage.

The coverage of the years 1750-80 is especially good with five or six overlapping series in which two estates (at Rufford¹ and North Wheatley²) the rates paid lagged behind the rest at all times of the year (i.e. not just in the winter or harvest) and showed hardly any change between 1750 and 1775. Whereas the other rates (at Welbeck³ Serlby⁴ Thorney⁵ and Strelley⁶) started at a higher level in 1750 and moved even higher from the later 1760s so that they were the highest rates in the region. These series began to peter out in the 1770s although at Welbeck there is evidence of an increase in the rate in 1775-6 as there was at Staunton Harold in Leicester.

There is a gap from 1779-1793 when no rates were found, but there are some Strelley and Portland rates in the 1790s. At the former (only a few rates outside Nottingham itself) by far the highest rate (20d) in the region was paid in 1793-5 whereas at Welbeck in 1795 only 17d was paid after they had both paid 14d in 1776. In fact the Welbeck rate rose only to 18d for the rest of the 1790s but jumped to 24d (the same as Strelley) between 1800 and 1801 - both of these rates being far in excess of the rest of the region.

From 1806-34 there is much better coverage and some agreement as to the peak rate of 30d paid at Rufford (1814) Gonalston⁷ (1810-15) and Welbeck (1814)

1 Savile MSS. DDSR 206-211 (N.R.O.).

2 Middleton MSS. Mi Av 226 (N.U.L.).

3 Portland MSS. DD5P 1-150 (N.R.O.).

4 Galway MSS. 12,375/385 (N.U.L.).

5 Nevile MSS. DDN213/5 (N.R.O.).

6 Edge MSS. DDE1/1-37 (N.R.O.).

7 Francklin MSS. DDF 1/122 (N.R.O.).

and as such is the highest peak in the region with the single exception of Alton in Staffordshire. The rate paid at Rufford showed no evidence of the lag that was noticed before 1770 a fact which could be explained by the interest in commercial timber and agricultural improvement on the estate in the late 18th century.¹

The post-war experience in Nottinghamshire matches the mean index with fairly sharp falls in 1815-16 down to the 1823 trough but the rates themselves remain above the mean level with the exception of Clumber² and a particularly sharp fall at Gonalston between 1821-2.

In the recovery after 1823 the Gonalston series never overtook the mean, although by 1834 it was about equal to it, whereas the series for Worksop³ provided by far the highest rate in the sample being about 20% higher than the mean (and therefore also Gonalston in the same county). One final observation for Strelley in 1833 of 23d was also above the mean and on a par with the higher rates paid in North Staffordshire at Alton and Trentham.

In Northamptonshire there are two fairly full series from Grafton⁴ and Milton⁵ covering most of the period and three much shorter ones. Comparing the two main series it is most noticeable that they were very close together from 1780-1810, when they were just on the mean level. However, before 1780 the wage rate paid at Grafton was one of the lowest rates of all, and after 1815 this gap is even wider when the rate was far below the mean possibly due

1 Fowkes, op.cit., p.80 and 84.

2 Newcastle MSS. Ne A 444/1 (N.U.L.).

3 Arundle Castle MSS. W 114-8 (Sheffield Public Library)

4 Wakefield MSS G2580-6; 1211 A-G (Northampton R.O.).

5 Fitzwilliam MSS. Miscellaneous Vouchers - Boxes 1-188 (Northampton R.O.).

to the large number of roundsmen who appear on the bills.¹ At Milton then, an estate on the outskirts of Peterborough, the wage rates paid showed up particularly well after 1815 whereas at Grafton in the south the lowest rates of all the estates were paid from 1819-34. Of the other observations, Canon's Ashby² paid a relatively low rate in the later 1780s but this changed rapidly in the early 1790s to about the same level as Milton and Grafton by 1795. At Brigstock³ where only three observations were found 1763-5, almost exactly the mean rate was paid whereas as Bulwick⁴ from 1776-80 a slightly higher rate was paid than the other Northamptonshire series.

The wage series for Warwickshire although made up of five components do exhibit some regularity of behaviour up to 1815 (after which there were only a few observations from Stoneleigh⁵) in that there seems to have been three 'jumps' in the rate: the later 1770s, later 1790s and later 1800s but in between there was a levelling off. The experience of the 1780s and 1790s is especially noticeable with almost no increase recorded, unlike Northamptonshire and Nottinghamshire; this inevitably resulted in the rate jumping ahead of the mean but then falling behind as the other rates moved slowly upwards, in fact during the 1780s these rates were among the highest paid but their stability meant that by the 1800s they were some of the lowest, until the sharp increase in 1809-10 resulted in a high peak rate.

- 1 Although this conclusion would be challenged by Blaug who believed that the causation ran the other way, i.e. wages that were already low indicated a surplus of labour necessitating the roundsman system, see M. Blaug 'The myth of the old poor law and the making of the new', J.ECH, Vol.XXIII, No.2 (1963), p.169.
- 2 Dryden MSS D. CA 312-23 (N'ton R.O.).
- 3 Maxwell MSS (uncatalogued) (N'ton R.O.).
- 4 Tryon MSS. VII 619a - 623 (N'ton R.O.).
- 5 Leigh collection DR18/385/Series B/P/3-5 (S.B.T.).

The rates paid at Packington¹ and Ragley² (although in very different parts of the country) were almost identical where they overlap (1775-95) and they were among the highest rates paid. But the very long periods of stability at Packington meant that this position was only retained after the sharp increase of 62% in the rate between 1808 and 1812. At Stoneleigh in the 1760s some very high rates were paid but unfortunately this series peters out until after 1815 when the opposite was the case: that the rate was below the mean especially in the trough of the depression in 1823 when only Grafton paid less. Thereafter the rate recovered slightly to end in 1834 at about the mean level.

The pattern of stability in the 1800s followed by a sharp rise around 1810 is confirmed by the experience at Ettington³ which jumped 40% between 1809 and 1810. And in a similar fashion wages at Coleshill⁴ rose sharply between 1799 and 1801.

The distribution of estate wage series in Staffordshire is rather peculiar in that the bulk of the series cover the period after 1800 with only scattered observations before then; as with Leicestershire it is difficult to know why this should be so although the emergence of the county '... from a state of barbarism'⁵ and its rise to importance within the industrial Midlands in the early 19th century could account for the greater interest in keeping estate records. It seems too much of a coincidence that the bulk of

1 Aylesford papers held in private hands at Packington Hall Shelves 32-49. Weekly labour books 1760-1814.

2 Seymour MSS. CR114A/202 (W.R.O.).

3 Shirley MSS. CR229/64 (W.R.O.).

4 Pleydell-Bouveries Collection 5476/E25/Vol.19 (Berkshire R.O.).

5 General View of the agriculture of Stafford, William Pitt (1796) p.146.

the estate records in Staffordshire should come from the early 19th century onwards purely because of their loss or destruction before 1800.

The rates from Blithfield¹ were fixed from 1767-80 which is slightly unusual in that the other series showed evidence of an increase in the 1770s, leaving this series behind but as it then peters out it is difficult to know whether this increase may have followed in the 1780s. Apart from this estate only the Chillington series² offers any 18th century evidence and the indication here is that the rate paid was about the same as that in Warwickshire but well above the Northampton levels.

After 1800 there is wage evidence from all parts of Staffordshire and this to some extent is reflected in the wide variation in wage levels and patterns of change. As might be expected the series for Alton,³ in the north of the county quite close to the Derbyshire border, was extremely high and shows evidence of increase throughout the 1800s in contrast to many other series which only rose sharply from 1809 or 1810. Although the rate fell steeply to 1823 it recovered to level off ahead of the other series across the whole region by 1834. A direct contrast to this pattern of increase in the 1800s is offered by the rates from Teddesley,⁴ which remained exactly the same from 1799 to 1811 thus falling way behind the mean, to a level of about half of the Nottinghamshire rates! But within two years the rate increased by 33% to reach a peak in 1813, which although low by the standards of the whole sample, is maintained until the fall to 1823. The remaining observations 1830-4 placed the estate exactly on the mean giving the impression that the rate here was much less volatile than say Alton. A

1- Bagot MSS. D1721/F/61-6 (S.R.O.).

2 Gifford MSS. D590/645-50 (S.R.O.).

3 Shrewsbury MSS. D240/E/463-72 (S.R.O.).

4 Hatherton MSS. D260/M/E/87-97 (S.R.O.).

similar pattern of very little change may be noticed also at Aqualate¹ where the rate remained the same from 1808-21, and Shifnall² where the rate was the same from 1809-22.

There are thus two patterns in the series which cross the overall peak in 1814, one showing very little change and, in contrast, one which rose steadily to 1814 or 1815 and fell thereafter.

A few observations from Millwich,³ very close to the Alton estate and also near to the potteries, showed a very high rate 1798-1803 but there followed a gap with only two observations thereafter in 1817-18 showing a steep fall which makes it seem likely that there was also a steep rise up to 1815 - although this is highly speculative.

There are two further series, one at Ingestre⁴ from 1819 showing the usual fall to 1822-3 with a slight recovery thereafter but a further fall by 1834 - to the lowest level of all; and one at Trentham⁵, literally on the potteries doorstep which showed a higher level and a much shallower fall than all the rest in the 1820s.

When the effort to make any sense of all these changes is made, the words of Derek Robinson spring easily to mind; 'If L.L.Ms (local labour markets) are to be described in one word they are chaotic. If in two words, they are "bloody chaotic". Despite the current easing of censorship, the

1 Home Farm Labour books D1788/143-195.

2 Bradford Collection TP594 (held in private hands at Weston Hall, Staffs).

3 Vernon MSS. D1826/41. (S.R.O.).

4 Shrewsbury MSS. D240/E/346-53. (S.R.O.).

5 Sutherland MSS. D593/L/6/21-16 (S.R.O.).

editor refuses to allow me to describe them in three words'.¹ The diversity of behaviour encompasses the wage levels, rates of change rates within the years, and in particular the impact of the war with its conflicting demands on the economy producing radically different responses on the estates. Once the war is over, however, the distribution of rates begins to settle down at a level at least 50% above that in 1790 and even though there are estates which seem to lag behind (Grafton, Ingestre, Aqualate, etc.) the rates between 22d and 24d were a fairly good indication of wages in these few counties.

Within the region as a whole the inconsistencies of the series do not permit any more than general comment on rankings; but rates in Nottinghamshire and Leicestershire (where they exist) generally seem to be amongst the highest. (But even here there are the extremely low rates to account for at Rufford and North Wheatley down to the 1770s). There is some similarity between the estates at Milton, Grafton, Packington and Stoneleigh which paid rates which were above average until the 1790s, when their 'stickiness' meant that they slipped behind some of the higher rates, although the gap was closed again later as their rates increased towards 1814. After the war the general experience was mixed but the trough of 1822-3 was common to all the series and recovery thereafter seemed to be towards a declining trend.

The rankings then of these estate wage rates are much more difficult to handle, basically because of the widely varying response which was produced by the war, and in particular by the long-delayed response on some estates to the changing economic conditions.

1 D Robinson, 'Myths of the Local Labour Market', Personnel, Nov. 1967, p.39.

Chapter IV
ROAD LABOURERS

I

The wage series in this chapter are based on the accounts of the Highways Surveyors who were responsible for the upkeep of public highways within their parishes from 1555 down to 1835. The 16th century legislation¹ made road administration '... an entirely local service. The ancient common law obligation, descended from the trinoda necessitas was, for the first time, definitely allocated among the several parties, and the procedure to be followed was peremptorily laid down'.² The organisation, whereby a surveyor was elected to serve gratuitously for a year, remained stable but the implementation of the legislation changed from a system based wholly on unpaid services rendered by suppliers of gravel, horses and carts, and manual labour, to one supplemented by the cash nexus, so that by the middle of the 18th century, the performance of team duty and statute labour seem to have been either commuted to some arbitrary payment, or simply ignored, depending on the position and diligence of the surveyor.

The deficiencies of this system are well known³ and together with the expanding traffic of the 17th and 18th centuries led to the much-documented rise of the turnpike trust on many of the more important routes. However, it is worth pointing out that in 1820 only 16.7 per cent of the total length of recognised public highway was under turnpike control and that the annual expenditure of parish surveyors was in excess of a million pounds from the 1770s onwards.⁴

1 2 & 3 Philip and Mary, c.8.

2 S. and B. Webb The Story of the King's Highway (1920), p.14.

3 The Webbs, op.cit. Ch.3-9, W.T.Jackman The Development of Transportation in Modern England (2nd ed. 1962), p.32-68.

4 Report from the House of Commons Committee on the Highways, 1821, p.374.

Eventually after many Parliamentary reports from Select Commissions the General Highway Act of 1835¹ created

'... a new system of highway administration; based, not on tolls, but exclusively on compulsorily levied rates; governed, not by a separate ad hoc body, but the general local governing authority of the geographical district in which the roads were situated; administrated, not by self-selected groups of local dignitaries, but by democratically elected representatives of the whole body of citizens; acting, not through the unpaid amateur doing his term as Surveyor, but through permanent professional salaried officials; and getting the actual manual labour performed not by any gratuitous common service, but by a permanently employed staff of wage earners'.²

The period under consideration therefore (1750-1834) represents the last days of parochial road administration where the vestiges of Tudor obligations were mixed with the market forces of an industrialising economy.

Once the Statute labour system disappears, the surveyors accounts seem to indicate that,

'The labourers employed on the roads were not, as the canal or railway navvies, a clearly distinct group of workers. Most road labourers were local men employed on a semi-permanent basis or hired casually. When not working on the roads they were employed in agriculture or, if in an urban area, they may have found work on other building projects'.³

The latter point about urban areas is important, as highways surveyors are usually associated with the rural areas, 'But among the parish highways were to be found miles of important streets in those suburbs of big cities and in those of the larger industrial villages'.⁴ Several of the series examined below are from areas not totally dependent on agriculture and they reveal quite different trends from the exclusively rural areas.

1 5 & 6 William IV. c.50.

2 Webbs, op.cit., p.193.

3 William Albert The Turnpike Road System in England 1663-1840 (1972), p.157.

4 The Webbs, op.cit., p.194.

The numbers employed on the highways obviously varied from parish to parish depending on the length of road within their boundary, the degree of use, and time of the year - much the largest number of labourers were employed in the winter months when the pressure from agriculture was less intense. As with the other series the main aim has been to choose what seems to be the going rate in each parish by using the mode which is usually not very difficult to identify, certainly down to 1815. Thereafter problems abound, caused principally by the use of pauper labour on the roads; although there are examples of this before 1815 it is very rare and easy to see because they are identified as such, whereas after the wars with France there was enormous increase in poor relief expenditure which generated a national desire to make the poor do something for their relief payments and the handiest tasks were on the roads, where the poor state of repair brought a permanent threat of indictment to the parish. The problem then becomes one of deciding what is the market wage rate amongst all the subsidised payments to labourers. However, the nature of these payments '... resolves the problem into one of quality',¹ as they were paid by the day for what '... amounted to continuous employment of paupers who were not chosen for efficiency, and could not be dismissed for idleness, in place of labour hired in the open market, the results were therefore unmistakable'.² All the indications are that their productivity was so low that it was reflected in very low wage rates, and that when any repairs were urgently needed the surveyor had to pay something like a market rate in order to get the work completed. In most cases it was found that this subsidised rate was half the modal figure - only just below that quoted by the Webbs from a vestry

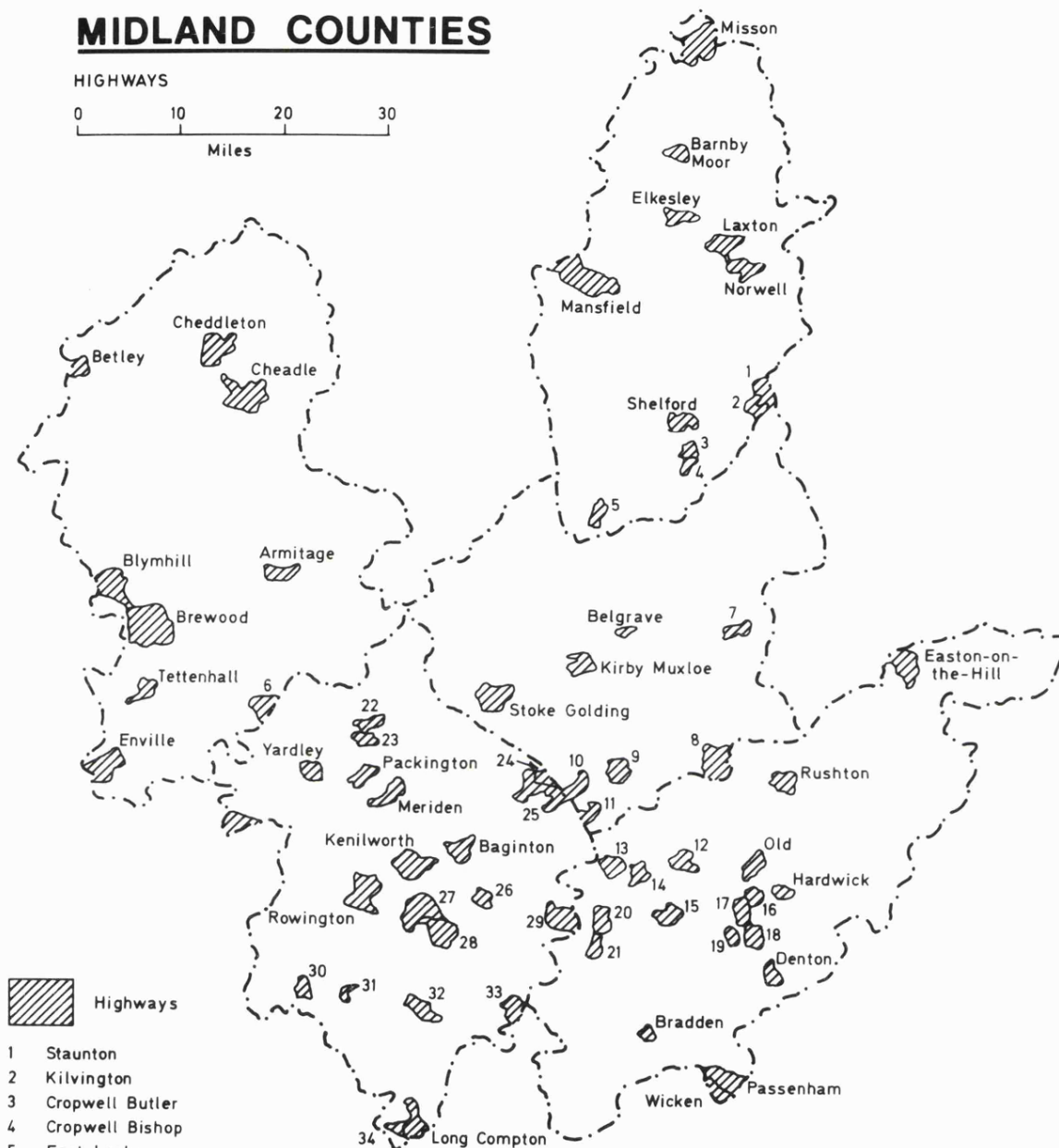
1 J.E.Ginarlis, 'Road and Waterway Investment in Britain 1750-1850' (Unpublished PhD thesis, Sheffield 1970), p.53.

2 The Webbs, op.cit., p.199.

FIG. 16

MIDLAND COUNTIES

HIGHWAYS



minute at Minchinhampton (Gloucestershire) in August 1826 that '... the price to be paid by the parish shall be three-fifths of such sum as shall be named by Mr Smart as fair compensation; he so calculating as to allow an able labourer accustomed to such work, to earn ten shillings a week'.¹ The procedure adopted here was to ignore these very low figures in the preparation of the series.

II

Although the '... incidence of survival of Highways Surveyors account books was found to be poor probably because they were not highly valued';² they do provide by far the largest number of series of the three types of labour examined in this study. Seventy-three parishes were found to have some data on wage rates between 1750 and 1834 and the mean index of these observations is presented as Figure 17. Comparing this with the mean wage series for building and estate workers in the three phases used there, we find:

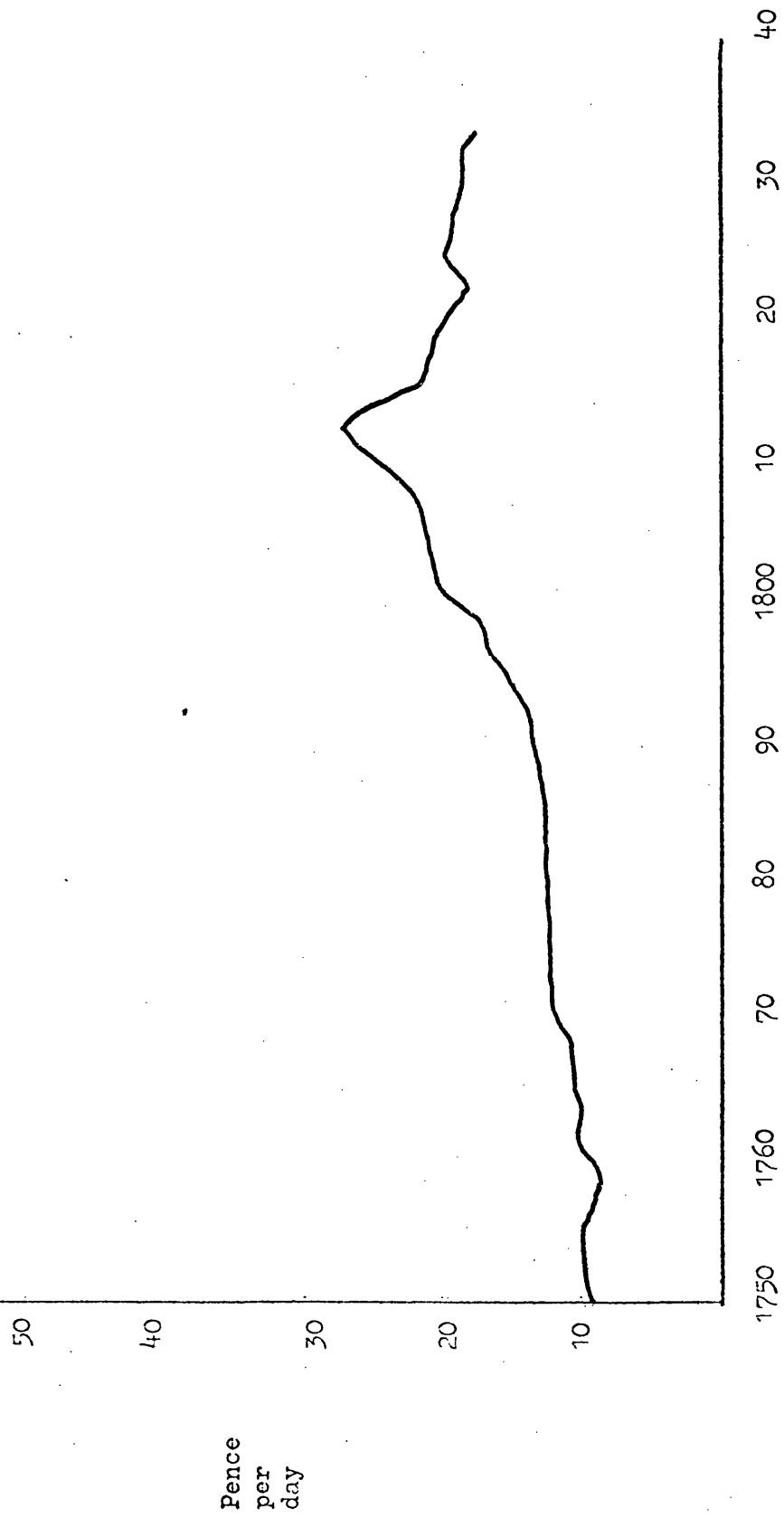
- (a) a rate of increase between 1750-1790 very similar to the builders of about 1 per cent p.a. but decidedly faster than the estate workers;
- (b) the fastest rate of increase of 3 per cent to a peak in 1813 (a year before the others) with a distinct slowing down in this increase in the 1800s followed by a sharp jump from 1808 (the same as the estate series);

1 Ibid., p.199.

2 Ginarlis, op.cit., p.205.

FIG. 17Road Labourers

Mean wage rate

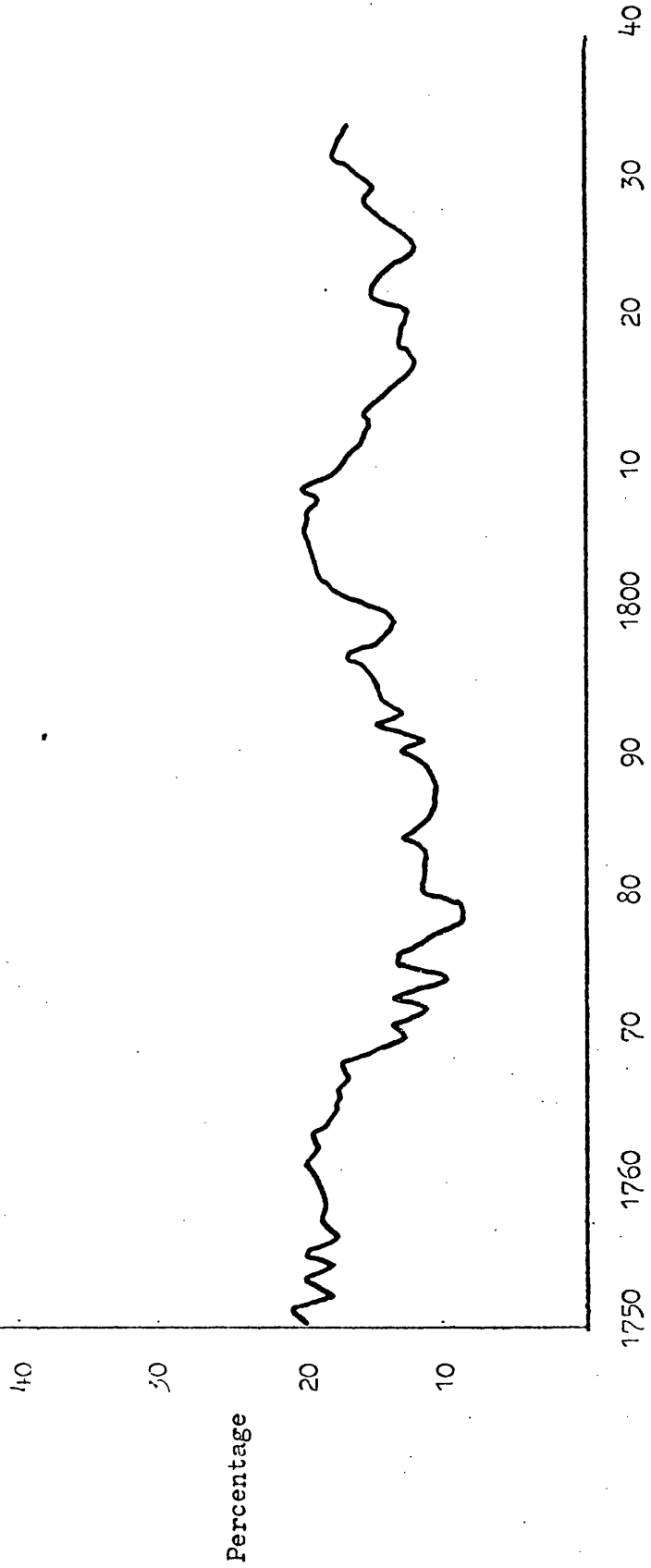


Source: Appendix 3

FIG. 18

Road Labourers

Coefficient of variation
(Standard deviation as a
percentage of the mean)



Source: Appendix 3

- (c) a similar period of decline after the war to a trough in 1822-3 but thereafter there is only a slight recovery to 1826 when a more distinct decline to 1834 is evident than in the other three series.

Thus the fairly rapid increase for road labourers up to 1813 seems in some way to be paid for thereafter by a much steeper and prolonged decline, so that in 1834 the rate paid to them stands at 132 whereas for estate workers it is 160, for building labourers 152 and for building craftsmen 172 (in all cases 1790 100).

The co-efficient of variation for this series of road labourers wage rates is shown in Figure 18 and it is based on a far higher number of observations than either estate or building workers: the average is about 35 compared with 7 or 8 for the building workers and 6 or 7 for the estate workers. The more important trends are really to be seen from 1770 onwards as the 20 years before this date are represented by only a few parishes, compared with well over 30 thereafter. The general movement in the graph seems to suggest the same tendency as was noted for estate workers and building craftsmen: a marked widening of wage rate variations during the inflationary war years. This is to be expected according to Reynolds who found that 'During periods of inflation interplant and interindustry wage relationships are violently disrupted as uniformity gives way to marked dispersion of wage movements'.¹ After the war the variation falls to around 12 per cent of the standard deviation but then rises from the later 1820s due to a market contrast in the wage levels of rural parishes and larger parishes such as Warwick, Lutterworth, Market Harborough and Cheddleton.

The actual levels of variation are a little higher than the other series (as might be expected with three or four times as many observations) averaging

1 L.G.Reynolds, The Structure of Labour Markets (New York 1951), p.281.

between 12 and 15 per cent of the standard deviation except during the war years when it rises to 18 or 19 per cent.¹

III

Looking now at the constituent series the first thing to be noticed is that the rates are much more volatile in their year to year movements unlike the builders or estate workers, whose wage rate tended to be consistently upwards or downwards. This volatility in rates paid was x probably caused by the fact that the work was almost certainly on a daily contract and that the time of the year when road labourers are needed would vary; however if these fluctuations are placed within an overall trend it does allow some discussion of differing levels.

There is wage data from eight parishes in Leicestershire concentrated in the middle to the south of the county; and the series are of a reasonable length so as to permit some comparative analysis. Taking the series together the most striking observation concerns the spread of wage rates within the county and the change in this spread after the 1790s; before that date the range of wage rates paid tends to be quite narrow but (except for a few years 1816-20 when all rates fell quickly) the gap tends to widen considerably so that by the 1830s there is sometimes a 100 per cent difference between rates.

1 Recent studies of labour markets indicate variations of a much higher order than this: see Reynolds, op.cit. Chapters 6 & 7, D. Robinson (ed) Local Labour Markets and Wage Structures (1970) Chapter 2, and Mackay et al. Labour Markets under Different Employment Conditions, Ch.4, and below Chapter 7.

The general pattern of the increase in money wages during the war years is for rates to rise fairly quickly in the 1790s, but then to slow down during the 1800s, only to surge ahead after 1809 to reach a peak in 1814/15. Exceptions to this pattern are found at Kimcote¹ and Shawell,² in the far south of the county, where rates hardly change at all from the beginning of the war until 1810.

The parishes in this county also generally conform to the national pattern after the war: swift fall in the wage rate from 1815-1822 and stability thereafter at a level similar to the early 1800s. There is another trend noted in some parishes in the Midlands which is different to the national picture wherein the decline after 1815 is not halted in the early 1820s but is prolonged through 1834 and in Leicestershire although this pattern is not the norm there are examples at Stoke Golding³ and at Shawell which also exhibited an unusual trend before 1815 as noted above.

The level of wage rates paid in this county on the whole lag behind the regional mean before the 1760s but thereafter lead this mean (excepting the very low rates noted above at Stoke Golding and Shawell). In fact the parish of Kirby Muxloe⁴ pays a rate considerably higher than anywhere else in the region after an exceptional rise from 16d - 30d between 1792 and 1799.

The twelve series for Nottinghamshire are much shorter and more intermittent than the other counties although they do seem to show a tendency to follow the national trend in rising fairly fast through the 1790s with less emphasis on change in the 1800s (with the usual exception - this time

1 Kimcote H.S. accounts DE 539/7-9 (L.R.O.)

2 Shawell H.S. accounts DE 734/9 (L.R.O.)

3 Stoke Golding H.S. accounts DE 495/30 (L.R.O.)

4 Kirby Muxloe H.S. accounts DE 123/17, 81-2 (L.R.O.)

at Cropwell¹). Before 1790 the rates paid in Nottinghamshire, though showing a fair degree of stability, are on the whole at or above the regional mean. The post-war behaviour of the series again matches the national picture of stability through the 1820s but the problems of general analysis are well illustrated by looking at Staunton² and Kilvington,³ two adjoining parishes in the East of the county. Both rates decline rapidly to 1822 but thereafter the Kilvington rate fails to recover and remains much lower than Staunton. The one urban series at Mansfield⁴ is very short (1815-22) but fails to register the same sharp post-war decline noted elsewhere (with the exception of another urban area : Warwick).

To summarise the Nottinghamshire position, although these highways accounts confirm the position of the area as a relatively high wage county before 1800, from the few parishes for which there are figures after 1815, there is no clear evidence that it had retained that status.

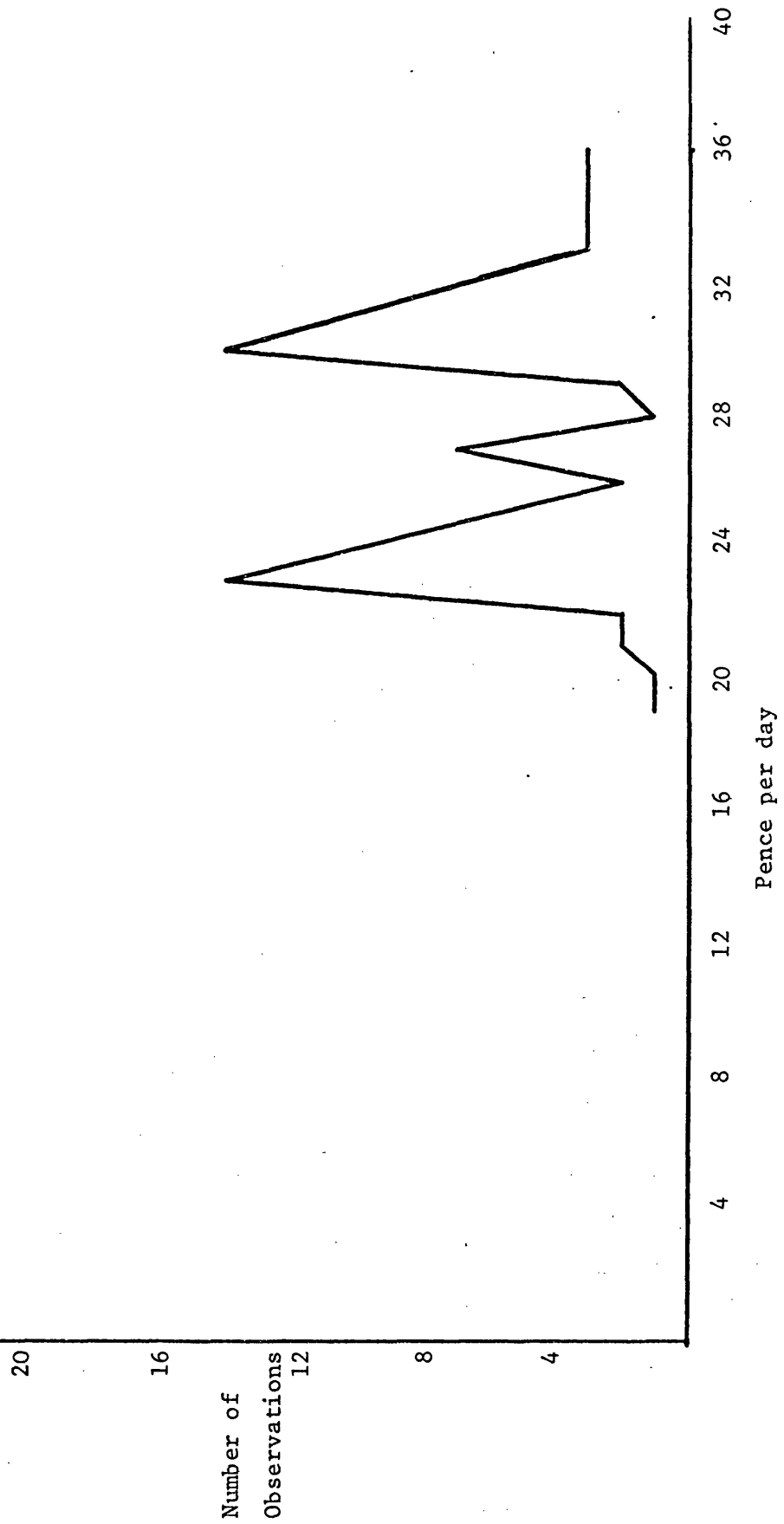
Northamptonshire is the county best covered for Highways Surveyors accounts both in terms of the number and length of the series and on the whole the general profile is different from Leicestershire and Nottinghamshire in that the bulk of the rate increase comes in the years from 1808-13 rather than in the 1790s - a feature borne out by the observation that only one parish (Abington⁵ in Northampton itself) out of seventeen pays a rate higher than the mean in 1800.

The dangers of generalising about high and low wage counties is best

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- 1 Cropwell H.S. accounts PS 113/1, PR 4544 (N.C.R.O.)
 - 2 Staunton H.S. accounts PR 1078-1110 (N.C.R.O.)
 - 3 Kilvington H.S. accounts PR 1065-73 (N.C.R.O.)
 - 4 Mansfield H.S. accounts ND 2078-2121 (N.C.R.O.)
 - 5 Abington H.S. accounts 1730-1840 - unclassified in hands of incumbent.

FIG. 19

Road Labourers
Distribution of wage rate
observations in 1813.



Source: Appendix 3

illustrated however when the situation of the peak years 1812-14 is examined. The overall distribution of rates - Figure 19 - for 1813 is predominantly bi-modal at 24d. and 30d. (median for this year 27.3d.) and half the observations at each of these two rates are from Northamptonshire; yet there is little geographical differentiation and of the seven parishes immediately around Northampton three are at 24d. and four at 30d!

Perhaps the most that can be said is that the Northamptonshire parishes lag most behind the region as a whole in the 18th century but by 1834 there is no evidence that the county as such lags behind the rest (although Bradden¹ pays the lowest at 13d!) in fact the rate seems to have been less subject to pressure than elsewhere yielding what might be termed low profile parishes in which the pattern is one of steady rise and fall rather than more dramatic fluctuation. Examples of this pattern may be noticed at Passenham,² Wicken,³ Bradden, West Haddon,⁴ Crick,⁵ Easton on the Hill,⁶ and Old⁷ where, in contrast to the rest of the county, even the years immediately before 1813/14 produce few dramatic changes.

It is really the pre-1800 years which see the real lag of this county's parishes as the Leicester, Stafford (and to some extent Nottingham) rates begin to push up the mean index especially from the later 1780s.

The distribution of parishes is such that direct comparisons may be made

-
- 1 Bradden H.S. accounts G 1427 (Inc)
 - 2 Passenham H.S. accounts 257 (N'ton R.O.)
 - 3 Wicken H.S. accounts 286 (N'ton R.O.)
 - 4 West Haddon H.S. accounts D 36 (N'ton R.O.)
 - 5 Crick H.S. accounts 118 (N'ton R.O.)
 - 6 Easton on the Hill H.S. accounts 321 (N'ton R.O.)
 - 7 Old H.S. accounts 102-4 (N'ton R.O.)

in some cases of series from closely adjoining parishes. On the whole these behave in a very similar fashion at, say, Passenham, Wicken and Bradden in the far South, or at Crick and West Haddon in the East, but as previously mentioned those parishes surrounding (or part of) Northampton itself produce widely differing levels and changes in these levels underlining the limits perhaps of local labour markets.

Comparisons with closely situated parishes across boundaries may be made in two cases: firstly around Market Harborough (in Leicestershire) the parishes of Rushton,¹ Arthingworth² and Cottingham³ (just across the border in Northamptonshire) experience similar trends but at a level several pence below Market Harborough; secondly the Warwickshire parish of Wolfhamcote⁴ and in Northamptonshire, Daventry⁵ and Badby⁶ all within two or three miles of each other yet the series are quite different with Wolfhamcote paying substantially higher rates than Badby from 1803-14 with the differential narrowing thereafter to 1834. The Daventry rates are almost the same as Badby 1780-1796 and lie between Wolfhamcote and Badby 1816-28.

The prevailing impression from Northamptonshire seems to be the lack of intense pressure, upwards or downwards, on wages rates that some of the other counties experience and it is only in the parish of Bradden in the deep South of the county that the prolonged post-war decline in wages is really noticed.

-
- 1 Rushton H.S. accounts 5, 7 (Inc.)
 - 2 Arthingworth H.S. accounts 14 (N'ton R.O.)
 - 3 Cottingham H.S. accounts 167-171 (N'ton R.O.)
 - 4 Wolfhamcote H.S. accounts DR 167/10 (W.R.O.)
 - 5 Daventry H.S. accounts D.1484-5 (N'ton R.O.)
 - 6 Badby H.S. accounts 235 (N'ton R.O.)

Warwickshire is another county with a good distribution of about twenty parishes with Highways Surveyors accounts but the series are not as long as those for Northamptonshire. In general the series show the dual standard which seems to dominate Warwickshire that of an exceedingly rural South and a Northern part dominated by the rising power of the industrial Midlands. The overall pattern of the wage series combine that noted in Leicestershire and Nottinghamshire where swift increases occur in the 1790s and that of Northamptonshire where most of the increase comes just before 1813, and the parishes divide into those which follow either one pattern or the other or both!

The six parishes in which rates are increased in the 1790s and around 1810 are all in the Northern part of the County - Nether Whitacre¹, Shustoke,² Meriden,³ Kennilworth,⁴ Baginton⁵ and Willey⁶, and those which increase mostly just before 1810 are all Southern rural parishes, Temple Grafton,⁷ Barton⁸ and Pillerton Hersey.⁹ However, just as the spectre of an explanatory hypothesis raises its head the four other series which bridge the war years and which all adjoin some of the aforementioned parishes exhibit neither of these trends. Packington¹⁰ for instance which lies between Meriden and

-
- 1 Nether Whitacre H.S. accounts DRB/27-54 (W.R.O.)
 - 2 Shustoke H.S. accounts DR(B) 39 (W.R.O.)
 - 3 Meriden H.S. accounts DR182/52-4 (W.R.O.)
 - 4 Kennilworth H.S. accounts DR296/88-9 (W.R.O.)
 - 5 Baginton H.S. accounts DR 251 (W.R.O.)
 - 6 Willey H.S. accounts DR 407 (W.R.O.)
 - 7 Temple Grafton H.S. accounts DR201/60-1 (W.R.O.)
 - 8 Barton H.S. accounts DR 80/5 (W.R.O.)
 - 9 Pillerton Hersey H.S. accounts CR 131/645 (W.R.O.)
 - 10 Packington H.S. accounts DR 75/3-12 (W.R.O.)

Shustoke has what has already been termed a low profile in that it fails to rise as fast as these up to 1815 but equally does not fall as fast after 1815. In a similar way Longcompton¹ does not experience the sharp rise and fall around 1813 as its neighbour Barton; neither does Farnborough² in relation to Warmington³ or Pillerton Hersey nor Hunningham⁴ compared with Baginton and Kennilworth.

The most atypical parish in the whole sample is Warwick where after following the normal pattern of increase 1807-14 and fall 1814-19, the rate actually rises thereafter to 1834 to finish at 27d. i.e. 9d. more than the median and no less than 11d. (or 70%) higher than its neighbours Baginton, Kennilworth and Hunningham.

Once the 1822/3 trough has passed the wage rates paid show two trends (a) continued downward movement in most (14) parishes and (b) recovery and some resistance to further downward pressure in all three Northfield (Birmingham)⁵ Warwick⁶ and Wolfhamcote although even these latter two decline 1832-4.

None of the series begin before 1770 and from there to 1790 the rates are mostly stable at a level above the mean and changes, where they occur, taking place in the late 1780s.

Standing back from these changes it is noticeable once again how diverse are the levels and changes in levels of all the parishes even adjoining ones;

1 Longcompton H.S. accounts DR 267/67-81 (W.R.O.)

2 Farnborough H.S. accounts DT 30 A/11 (W.R.O.)

3 Warmington H.S. accounts CR 391/7 (W.R.O.)

4 Hunningham H.S. accounts DR 179/2 (W.R.O.)

5 Northfield H.S. accounts DRO/14 (B.P.L.)

6 Warwick H.S. accounts W 33/98-120 (W.R.O.)

the groupings noted as to the timing of changes in wage rates seem quite random. The period of closest movement seems to come in the depression after 1815 whereas the upwards trends from 1790 onwards are inclined to produce many varied responses in the wage rate.

Staffordshire provides the poorest coverage of Highways Surveyors accounts, the majority of which come in the 19th century (the same as estate and building series).

The only observations which come before 1800 indicate that wages in the county are rising much faster than most from the mid 1780s in fact at Tettenhall¹ (near Wolverhampton) the rate increases from 12d in 1785 to 24d. in 1800 as the median rate moves only 12.8d. to 18.9d. in the same period. Shenstone² (near Walsall) also increases quickly from a very high level in the 1780s. From the far North of the county the speed of increase is less intense for in two adjoining parishes Croxden³ shows no increase at all 1775-1790 whereas in Cheadle⁴ the rate changes quicker in the 1780s than the 1790s thus falling behind the median by 1800. From such a small sample then before 1800 there seems to be much more change around the expanding South Midland area than further North although the different pattern of the two adjoining parishes of Croxden and Cheadle illustrates the dangers of wider generalisations.

There are slightly more observations after 1800 although as usual this means slightly more variation in wage rate changes and the speed of these

-
- 1 Tettenhall H.S. accounts D451/14/20 (S.R.O.)
 - 2 Shenstone H.S. accounts D34/A/PS1 (S.R.O.)
 - 3 Croxden H.S. accounts D21/3 (S.R.O.)
 - 4 Cheadle H.S. accounts D239/M/Box 4 (S.R.O.)

changes. In the Wolverhampton area the behaviour of the rate is variable with Tettenhall paying very high rates throughout the 1800s and rising even higher from 1808-12 (very similar to Nether Whitacre, Shustoke, Meriden, etc. in Warwickshire); but the adjoining parish of Brewood¹ pays much less from 1806-11 whereupon it jumps sharply to the Tettenhall level. The series for Blymhill² - immediately to the North West of Brewood - only starts in 1810 but even so the rate paid until 1814 is exactly the same as Tettenhall and Brewood in these peak years giving some support to 30d as the going rate for road labourers at the peak of wartime inflation. However at Enville³ parish two or three miles to the South of Tettenhall has a different pattern again showing very little increase at all 1805-15.

At Great Barr⁴ (this parish adjoins Shenstone near Walsall mentioned above) the rate of increase is extremely sharp (50%) from 1806-11 but the rate of decrease is also very sharp after 1813-16 (50%). Further North the two adjoining parishes of Cheadle and Cheddleton⁵ behave in a similar fashion in that they both rise very quickly between 1811-12.

The range of behaviour from a smaller number of observations in Staffordshire shows a similar pattern with some parishes rising fast over the whole period (Tettenhall, Great Barr and Shenstone) others rising sharply just before the peak years 1812-13 (Cheadle, Cheddleton and Brewood) and yet others changing hardly at all (Enville).

The pattern after 1815 also contains elements of those changes noted

-
- 1 Brewood H.S. accounts B127/F/83/96 (S.R.O.)
 - 2 Blymhill H.S. accounts D1044 4/5 (S.R.O.)
 - 3 Enville H.S. accounts D42/A/PS/1 (S.R.O.)
 - 4 Great Barr H.S. accounts D568/A/PS 1-4 (S.R.O.)
 - 5 Cheddleton H.S. accounts D893 (S.R.O.)

in the other counties: (a) continued downward movement after 1815 or (b) recovery and resistance to deflationary pressure on wage rates. Firstly the parishes of steady decline: this is most noticeable in Brewood, Blymhill and Enville where the levels are remarkably similar. Secondly, there are the other parishes whose rate seems to resist downward pressures except perhaps in the very bad years 1822-3 and 1833-4: in the North at Cheadle, Cheddleton and Betley¹ and in the South at Great Barr and Tettenhall all pay just on 24d. (the median is always below 19d.) and at Gayton² (near Stafford) a stable rate of 20d. is paid. The majority of parishes in this (non-random) sample do not follow the regional trend of steady downward movement.

The influence of Staffordshire as one of the centres of the Industrial Revolution then seems to be reflected in wage rates especially in the South around the Black Country but again the persistence of differentials within short distances from these areas should give these comments little more than a general tone.

1 Betley H.S. accounts

2 Gayton H.S. accounts D705/PC/1/2 (S.R.O.)

Chapter VMidland Wages: Summary and Survey

The object of this chapter is to pull together the strands which have emerged from the previous three sections on wage data in building, on estates and on the roads. In so doing there will be some emphasis given to the place of the midlands in relation to other established wage series for similar occupations, and also to the diversity of trends within the region as a whole.

I

One of the most difficult problems in trying to compare the data on midland wages with other series is that the published series are '... scattered incomplete and discontinuous...';¹ they are often based on estimates, or informed guesses, rather than rates actually paid; and they often use the term average in an ambiguous fashion referring sometimes to money wage rates, sometimes to weekly earnings and sometimes to an annual estimate of earnings. The great pioneers of wage history were A.L.Bowley and G.H.Wood who managed to assemble all the known data into several series² for different occupations in different regions, but whose more complete and accurate observations are for the post-1850 period. Their work on the late 18th and early 19th centuries relied heavily on the quotations of contemporary observers such as Arthur Young, Eden and the Board of Agriculture reporters but also on estimates given in evidence to various government committees. The results of their labours will be examined

1. Deane & Cole. op.cit., p.18.

2. First published in a series of articles in J.R.S.S. between 1898 and 1910, with summary articles in E.J. 1898-99.

in more detail below but at this stage it is important to note that the series they produced have been used as lynch pins in the compilation of other indexes as a guide to interpolation etc. whenever this was required.

As good an example of this as any is the index produced by Rufus S. Tucker of the 'Real Wages of Artisans in London 1729-1935'¹ which uses Greenwich Hospital records as its main source, but supplements this with five other series from the Bowley/Wood data. Similarly, in the work of Phelps Brown and Hopkins on building wages through seven centuries² the institutional series from the south of England are supplemented and refined in the light of the Bowley/Wood material.

Given their importance therefore it is worth considering the two most relevant series by Wood and Bowley in more detail, that for urban wages 1790-1860 produced by Wood³ and for agricultural wages 1767-1850 by Bowley.⁴ The urban series sought to establish modal wage rates for the most important industries in individual towns and districts, using data from Eden's State of the Poor, early parliamentary Reports (e.g. Artisans and Machinery, 1824 and Manufactures, Commerce and Shipping, 1833) and Porter's Progress of the Nation. This non-agricultural series may be used with Bowley's agricultural series (which he broke down into county averages) which was based on five main sources: (A) estimates in Arthur Young's tours 1767-70, (B) Eden's survey of 1795, (C) the Report of the Select Committee on Paying the Wages of Labour out of the Poor Rates, 1824, (D) the returns collected by the Poor Law Commissioners in 1833, and (E) the estimates quoted by Caird

1 Journal of the American Statistical Association, XXXI (1936), pp.73-84.

2 Economica, N.S., XXI (1955).

3 E.J., IX, (1899).

4 J.R.S.S., LXI (1898).

in 1851. These spot observations were supplemented by an enormous number of isolated quotations by contemporary observers to produce a national index from 1770-1850.

Thus, although the data comes from a wide variety of sources which are of an uneven quality, we do have a national wage index against which to compare the midland data. Unfortunately the coverage of the index is primarily post-1790 leaving the rest of the 18th century poorly served. Those 18th century series which do exist are based mainly on data from the south of England using institutional records. Two of these series have already been mentioned - those by Tucker and Phelps Brown - but they can be supplemented by the work of E.W.Gilboy¹ who ventured into the west country and the north in addition to covering London and the south-east in more detail. She also based much of her work on institutional records (hospitals, Abbeys, boroughs etc.) and she concentrated mainly on building but the data that she collected tended to peter out by the early 1790s.

To attempt to place changes in midland wages in a national context therefore, it has been necessary to break the comparison into two sections up to, and after 1790, so that the Gilboy and then the Bowley/Wood estimates can be used as standards. In addition the Tucker and Phelps Brown indexes, which cover both periods although they are based on similar sources, will also be used.

Perhaps the least problematic form of comparison is to look at the long term trends in wages, i.e. to consider rates of change over time rather than absolute levels, given the diversity of sources and their incomplete

1 Wages in Eighteenth Century England (Harvard, 1934).

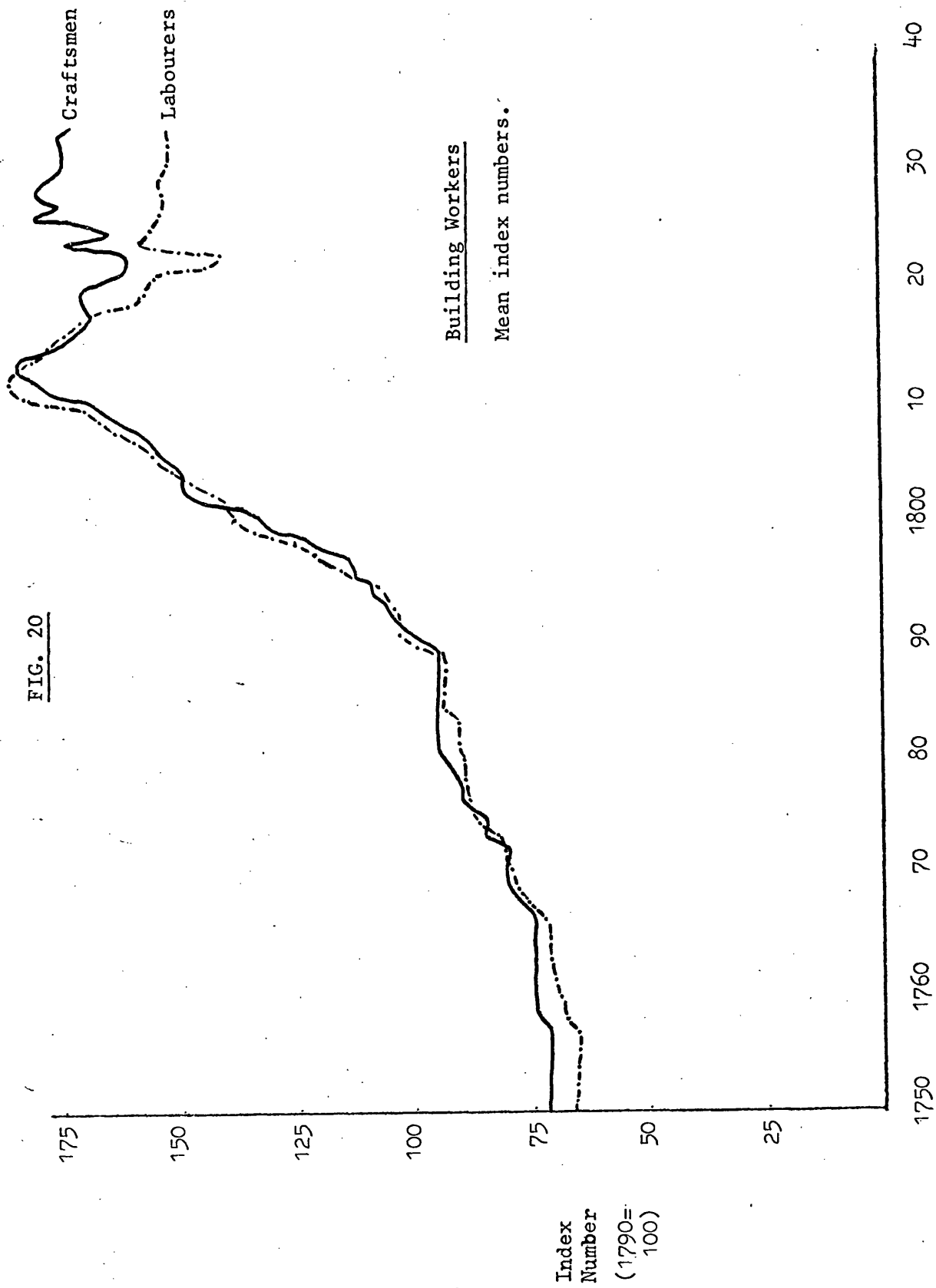
nature.¹ These comparisons involve the selection of a base year against which to measure changes, and in this case 1790 has been used partly because it is a convenient break point between the other series, but also, as the series indicate, it is just about the time when wage rates begin to move more sharply.

Taking the first period, therefore, from 1750-90, Figs 20 and 21 show the rates of change in building, estate and road wages based on the midland data. These show that each series was moving steadily upwards over the period, in building a rise of 42% for craftsmen and 52% for labourers, on the estates a rise of 31% and on the roads a rise of 46%. The other most noticeable feature of the indexes is that much of the increase is concentrated in the period from the later 1760s to the late 1770s with fairly stable years both before 1765 and after 1780.

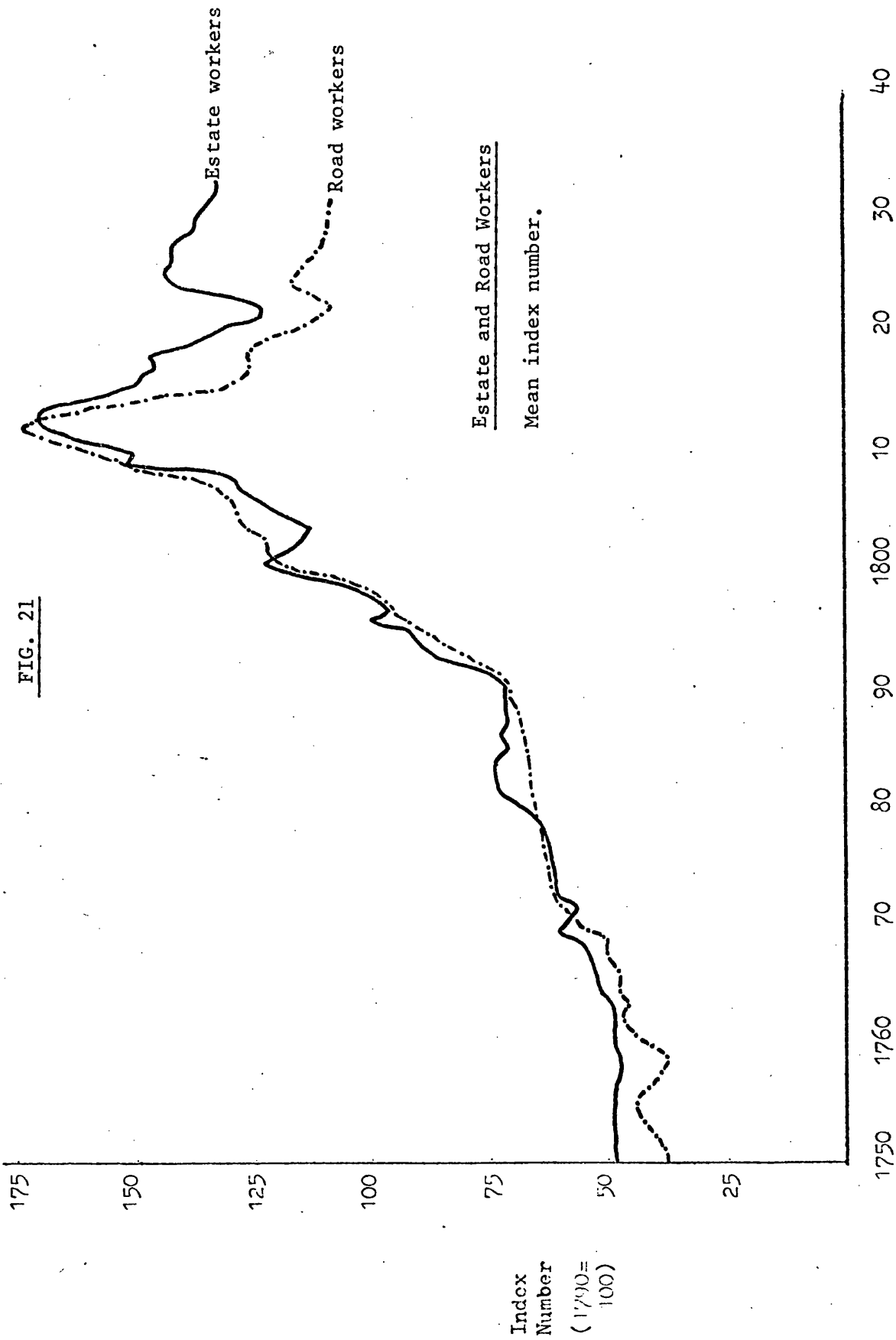
In her analysis of building wages, Dr Gilboy found two contrasting trends in the second half of the 18th century whereby wages in the south of England increased only slowly, whereas in Lancashire and the North they rose rapidly.² Figure 22 shows a rate of increase for Lancashire builders of 54% for craftsmen and 94% for labourers, whereas Figures 23 and 24 show much slower rates of growth for workers in the southern counties. Figure 23 based on the Phelps Brown index (which as we noted above is in turn based on an amalgam of Gilboy and Bowley/Wood data) points to an increase of 21% for craftsmen and 9% for labourers, but the Tucker index (Figure 24) shows an even slower rate of growth for London artisans of only 3% between 1750 and 1790.

1 Bowley refers to the rates of change form of analysis as 'kinetic' as opposed to the 'statical' accumulation of wage concensus, Wages in the 19th Century (1900), p.3.

2 Gilboy, op.cit., Ch.VIII; and Dean & Cole, op.cit., pp.18-20.



Source: Appendix 1

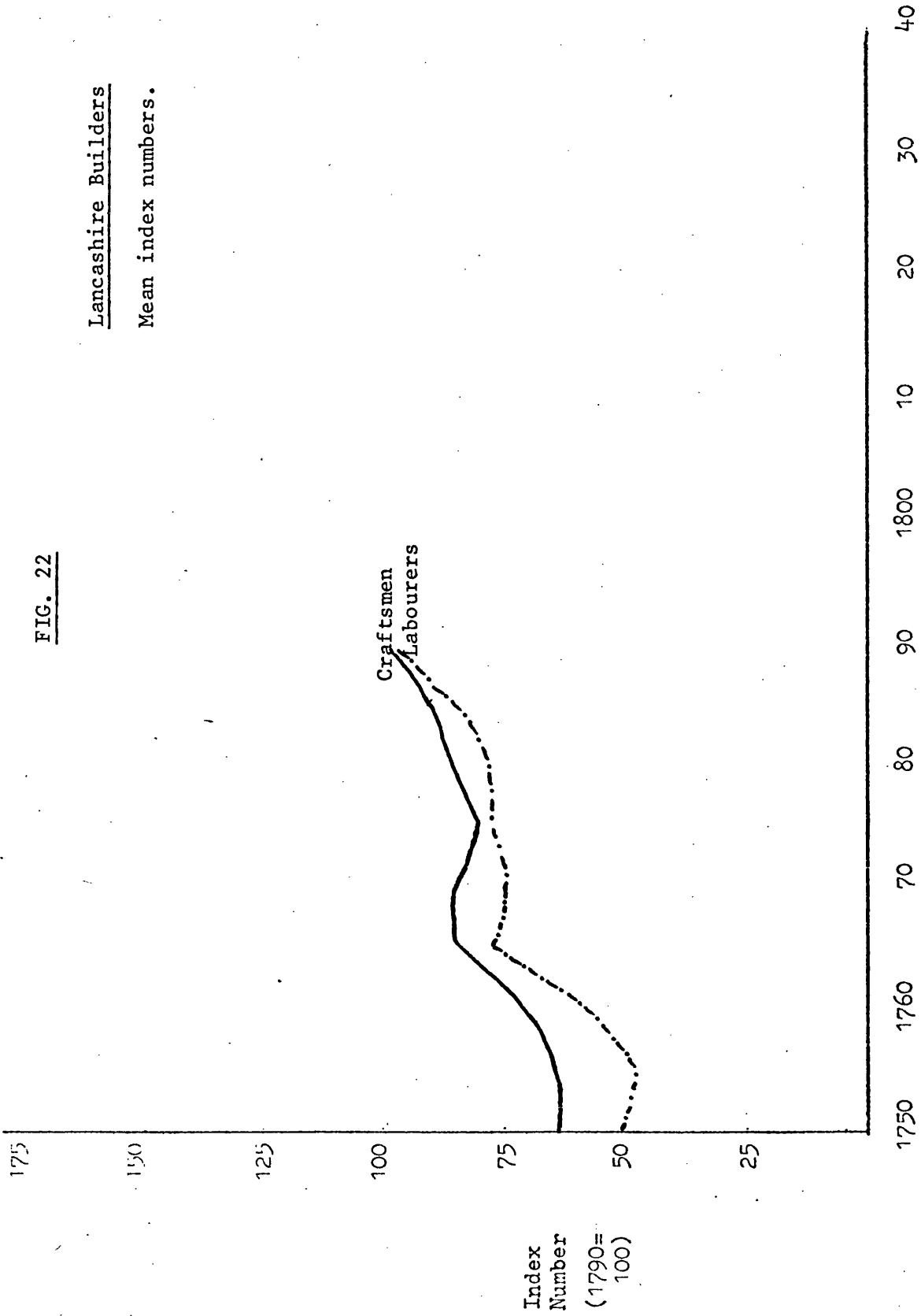


Source: Appendices 2 and 3.

FIG. 22

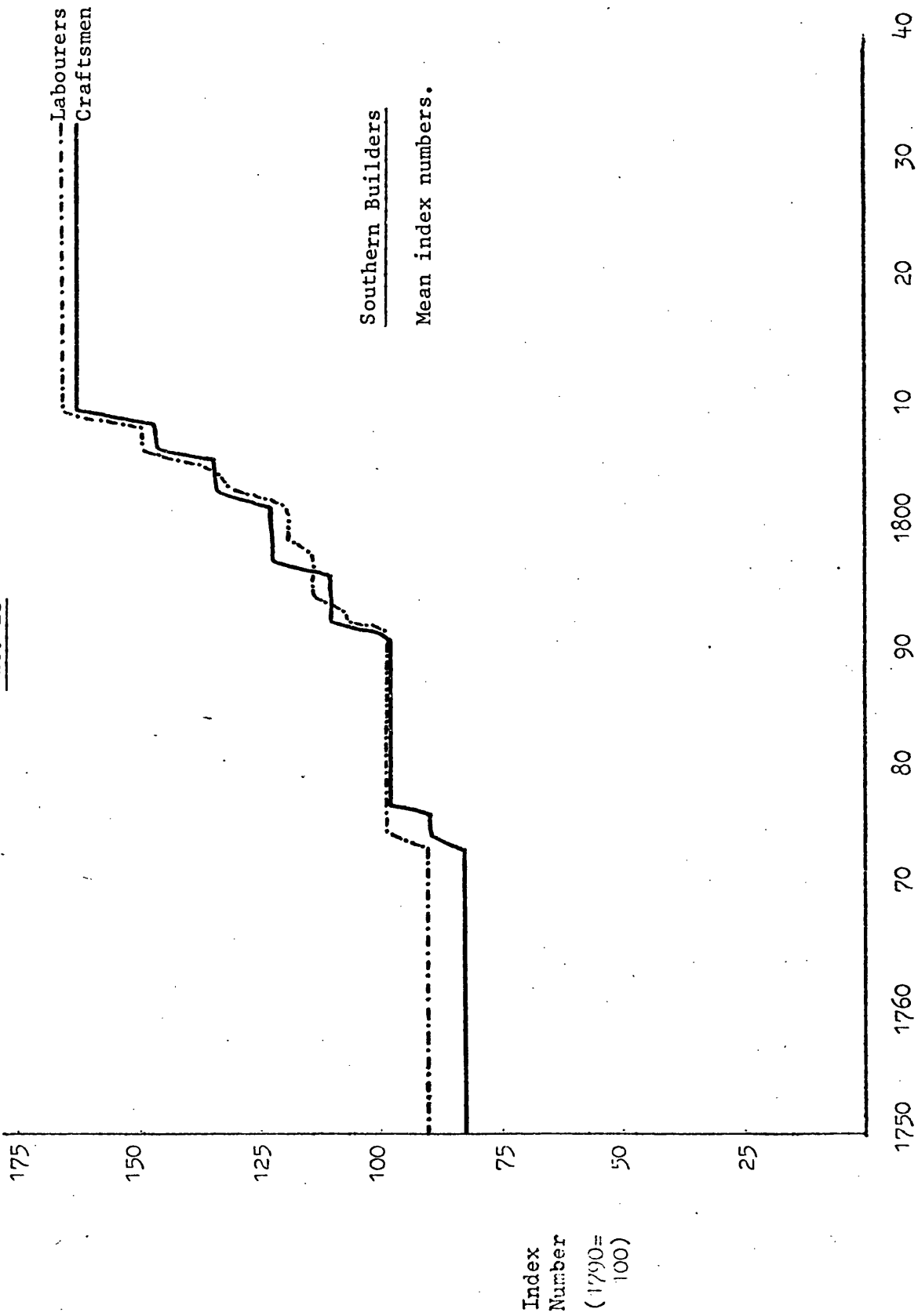
Lancashire Builders

Mean index numbers.



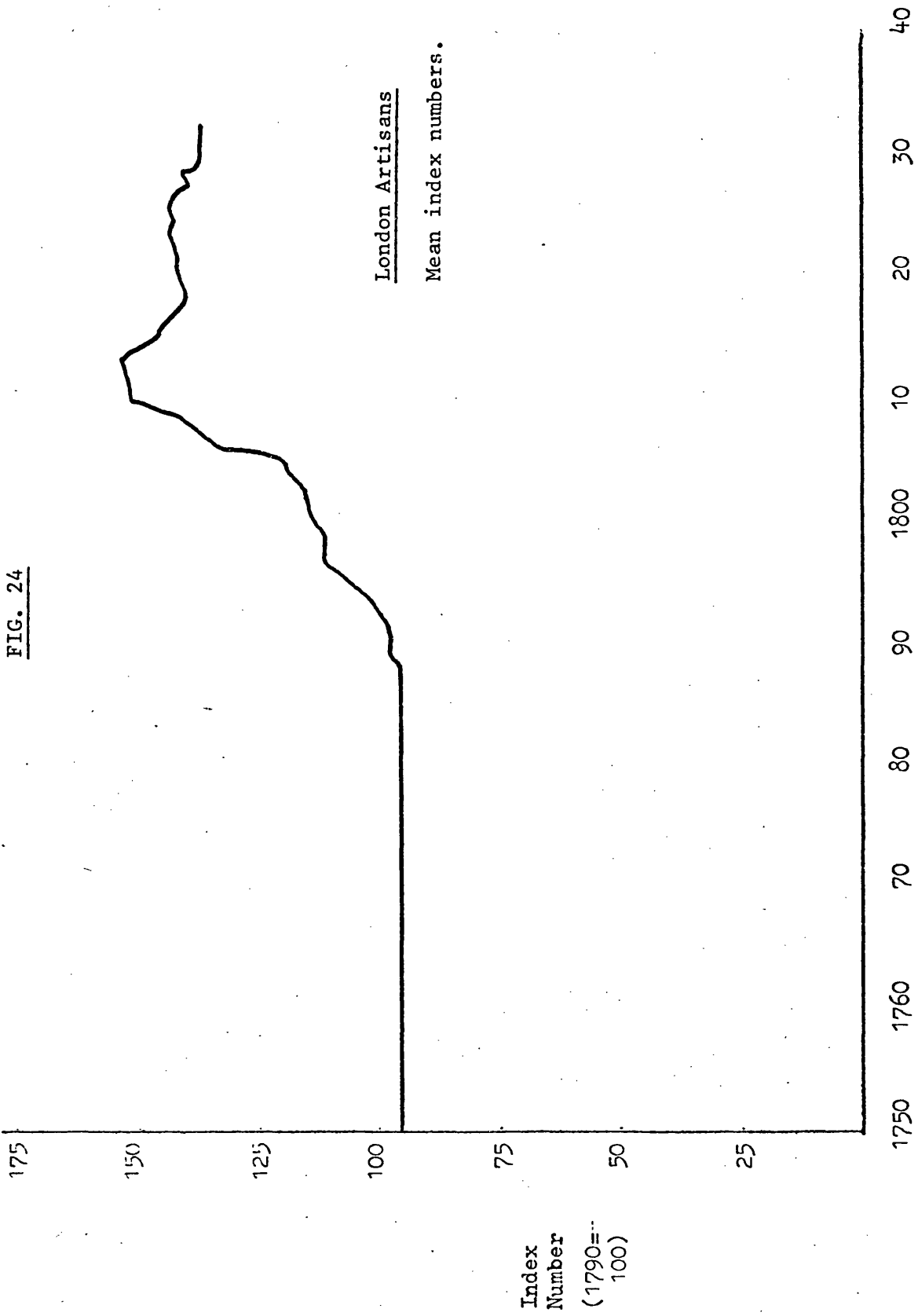
Source: E.W. Gilboy (1934)

FIG. 23



Source: Phelps Brown & S. Hopkins (1956)

FIG. 24



Source: R. Tucker (1927).

The general conclusions which are drawn from the Gilboy work by Deane & Cole¹ contain two main elements: firstly, very little change in wage rates anywhere in the country before the mid-1760s, and, secondly that the rate of increase was lower in the south than in the north of England. Taking the midland data we can confirm the relative stability of rates until the mid-1760s, but note also that the overall rate of increase down to 1790 is much higher than in the south as Table 2 shows.

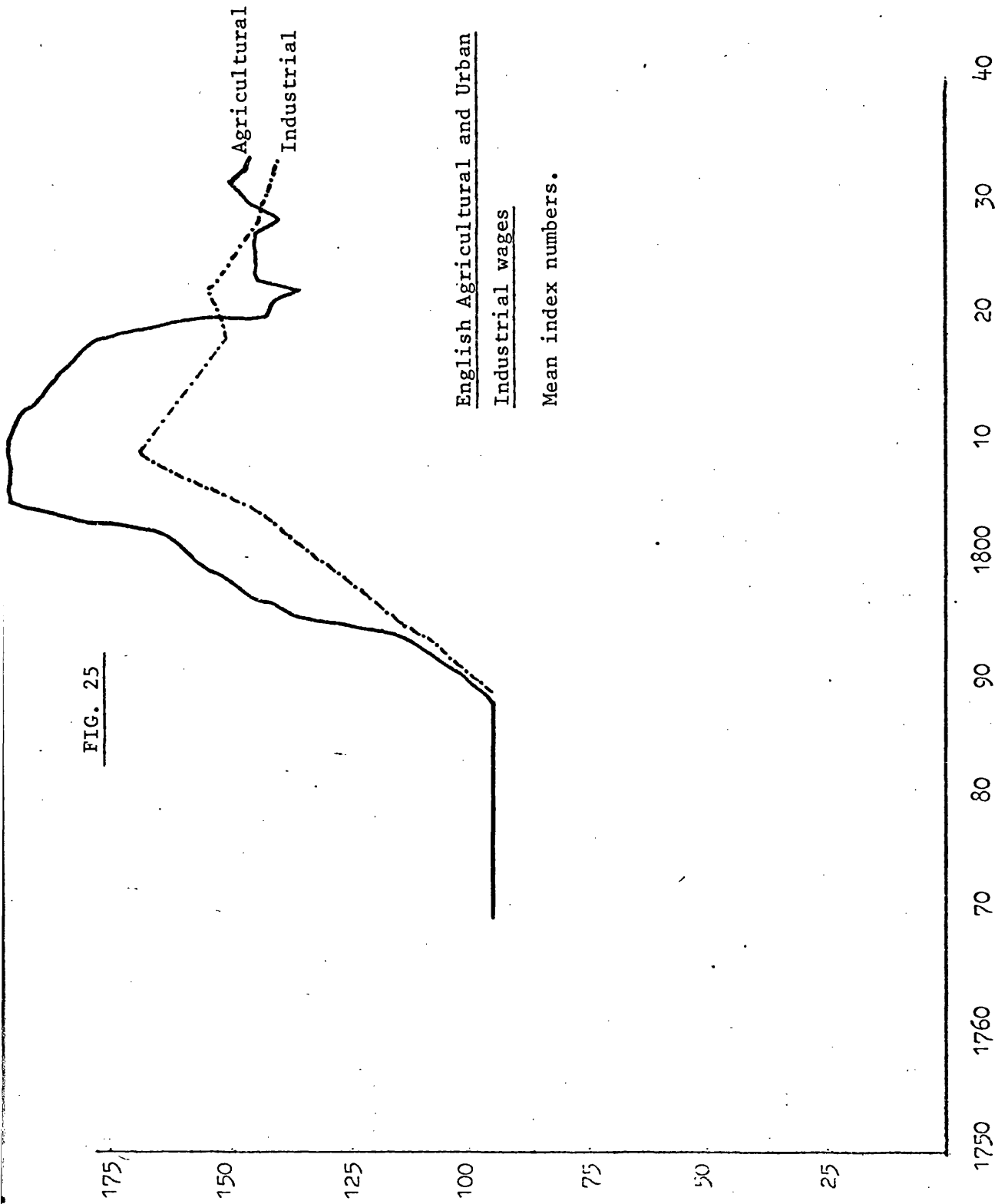
TABLE 2 Building Wages (% change 1750-90)

<u>Area</u>	<u>Craftsmen</u>	<u>Labourers</u>
Midlands	42	52
Lancashire	54	91
London	8	4
Kent	22	24
Oxford	14	16

Turning to the other indexes for estate and road labour the major comparative problem here is that there is very little in a national sense against which to judge the midland data. Bowley's index of agricultural wages (Fig 25) rests on spot observations from Young (1770) and Eden (1795) with the assumption that the increase of about 25% between these dates comes mostly in the early 1790s. Whereas the midland data shows more change than this from the 1770s (although in the 1780s wages are relatively stagnant) producing a rate of increase of 37.5%, or half as much again as the national rate.

1 Op.cit., p.19.

FIG. 25



Source: A.L. Bowley (1895)
G. Wood (1899)

Index
Number
(1790=
100)

The really substantial wage rate increases in the Midlands come in the post-1790 period when they rise by between 85% and 100% to the peak years 1812-14, with the building series being nearer to the 85% level and the estate/road rates nearer to 100%. In fact the source of this difference lies in the years 1812-14 when the latter series rise to a much higher peak (although their fall from this peak was also much faster).

Table 3 places these results in the context of the other main wage series and indicates a faster rate of increase in the Midlands than all the series except Bowley. This particular index is in many ways unique in that the peak rates are paid from a very early date (1806) and the very sharp increase in paces associated with the years from 1809-13 appear to have had no effect at all on wage rates.¹ However if we look at the best national coverage of non-agricultural wages (in the Wood index Fig 25) the rate of increase is very similar to that of the Midland building workers, except that in the Midlands the series reaches a much higher peak in 1812-14, although it should be noted that Wood has no figures between 1810 and 1816² which makes realistic comparison very difficult. It is in precisely this period, after 1810, that the Midland data appears to differ from the other series as the former rises to even greater levels whilst the latter remains at, or only slightly above, its 1810 position.

The very high wage index figures recorded in the Midlands just before the end of the Napoleonic wars were not sustained for very long. In the two series which might be said to represent the rural sector (the estate and

1 Bowley's index for these years is at its most suspect given the gap between his main sources Eden (1795) and the S.C. on Labourers' wages (1824) see J.R.S.S. (1895), p.704.

2 E.J. (1899), p.591.

TABLE 3 % Increase 1790 - 1812-14

<u>Midlands</u>	Building craftsmen	83
	Building labourers	86
	Estate labourers	97
	Road labourers	94
Wood	Town workers	70
Tucker	London Artisans	54
Phelps	Building craftsmen	66
Brown	Building labourers	68
Bowley	Agricultural workers	96

road workers) rates fall quickly after 1814 and although the building index holds up for a little longer, it too falls quickly to a trough in the years 1822-23. As might be expected the skilled builders rate does not fall as far as the other unskilled workers.¹ Table 4 shows the immediate post-war decline in the perspective of the other indexes and again illustrates the

TABLE 4 % Decline 1812-14 - 1822-3

<u>Midlands</u>	Building craftsmen	-13
	Building labourers	-24
	Estate labour	-24
	Road labour	-29
Wood	Town workers	- 9
Tucker	London Artisans	- 7
Phelps	Craftsmen	no change
Brown	Labourers	no change
Bowley	Agricultural workers	-29

faster rate of change in the Midlands (although this is now a decline) relative to the other main series. Also once again there is a marked similarity

¹ See the chapter on occupational differentials below, Ch.6.

between the two mainly rural series for estate and road labourers and the Bowley index of agricultural wages. The smaller reduction in skilled rates is also seen and the absence of any decline at all in the Phelps Brown index is reminiscent of the position noted above in the Leicester index.¹

In the years after this trough all the series move upwards again in the mid-1820s (although the strength of this upward recovery varies for each series) only to falter and decline down to 1834. The pressures of rural underemployment reflected in rapidly rising poor rates obviously had a very serious effect on payments made to labour on the roads, and this is seen in the wage index which barely recovers at all before falling away badly in the early 1830s.

Table 5 compares the wage levels in the years 1832-4, for the midland and the other published series, with the pre-war position. This shows that building craftsmen in the midlands were able to retain a larger proportion of the wartime increase in a similar way to the Phelps Brown index for builders in the south of England. The overall increase over the 1790 level is much higher than either the London artisan series or the Wood index of town workers, whereas the building labourers do not retain quite as much as their southern equivalents although they too gain more than either Tucker's London Artisans or Wood's town workers. Estate labour in the midlands also appears to have done better than the national average (represented by the Bowley index) despite the decline of the later 1820s. Indeed it is only the road labourers whose rates appear to have slipped back faster than the other main series.

This review of the more important trends in midland wage rates has shown that up to 1812-14 there was a noticeably faster rate of increase than

1 See above p.80.

TABLE 5 % Increase 1790 - 1832-4

<u>Midlands</u>	Building craftsmen	73
	Building labourers	52
	Estate labour	60
	Road labour	35
Wood	Town workers	44
Tucker	London Artisans	39
Phelps	Craftsmen	66
Brown	Labourers	68
Bowley	Agricultural workers	50

is shown in the Gilboy series for southern builders or London Artisans or the Wood index. The Gilboy data for Lancashire up to 1790 shows an even faster rate of increase for builders than in the Midlands, but it is not possible to follow this comparison into the 19th century in the absence of the wage data. As far as the estate series is concerned there appears to have been a faster rate of increase in the Midlands (vis a vis the Bowley index) from 1770-90 but thereafter the two series are remarkably similar rising by 96% and 97% respectively to a wartime peak and then falling by 24% and 29% down to 1822-3. Whereas the other Midland rates fall faster than the wider series but also recover more strongly down to 1834. Thus the changes in wage levels in the Midlands series for building and road labour appear more dramatic although at the end of the period, in 1834, only the road labourers show a lower overall increase over 1790 than the other series which have a wider national coverage.

These observations would suggest that the Midlands improved its position relative to other areas in terms of wage rates in the late 18th and early 19th century and it is with this notion in mind that the discussion turns to absolute wage levels rather than relative trends over time. Once again,

however, the major difficulty becomes one of finding an acceptable standard against which to judge the Midland data - acceptable in the sense of a consistent series over as long a period as possible. No absolute figures are given by either Tucker or Wood so there is little choice but to use Phelps Brown, Gilboy and Bowley.

The long series of building wages in southern England produced by Phelps Brown and Sheila Hopkins¹ was based mostly upon the published work of Thorold Rogers for the years down to 1700 and the Gilboy and Bowley data thereafter. From 1750 to around 1800 the series for southern England is based on observations from Oxford, Maidstone and London but in the 19th century the main element becomes Bowley's index of London building wages.² Rather than compare the Midlands with the specific areas of Gilboy's data I have taken the main Phelps Brown index, together with the Lancashire building series from Gilboy, and these are compared in Figures 26 and 27.

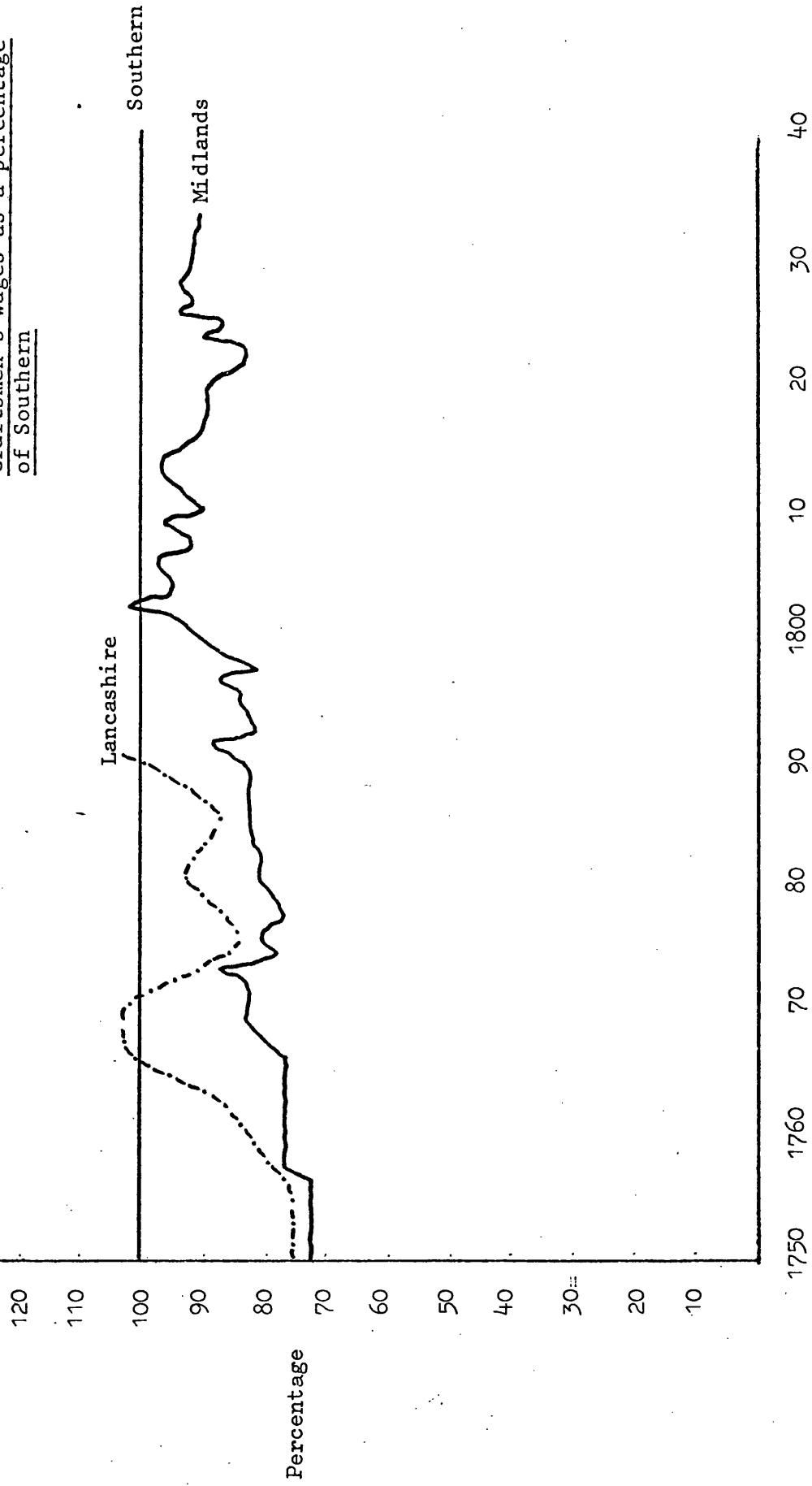
The regional differential between skilled builders in the Midlands and the south closed over the whole period from 1750-1834. In the 1750s a skilled builder in the Midlands received about three quarters of the rate being paid to his southern counterpart, but by the early 1830s this had risen to 90%. Looking at the Lancashire index up to 1790 the main feature is that this closes on the southern rate at a faster pace, leaving the Midlands well behind after having been very close in the early 1750s. Building labourers in the Midlands also caught up on their southern equivalents over the period but within lower limits than their skilled colleagues: from about 65% of the southern rate in the 1750s to 83% in the early 1830s. This steady

1 Economica (1955).

2 J.R.S.S. (1901).

FIG. 26

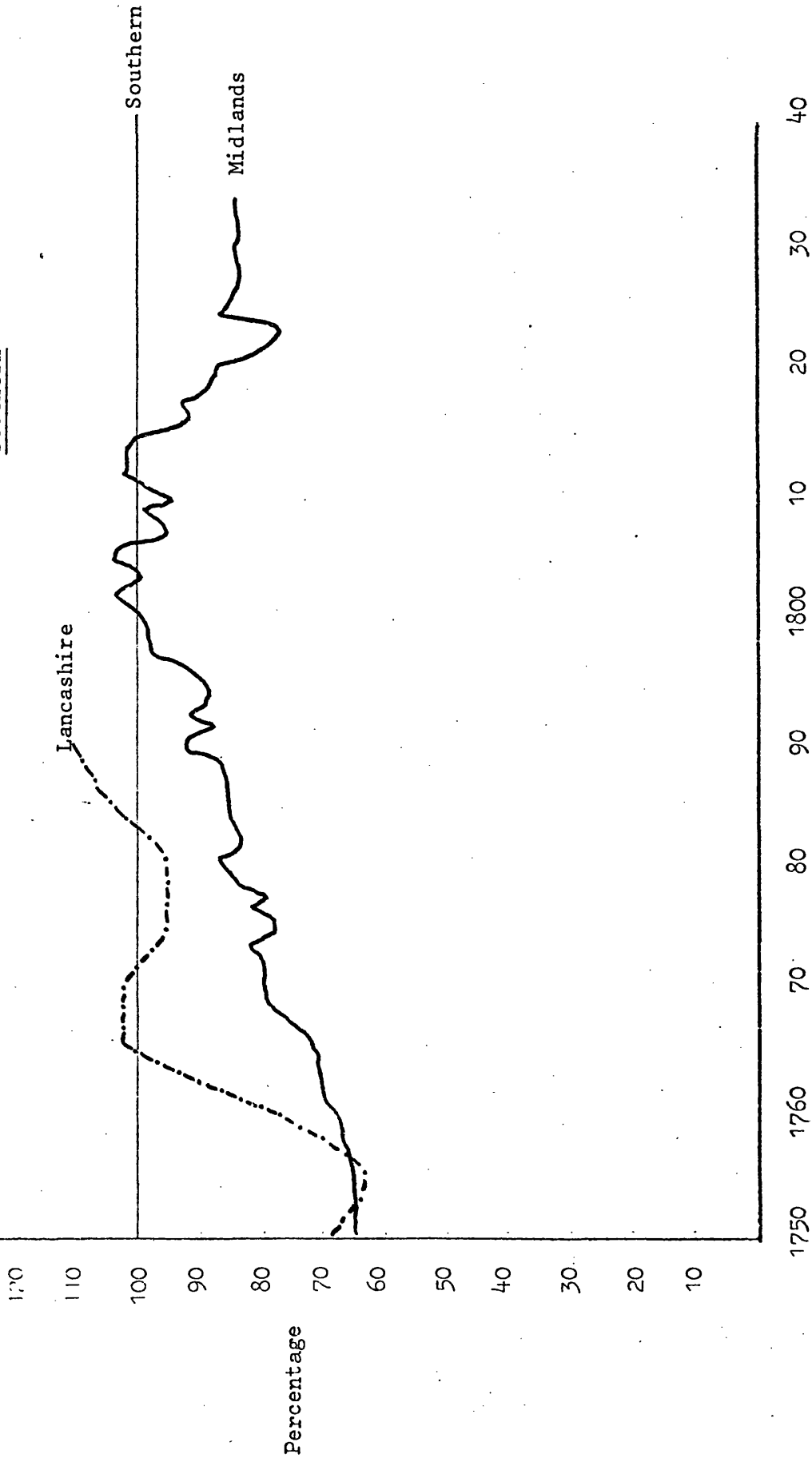
Midlands and Lancashire building
craftsmen's wages as a percentage
of Southern



Sources: E.W. Gilboy (1934)
Phelps Brown and S. Hopkins (1956)
Appendix 1

FIG. 27

Midlands and Lancashire building
labourers wages as a percentage of
Southern



Sources: E.W.Gilboy (1934)
Phelps Brown and Sheila Hopkins (1956)
Appendix 1

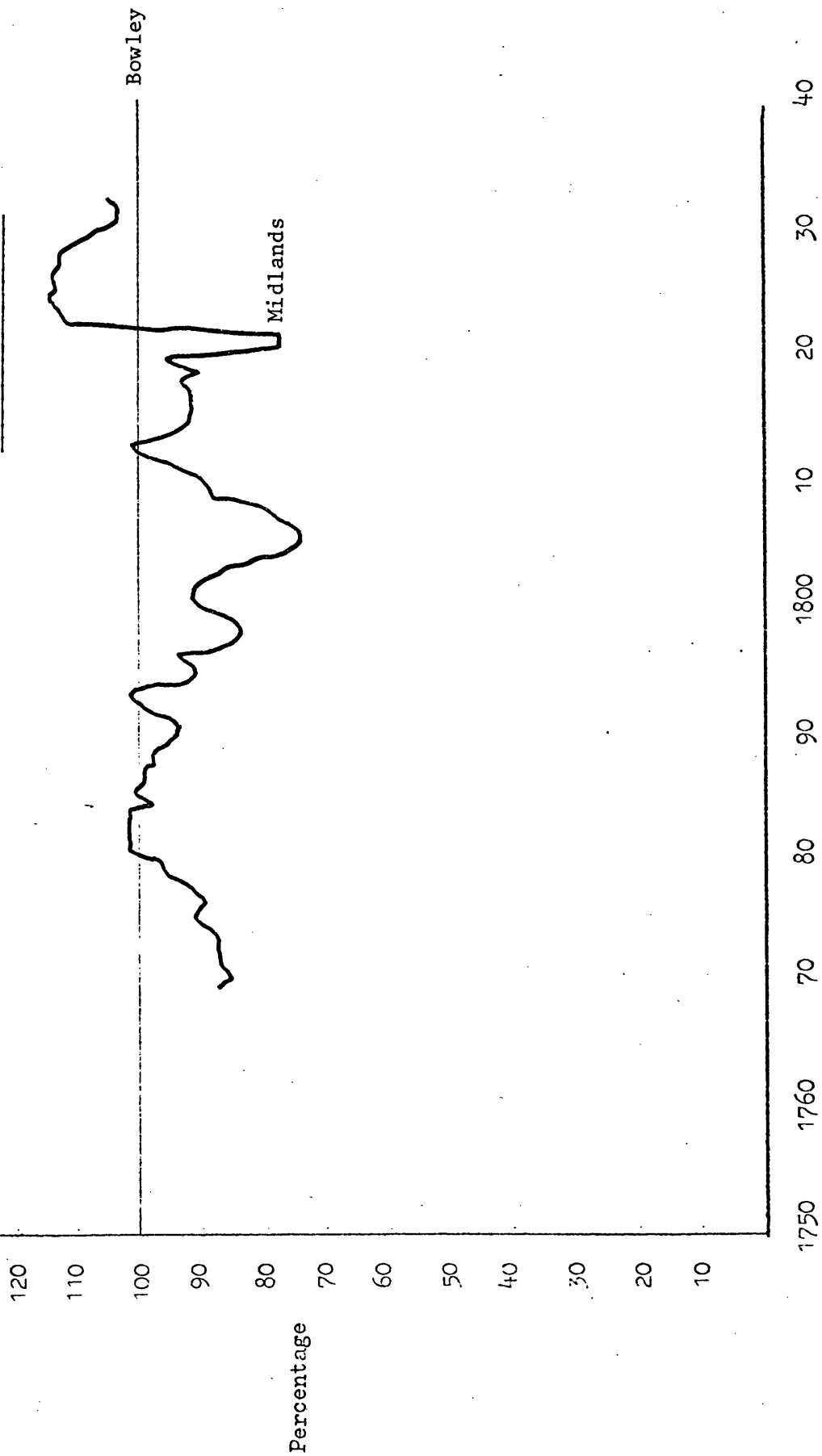
rate of increase contrasts markedly with the Lancashire labourers whose rates jumped very sharply in the 1760s and 1780s to overtake Midland rates in 1790 by 17% and southern rates by 10%.

Thus both Midland and Lancashire builders were closing the gap between them and their southern counterparts, although in the Midlands the pace of this closure was much slower. It is also perhaps worth noting that both of the building labourers indexes moved quicker than the skilled index from 1750 to the 1800s, indicating a greater degree of pressure on the unskilled labour market. This trend is maintained during the French wars as Midland building labourers gain on their southern colleagues at a much faster rate than the building craftsmen. But, after 1815, the labourers rates fall faster so that in the early 1830s their wages are 83% of southern labourers, whereas the skilled builders are paid 90% of the southern skilled rates. Looking at the whole period therefore the overall regional differential between the Midlands and the south closes for both skilled and unskilled builders, but in the case of the latter the significant erosion of the war is not sustained although the gap is still reduced from 37% in 1750 to 17% in 1834. For the craftsmen the differential narrowed from 28% in 1750 to 10% in the 1830s.

Turning to the agricultural workers a comparison of Midland estate wages and the Bowley index (Fig 28) shows almost the opposite trends from these in the building index; the Midland workers fall way behind the national index in the early years of the war, but then push ahead beyond the national index after 1808. The problems involved in the use of the Bowley index were outlined above so that too much weight should not be placed on the apparent lag of the Midlands behind the national series from 1790 because the coverage

FIG. 28

Midland Estate Wages as a percentage
of Bowley's index for English Agri-
cultural labourers



Sources: A.L. Bowley (1895)
 Appendix 2

of the Bowley index is so poor throughout the war. Of more general importance is the overall trend of the Midland wage rates in rising from 14% below the national average in 1770 to about 7% above in the 1830s.

These comparisons of regional and/or national averages are fraught with problems of uneven coverage and dispersion, but they do appear to show that the noticeable lag of Midland wage rates in the middle of the 18th century had been eroded by the 1830s; and this would tend to confirm the impression that regional differentials as a whole were contracting as industrialisation proceeded.¹

II

Having examined the position of the Midlands in relation to such national data that exists, the next task is to disaggregate the mean indices and look at changes in wage levels within the region itself. Taking Leicestershire first, the overall impression indicates that wages were fairly high within the range of observations for the region as a whole. The most important series, for Leicester builders (admittedly an institutional series and probably less flexible than the estate builders for other counties especially after 1815)² shows that wages kept well up with the high levels paid in Nottingham and Staffordshire before 1815, and thereafter they are often the highest in the sample. One reason for this must have been the very rapid increase in Leicester's population after 1801³ creating demand for houses despite the

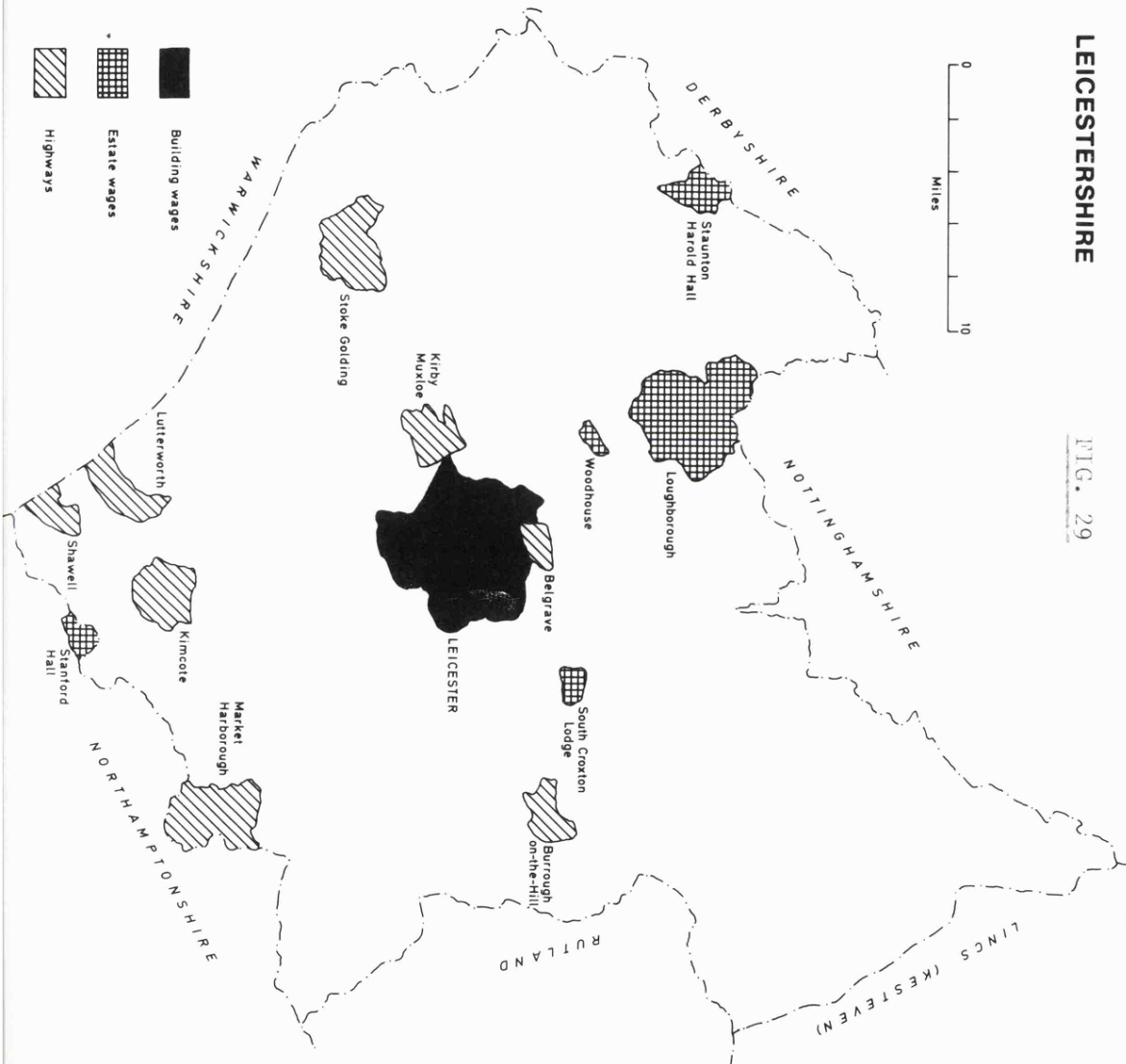
1 Deane & Cole., op.cit., p.18.

2 Some scattered observations from Ravenstone hospital however confirm the typicality of Leicester rates before 1815.

3 Between 1801 and 1831 the rate of growth was twice the national average (32.5% : 16.0%).

LEICESTERSHIRE

FIG. 29



depression in the hosiery industry. It was in the early 19th century that the fullest impact of the canal developments was felt in centralising economic influence on the county town.¹

The very sketchy evidence from estates in this county also confirms these relatively high levels, especially in the 18th century. Data from Stainton Harold, Croxton, Loughborough and Burleigh shows wage rates well above the mean, although the only observations after 1815, from Staunton and Beaumanor Park (Woodhouse) suggest rates had slipped behind the more prosperous farming areas in Nottinghamshire and Staffordshire. It is also noticeable that the observations for the 18th century are mostly from the western parts of the county, where arable farming was more common, and the influence of the urban food markets around Leicester may have been vital relative to the areas in the east of the county, where conversion to the less labour-intensive pastoral system had occurred.

In fact the only observations from this rural eastern sector are for road labourers in Burrough where rates throughout the period were consistently well below the regional mean. This parish was almost completely pastoral² and the very low rates paid and the lack of any really dramatic changes even in the Napoleonic Wars was also noticeable at Shawell, and Kimcote, in the far south of the county, where ~~rates~~ ^{rates} were consistently below mean. Other road labourers series have two quite different patterns: one for what might be called the quasi-urban parishes of Market Harborough, Lutterworth and Belgrave which show rates well above the regional mean, especially after 1815.

1 See above Ch.1.

2 98% of the acreage in the 1801 Crop Returns, Hoskins, op.cit., p.145; and the 1837 Crop Returns, Mills, op.cit., p.165.

The other pattern for Kirby Muxloe and Stoke Golding embodies very sharp increases in wage rates up to 1815 but also equally sharp reductions in the following depression. In the latter parish, this sharp movement ahead of, but then behind, the mean seems to have been associated with the rapid expansion of the domestic hosiery industry which drew labour into the Hinckley area, only to become severely unemployed after 1815 leading inevitably to very low wage rates in the 1820s.¹ However the reasons for the variable pattern in Kirby Muxloe is more difficult to explain as there was little knitting in this parish but there was a very sharp increase in population after 1801² and the soils around the parish were very heavy³ leading to some inflexibility in the post-1815 depression.

The buoyancy of rates in the urban parishes, especially after 1815 when they were between 20% and 30% above the mean, probably stems from their more varied employment structure with the ribbon trade, carpet manufacture and other service trades being added to local agriculture for labour in these open townships. Population in these parishes also grew quickly relative to more rural areas like Shawell, Kimcote or Burrough.

There appears therefore to have been a real difference between the rates paid in urban and rural areas after 1815 as the post-war depression worsened in the 1820s and the impression of Leicestershire as a well paid county rests heavily on the weight of the urban areas. As far as the timing of wage rate changes is concerned, the bewildering variations in the series makes the attempt to generalise particularly hazardous but the bulk of the increases appear to have been paid before, rather than after, 1806. This is certainly

1 Mills, op.cit., p.253, Pye, op.cit., p.431, and above Ch.1.

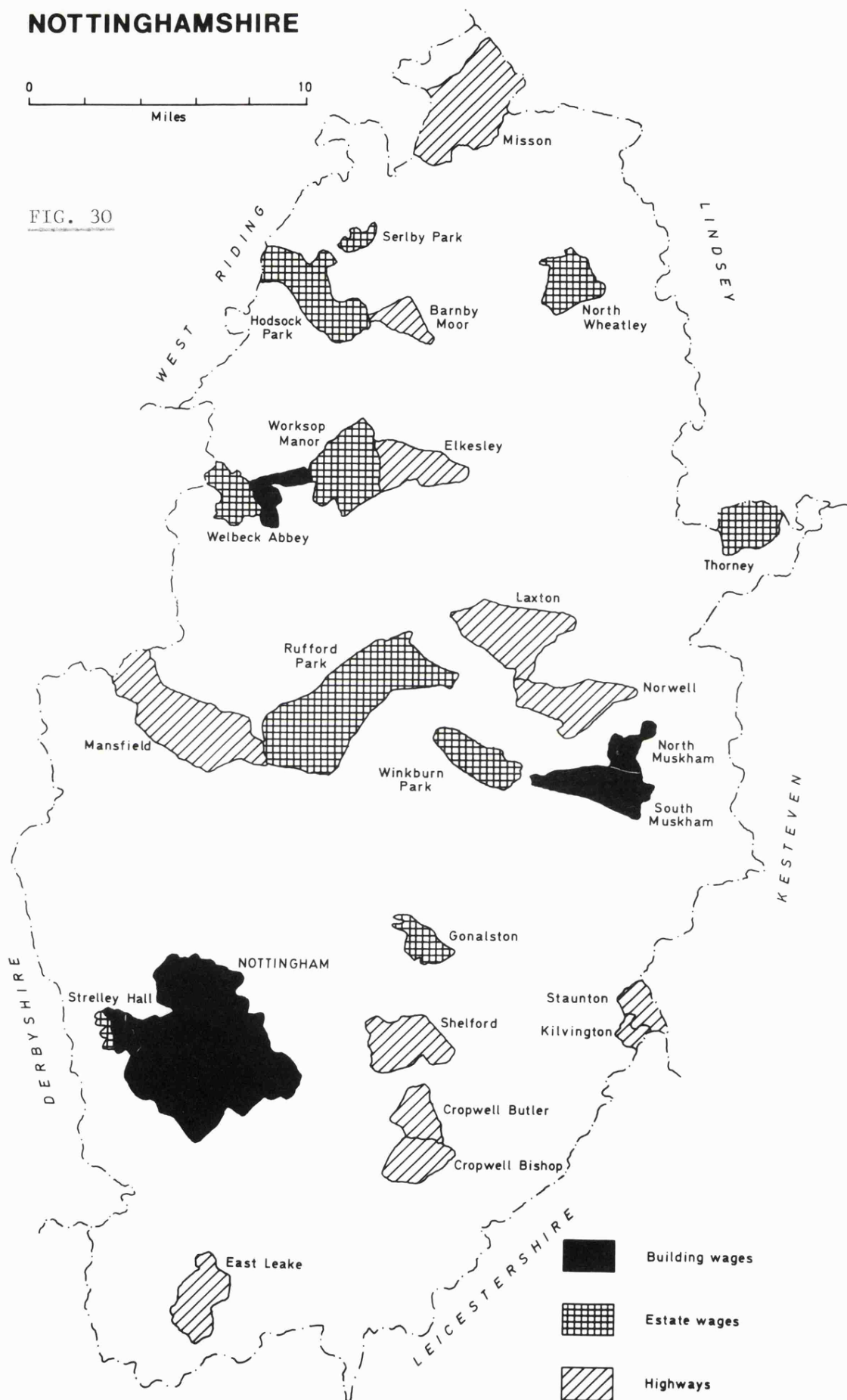
2 Mills, ibid.

3 Curtis, op.cit., p.86.

NOTTINGHAMSHIRE



FIG. 30



in contrast to other areas such as Northamptonshire, and could indicate lower levels of surplus labour in the 1790s. Before^{the} 1790s, the later 1760s and early 1770s appear as a period of fairly rapid increase throughout the county, whereas after 1815 the pace of wage reduction varies very much as the above comments have shown.

The position of Nottinghamshire as one of the most industrialised counties in England during the first third of the 19th century¹ suggests that wage rates would have been fairly high and this is confirmed by the data presented above. This impression is much clearer in the building and estate series, although the road labourers series are so poor that very definite conclusions are difficult to make. Wage rates in building were consistently among the highest paid in the region throughout the period but go even further ahead of the mean particularly after 1790. At Strelley, just outside Nottingham wages rise very quickly in the early 1790s and were undoubtedly associated with the rapid expansion of the coalfield area around the Erewash Valley, which was stimulated by the construction of the canal complex in this western part of the county.² There is further evidence from Strelley and Nottingham that the pressure was greater on unskilled rates confirming the demand for canal labourers as well as the rising employment levels in mining and agriculture.

The buoyancy of building wages in Nottingham is maintained throughout the war and on into the 1820s, as population grew at rates above the national average despite the problems of overcrowding within the city walls.³ After

1 - J.D.Marshall, op.cit., p.58, and refer to occupational tables in Ch.1.

2 See above, Ch.1, p.38.

3 See S.D.Chapman, passim, and above, p.49.

the war the spectacular boom in the lace industry seems to have offset the depressive effects of the hosiery slump and led to further pressure on the unskilled rate in the mid-1820s when the patent expired on Heathcoat's process,¹ and by the 1830s although both skilled and unskilled wages were higher than the mean, the latter were very much higher (20% above relative to 10% for skilled workers).

Other estate builders in the county, at Muskham, were also paid at rates much higher than the mean, especially the unskilled labourers in the 1800s. However some qualification to these high levels appears in rates paid to builders on the Welbeck Abbey estate, near Worksop where wages fell behind the regional mean very badly in the 1790s. The reasons for this lag appear to have been peculiar to building as the wages paid to ordinary estate workers in no way lagged behind, and they could have been associated with the crippling financial problems of the estate in the late 18th century. These difficulties appear to have checked the pace of the building programme although the fourth Duke retained his interest in the agricultural side of the estate where returns were presumably more financial than aesthetic.²

Wage rates paid to ordinary estate labourers throughout the county and throughout the period were consistently above the mean. Whether the data comes from the north western area at Serlby or Hodsock, where soils were more inflexible, or from North Wheatley or Thorney in the east where the poorly drained clays held up the progress of turnip husbandry, wage rates were high. At Strelley, just outside Nottingham itself, rates were very high, as they were for builders, both during the French wars and in the 1830s, and even at

1 Roy Church, *passim*, and above, Ch.1.

2 A.S.Turberville, *A History of Welbeck Abbey and its owners*, Vol.II. 1755-1879 (1958), Ch.IV and V.

Gonalston and Winkburn in the central clay area, where smaller farm units and the prevalence of a summer fallow made agriculture difficult, wage rates were 15% above the mean by 1810.

Some special note should be taken of the Saville estates at Rufford, and the North Wheatley farms of the Middleton family. In both of these places wages were poor in the 1750s and 1760s, when both estates had recently been extended by the enclosure of waste land, and which were used predominantly for timber plantations or sheepwalks. With the general increase in prices in the latter half of the 18th century, and the period of very rapid pace increases from the 1790s, the cultivable areas were extended and much greater interest was taken in the new methods of turnip husbandry. In this area as a whole the arable acreage rose from about 25% in 1790 to over 75% in 1830¹ and given the more labour-intensive nature of production, wage rates went up accordingly. (This trend would appear to have been the reverse of the pattern noted in Eastern Leicestershire where the arable acreage fell dramatically in the face of extended sheep husbandry and rural depopulation soon followed). At both Rufford and North Wheatley wage rates began to rise very quickly from the 1790s as the full impact of the agrarian changes was felt on the labour market.

In the years after 1815 Nottinghamshire estate wages continued to show well above the mean at Strelley, Hodsock and particularly at Worksop manor in the 1820s. But on the Francklin estates at Gonalston the rigidities of the clay soils were sufficient to reduce wage rates to levels only barely above the mean as the predominant wheat crop suffered severe price reductions. This was in sharp contrast to the continued investment noted on the lighter

1 Fowkes (thesis), op.cit., p.545.

sandy soils in the Dukeries where the more mixed system allowed a change of emphasis towards more livestock products and permitted higher wage payments at, for instance, Worksop manor near Sheffield.¹

The series for road labourers are much weaker although at Misson in the far north near Doncaster, and at Mansfield the wage rates are a good deal higher than the mean. In the central clayland areas the years before 1815 saw the payment of wage rates which were above the mean at Laxton and Norwell, but these rates do fall behind in the depressed 1820s. Elsewhere in the county in the poorer southern pasturelands the rates tend to be lower than the mean at East Leake, Cropwell and Shelford. Two parishes on the Lincolnshire border, at Kilvington and Staunton, although they stand next to each other exhibit very different trends with the former 25% below the mean after the war and the latter 5% above it! It might have been that Kilvington was such
 x a small community of 25-30 inhabitants that roadwork was neglected.

Within the county as a whole the city of Nottingham, the prosperous agricultural areas of the Dukeries, and the parts of the north and west bordering the coalfield continued to pay high wages even after the depression in 1815. On some of the more inflexible soil areas in the central and southern parts of the county the effects of the depression were sufficient to drive rates below the mean, although the overall impression would agree with Marshall that this county was not '... unduly poverty-stricken'.²

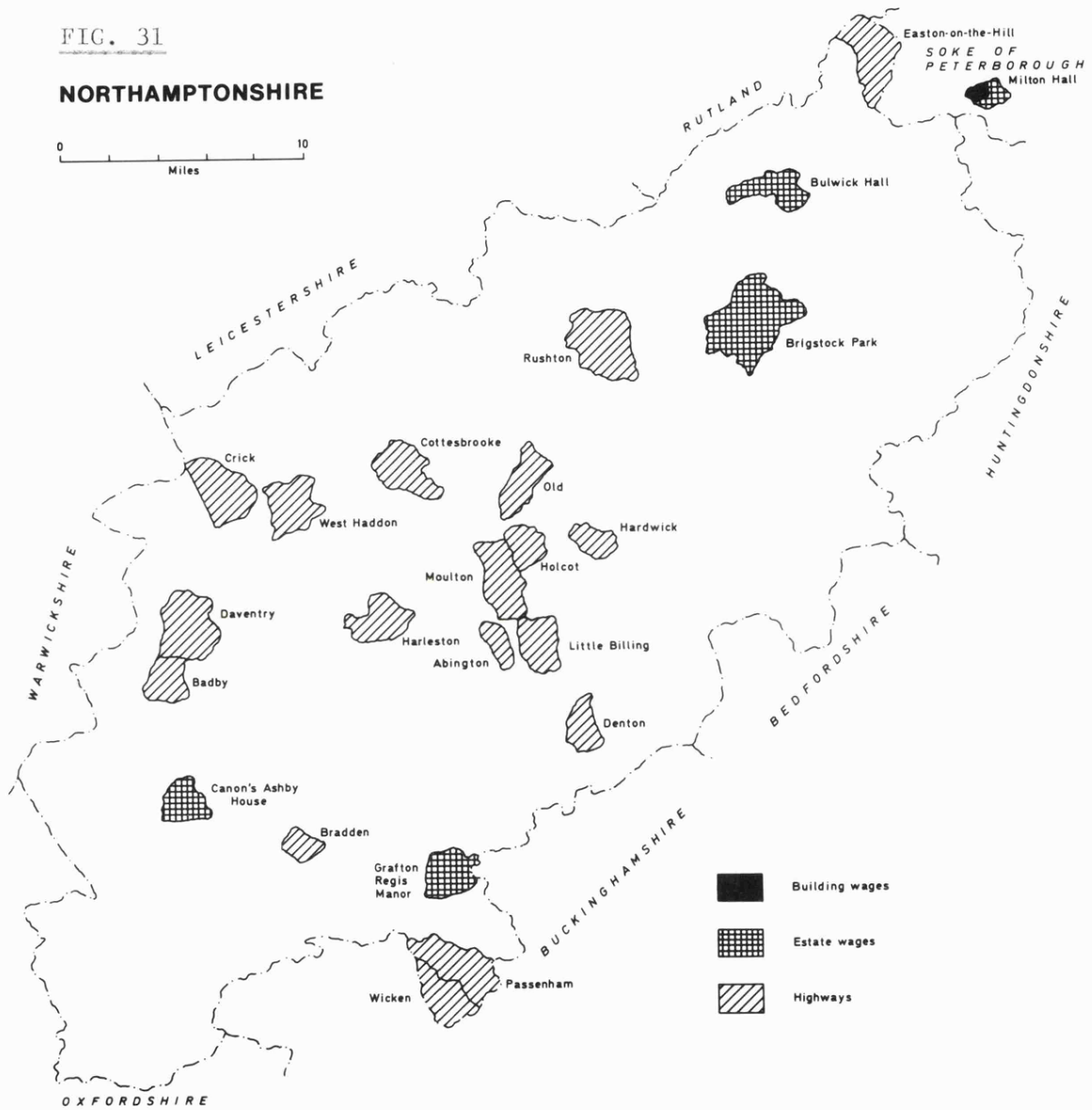
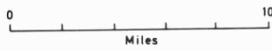
As far as the timing of the wage changes were concerned the pattern is very similar to Leicestershire being concentrated in the later 1760s and early 1770s, then the 1790s and early 1800s with less change thereafter

1 Fowkes, ibid., p. 552.

2 Op.cit., p. 58.

FIG. 31

NORTHAMPTONSHIRE



until 1815. In the post war years the rate of wage reductions did vary widely, as did their recovery in the later 1820s, depending on the responsiveness of the rural economy to the depression in agriculture.

In sharp contrast to the fairly high wage levels noted in Leicestershire and Nottinghamshire, the overall impression that emerges from the Northamptonshire data, is the extent to which wages lag behind mean levels; although there is some evidence to suggest that the extent of this deficiency may have been reduced in some areas by the 1830s.

After 1750 wages in Northamptonshire as a whole tended to rise much more slowly than in other parts of the Midlands so that by 1790 only four of the twenty-five observations in the county were above the mean. (The four were from parishes just outside Northampton itself and even they were only 4% above the mean). At the end of the period, in the 1830s, however, eight out of fifteen observations are at or above the mean, although within the other seven there are also some extremely low rates.

On the Fitzwilliam estates at Milton, just outside Peterborough, there is evidence of both of these trends for builders and the more agricultural estate workers. Building wages lagged behind the mean to an increasing extent, especially from the 1820s when their rates were 25% less than those being paid in Leicester and Nottingham. But for the agricultural workers their wages, which had been below the mean throughout the period of the French wars, recovered remarkably in the 1820s to be 20% above the mean in 1834 when the rates were second only to Worksop and Trentham. Exactly why there was such a difference in pattern on the same estate is difficult to discover, although a similar situation was noted above at Welbeck Abbey in Nottinghamshire. There is certainly some evidence¹ that improvements

1 Steane, op.cit., p.227.

continued to take place in the Soke of Peterborough after 1815, with large scale drainage schemes in the Fens continuing within a flexible farming framework provided by the lighter soils which were more suited to the production of turnips. There could also have been a lull in estate building at Milton at this time although why building labourers were satisfied with wages which were less than their estate colleagues on the farm and in the gardens is difficult to understand.

Elsewhere in the county the estate labourers series confirm the impression that wage rates fell increasingly behind the regional mean as the 18th century progressed. Observations from Grafton and Canon's Ashby in the far south east, from Brigstock and Bulwick, to the north of Kettering, all show wages which continue to slip behind the mean especially in the 1790s, when wage rates in this area failed to rise at the same pace as in other parts of the Midlands.

At both Milton and Grafton wages during the French wars moved only slowly, relative to other rates in the region, until 1810 when they both rose very quickly to a peak in 1813. In the post war years, the Milton rate remains very high as we saw above, but the Grafton rates sink very sharply in the 1820s to reach one of the lowest levels in the entire sample, some 20% below the mean in 1834. This decline, and the extensive use of roundsmen in this area reflects the inability of agriculture in this area of cold, stiff clay loams to cope with the drastic fall in wheat prices after 1815.¹

For the road labourers there appears to have been a similar pattern to that noted in Leicestershire where parishes closer to the urban areas and especially Northampton, were paid at rates which were much higher than those in more distant, rural parishes. Chapter One commented on the increasing

¹ See above, Ch.1.

dominance which Northampton exerted over the economy and distribution of population within the county once the transportation breakthrough had released the area from geographical constraints of distance.¹ The rate of growth of Northampton's population was particularly rapid being half as much again as the national average between 1801-21, and three times the national figure in the 1820s when the rapid expansion of the domestic shoe industry reached its height. This increase in activity seems to have had an influence on road labourers wages as a definite pattern of higher rates can be seen around Northampton at Abington, Holcot, Moulton and Denton, in contrast to the lowly wage rates paid in Passenham, Wicken and Bradden in the South or West Haddon, Crick and Badby in the West, or Easton and Rushton in the North where all the rates were 10%-20% below the mean.

There is, however, one exception to this general pattern at Little Billing, a few miles to the east of Northampton where fairly low rates were paid but the extremely small size of the parish (60-70 people in the early 19th century) could have accounted for this as may have been the case in Kilvington in Nottinghamshire. The only other urban series comes from Daventry where rates were also above the regional mean.

Thus the overall range of wage rates within Northamptonshire was certainly not reduced over the period 1750-1834 with the sharp differences in estate wages between Milton in the north and Grafton in the south, or in road wages between Bradden in the south and Abington near Northampton. But what appears to have happened is that the more varied employment pattern nearer to the towns of Northampton or Peterborough or Daventry pushed local wage levels beyond the mean, whereas in the rural areas wages fell even

1 See above p. 37 and C.D.Morley, op.cit., p.20.

FIG. 32



further behind. In this county the predominance of agriculture gave way only very slowly and it was not until the boot and shoe industry began to expand in Northampton, that many alternatives were available. Hence the importance of the timing of the changes in wage rates which came very late in the war years from 1809/10 onwards in contrast to the sharp upturn from the 1790s in other parts of the Midlands. This could indicate the existence of a labour surplus until either prices had risen so much to tempt farmers to extend cultivation over further by 1809, or to compensate workers for such a rapid increase in living costs. Once the war was over and prices fell quickly it was only the areas nearer to Northampton, Peterborough or Daventry that managed to retain much of their wartime gains.

x Estate wages in Warwickshire appear to be similar in many ways to the series for Northamptonshire in that they tend to fall behind the mean x during the 1790s and early 1800s only to soar very sharply around 1810 up to mean levels. This pattern is evident in one way or another in all of the five agricultural series which are based on estates throughout the county. In Packington and Coleshill in the north, wages around the turn of the century were 10%-20% behind the mean, at Easington, in the far south east, they were 7% behind in 1809, at Stoneleigh, near Coventry, 6% behind and at Ragley, near Alcester in the far south west, wages which had been 10% above the mean had fallen behind by the later 1790s. There is therefore little evidence of labour shortage within this estate sector until the late 1800s, which was also the case in Northamptonshire. The precise reasons for this lag are not easy to discover although it is worth noting that population seems to be growing faster than the national average,¹ and poor relief per head in this county in 1802 was much higher than the figures for Nottinghamshire or Staffordshire.² Taken together these factors might

1 Deane & Cole, op.cit., p.115.

2 Blaug, op.cit., pp.178-9.

indicate that labour supply outstripped the demand for its services, especially as the potential for industrial employment was limited to the areas around Birmingham (metal trades) and Coventry (ribbon weaving). This is not to belittle the labour demands inherent in the improvements in agriculture associated with the change to arable farming in the central areas of lighter lands¹ but to suggest that unlike Nottinghamshire these improvements took place within areas that were already well populated, in contrast to the sparsely populated areas of the Dukeries.

However the lag that had developed in these areas by the later 1800s is rapidly made up as wage rates increase by 62% at Packington (1808-12) and 40% at Easington (1809-10). After the war the only estate data comes from Stoneleigh where a particularly sharp fall in wages sends the level below the mean in the 1820s despite the responsiveness of the rich light lands in the area, which again may confirm surplus labour supplies as the county continues to experience above average levels of poor relief.

The only building series comes from the town of Stratford in the south where wages lag behind the regional mean, although the extent of this lag is smaller in the 1830s than it was in 1790 - a feature probably of the relative inflexibility of these institutional rates compared to the estate builders. Some support is given to the notion of a larger labour surplus in this county than elsewhere in the Midlands, by the larger gap behind the regional mean for builders' labourers rather than craftsmen resulting in a widening of the differential from 70% in 1790 to 57% in the 1830s.

Turning to the data for the road labourers in Warwickshire the picture becomes more confusing because the pattern of wage stability in the 1790s and 1800s is broken by parishes, which are often in close proximity to the estates

1 See above, Ch.1, p. 23.

mentioned above. For instance, three parishes on the eastern outskirts of Birmingham, Shustoke, Nether Whitacre and Meriden paid rates which rose very quickly from 1790-1815 to levels which were 15%-20% above the mean; whereas at Packington, which lies between the other parishes very little change took place in wages and ^e~~thys~~ the rate slipped far behind the mean by 1815. Other parishes close to Coventry also gained steadily against the mean during the war years (e.g. Monks Kirby, Baginton, Kennilworth and Willey) but fell very quickly after 1815 despite the flexibility of the lightland farming in the area. Quite possibly the effects of the depression in the Coventry ribbon trades was an important factor here.¹ An equally sharp fall below the mean, after 1815 was revealed at Meriden but in Shustoke and Nether Whitacre the fall was not nearly as severe. Two other parishes in the central districts between Coventry and Warwick, Rowington and Hunningham saw very little change take place in wages and the levels slipped further behind the mean during the 1820s. Parishes, even further south at Longcompton, Barton and Farnborough also fail to pay rates anywhere near the mean levels either before or after 1815, whereas other rural parishes at Pillerton Hersey and Temple Grafton rise quickly down to 1815, but fall dramatically thereafter. A surprisingly high set of wage rates were found from Wolfhamcote, near Rugby, where the levels were well over the mean in this area of rich grazing land, but were also much higher than the rates paid at Badby just across the border in Northamptonshire.

Urban road labourers to some extent confirm the pattern of the other counties, for instance in Warwick wages were very high in the 1820s when the towns fortunes were reviving as a supplier of services to the growing spa resort at Leamington.² Within the orbit of Stratford the small parish of Clifford

1 See above, Ch.1, p.49.

2 See above, Ch.1, p.10.

Chambers recovered to pay rates above the mean by the 1830s, as also did the surveyors at North Field in Birmingham. But at Yardley on the other side of the city the more common pattern of falling wage levels in the 1820s was noted.

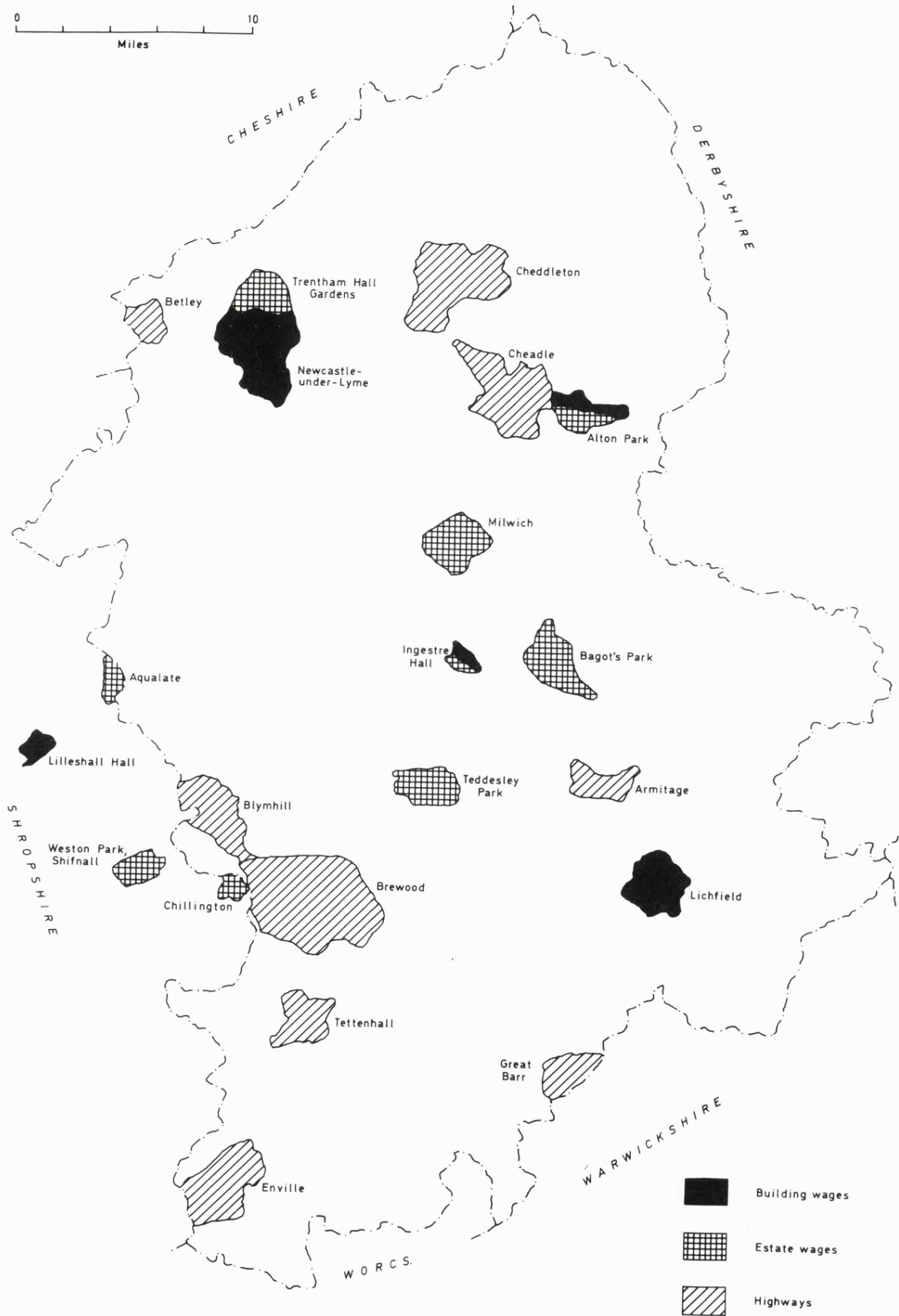
From this diversity of behaviour what conclusions can be drawn? Firstly the apparent delay in the rate of increase in wages during the 1790s on the estates and on all parishes except those very close to Birmingham and Coventry. Secondly the prolonged fall in wage rates after 1815 in many parts of the county although the southern areas appear to fall much faster. Thirdly the proximity to urban areas like Warwick, Stratford and Birmingham may have alleviated some of the wage reductions but this notably did not occur in the Coventry area.

In short the variety of wage changes tended to reflect the variety of economic life in Warwickshire with the more agriculturally dependent areas in the south and east returning much lower rates of increase, but faster rates of decrease in wages. Labour nearer to the wider employment opportunities of the towns could reasonably expect higher rates although there were exceptions where the staple industry was depressed as the ribbon trades were in Coventry.

In Chapter One it was suggested that the economy of Staffordshire had been transformed during the 18th century from the rudest poverty into one of the most industrialised areas of the country by the 1820s. The main elements in this transformation were the vast expansion of Birmingham and the Black Country in the south, the growth of the pottery industry in the north and the significant improvements in agriculture throughout the county. This growth was certainly reflected in the wage data for this area which shows rates as

STAFFORDSHIRE

FIG. 33



high as any in the Midlands up to 1815, although thereafter some parts of the county, especially in the central areas which were more dependent on agriculture, suffered setbacks.

In building the main series came from the Gower estate papers, and they reflected work undertaken to construct and repair urban properties in Lichfield and Newcastle. Both of these series were very high in the 1790s, and although they did not rise as quickly as Nottingham and Leicester in the 1790s, they certainly rose very quickly in the 1800s and at their peak they were well above the mean and only slightly below the very highest rates paid in Nottingham. However after 1815 both series weaken relative to the mean, which at this time was dominated by the institutional series at Leicester, Nottingham and Stratford. This could have been caused by the apparent downward rigidity of rates paid to builders employed by the boroughs, but it may also be a reflection of the growing withdrawal of the Gower family from their urban interests.¹ Even so the scattered rates for the 1830s from Newcastle still place the series ahead of all the other non-institutional building wages.

At Lilleshall, just across the border in Shropshire, the building wages are mostly from work on the estate itself and they lag considerably behind the mean throughout the period. In fact this gap widens considerably in the 1820s when rates for both skilled and unskilled builders are 25%-30% below the mean, despite the extra employment caused by the rebuilding of Lilleshall Hall.²

1 ~ E.S.Richards, 'The Industrial Face of a Great Estate', Ec.H.R., XXVII, 3, (1974), pp.414-30.

2 E.S.Richards, The Leviathan of Wealth (1973), p.15.

Two other shorter series from Alton and Ingestre also do not maintain their high levels after 1815, and once more this is because they fail to reach the rates offered in Leicester and Nottingham.

Unfortunately the coverage of the estate wage series is very sparse before 1790, and the only two observations from Blithfield and Ingestre are below the mean. However, as Chapter One attempted to show, significant changes took place in agriculture towards the end of the 18th century, and these changes were reflected in rapidly rising wage rates in the more productive lighter soil areas. Observations from Trentham, Alton and Millwich in Northern Staffordshire show that the flexibility of agriculture nearer to the growing urban markets, plus the heavy capital investment from landlords like the Gower family,¹ led to higher wage rates which were sustained even in the post-1815 depression. But in more central districts where the heavy clay soils made expansion difficult, except in times of very rapidly rising prices, wage rates lagged behind the mean for long periods especially in the 1820s. At Teddesley, for example, wages were 33% below the mean in 1810 and only the extensive employment created by enclosing large parts of Cannock Chase from 1812 onwards forces rates up from these low levels.² In other parts of this central belt at Ingestre, Aqualate, Shifnall and Chillington wage rates were often fairly high in the early 1800s but soon fall behind thereafter. There is no direct wage evidence from estates in the southern parts of the county although Sturges has shown that on the Sandwell Estates of the Dartmouth family, just outside West Bromwich, the urban influence

1 - E.S.Richards, 'The Leviathan of Wealth in West Midlands Agriculture 1800-50', Ag.H.R., 22 (1974), pp.97-117.

2 - Wise (B.A.), op.cit., p.274.

immediately to the south was sufficient to alleviate the worst effects of the post-war depression.¹

This geographical distinction between the northern and southern industrial areas, and the central agricultural zone, is also illustrated in the road labourers series. Three parishes very close to the Black Country, at Tettenhall, Great Barr and Brewood all paid rates between 20%-30% above the mean, whilst in the North at Cheddleton, Cheadle and Betley equally high wages were found. In contrast, in the central parishes such as Blymhill or Enville in the west, or Armitage in the east, the rates were below the mean just before 1815 and fell increasingly behind in the 1820s.

Many areas of this county therefore experienced significant wage increases after the 1790s, but their pace was different and their ability to retain the increase after 1815 also varied. In those areas in the central belt of heavy clay lands wages on the whole rose more slowly to 1815, but fell much faster thereafter. It was in these areas that the costs of maintaining production were that much greater as landlords were forced to invest much more capital in drainage schemes and even the wealth of the Gower family was severely stretched by the costs of these schemes.² In fact the motives for such investment was often based on non-economic values, given the severe fall in corn prices: at Lilleshall and Trentham, James Loch pressed for extensive drainage improvements in order to provide winter employment and thereby reduce the possibilities of rural unrest.³ Although this investment provided

1 Op.cit., Ph.D thesis, Ch.4.

2 Richards, 'The Leviathan', op.cit., p.12.

3 E.S.Richards, 'Captain Swing in the West Midlands', I.R.S.H. (1974).

more employment and thus increased yearly earnings, it did not seem to produce any increase in wage rates, certainly at Lilleshall, which would indicate the depths of underemployment in this area. On many of the smaller estates, the landlords did not possess the resources to improve their farms, and the extensive rent reductions forced severe retrenchment on estates such as Shifnall, Aqualate and Ingestre.¹

In the more varied employment conditions of the south with the Birmingham hardware industries and the heavy coal and iron sectors of the Black Country, labour market pressures certainly resulted in higher wage levels. This pressure continued, albeit intermittently, through the 1820s when labour had to be brought into the area from South Wales to meet the demand.² That these levels belied periods of unemployment was undoubtedly true as far as earnings were concerned³ but they do appear to have pushed wage rates in surrounding areas for non-industrial employment up to higher levels.

Equally in the northern areas the attraction of the potteries, and also the interdependence of mining, textiles and mixed farming on the north eastern moorlands⁴ provided a wide range of occupations, and this also seems to have produced higher wages on the roads and on the estates.

In Staffordshire therefore the dual focus of economic activity appears to have been a major cause of the differing levels, and speed of wage increases.

1 Sturgess, op.cit., Ch.11.

2 T.J.Raybould, The Economic Emergence of the Black Country (Newton Abbot 1973), p.187.

3 G.J.Barnsby, 'The Standard of Living in the Black County in the 19th Century', Ec.H.R., XXIV, 2, (1971), pp.220-39.

4 R.W.Sturgess, N.S.J.F.S. (1961).

III

The evidence presented in the first section of this chapter tends to confirm the impression that inter-regional wage differentials were narrowing in the later 18th century. Both the Midlands and the North of England were beginning to close the gap which existed between their wage levels and those in the southern countries.

However, the tool of analysis used in this first section, a mean index of all Midlands observations, is a notoriously blunt instrument because it often masks a good deal of dispersion. Chapters 2, 3 and 4 examined this dispersion by using graphs of the standard deviation of these series,¹ and the second section of this chapter has attempted to offer some explanation of these variations of wage rates around the mean. From this examination several general conclusions emerged: that wage rates tended to be lower in the southern part of the region;² that there were notable differences in wage rates paid between urban and rural areas; and that there was some erosion of wage levels in the extreme eastern (Leicestershire uplands) and western (Shropshire border) parts of the region.

There were also many observations which did not fit into any of these categories, but produced very marked differences in wage rates within

1 See above, p.74, p.94 and p.110.

2 To some extent confirming Caird's map of High and Low wage areas - see the frontispiece to English Agriculture (1851).

close geographical areas. This seems to suggest that the labour market was still very fragmented, and should remind historians of the dangers of using areas which may be too large to permit very general comments on trends in wage levels. Further evidence on the problems of '....sacrificing the finer points of detail in order to discover the overall pattern...' ¹ will be illustrated in the next chapter on skill differentials in the building industry. The final chapter will suggest that these local variations in wages persisted through the 19th and into the 20th century, and will attempt to develop a theoretical framework for the labour market to take account of these variations, rather than treating them as obsolete exceptions to the inevitable trend towards the equality of wage payments.

1 Hunt, op.cit., p.56.

Chapter VI

Occupational Wage Differentials in Building

I

One of the most important features of the building industry in the later 18th and early 19th centuries, was the enormous number of small firms, each operating within a fairly narrowly defined local market.¹ This preponderance of small units has remained a feature of the industry in the 20th century, although the possibility of gaining economies through large scale production has seen the development of some very large firms giving the industry a highly skewed distribution of firm sizes. These potential economies were especially associated with the technical changes that altered the industry's production function in the later 19th century: with the introduction of steel girders, increased use of manufactured materials like cement, and the adoption of woodworking machinery. However, the impact of these changes made little difference to the organising of the industry in the first half of the 19th century.

This, indeed, is a second important feature of building: the absence of labour-saving technical changes which prevented the emergence of the kind of industrial conflict which was common in the textile and engineering trades, where carefully nurtured craft privileges could be swept away by the adoption of new machinery.² These fairly static patterns of labour utilisation went alongside the continued organisation of the industry on

1 In the first census which examined the size of firms, 1851, there were over 23,500 employers in the building industry with over half employing less than 10 men and over 10% employing one man only. P.P. 1852-3, LXXXVIII, 1, Table XXX.

2 K. Burgess, The Origins of British Industrial Relations (1975), p.86.

particular craft lines rather than on an industry-wide basis. Separate trade clubs for masons, carpenters, bricklayers or plumbers continued to exercise control over local standards, suggested common hours of work, working conditions and in some cases rates of wages. They also acted as local labour exchanges by providing a point of contact for the trades, and in social terms they operated friendly societies for the relief of distress caused by sickness or unemployment. Local knowledge within these clubs also made it easier to regulate apprenticeship regulations, and to guarantee the immunity of the local trades from outside competition by excluding blacks or strangers.¹

Co-operation between members of the lodge and the interchange of information, gave rise to a cohesive spirit in '.... local specialised crafts that was difficult to resist'.² This spirit was facilitated by the continually changing dividing line between employer and employee as the '.... masters of today were frequently the workers of tomorrow'.³ There was a bond of common interest in ensuring work standards and controlling entry to the trade.

The organising of the building operation itself was often in the hands of a surveyor who held overall responsibility for the job, but who sub-contracted work out to separate craftsmen for each operation. These time-honoured practices, however, came under increasing pressure towards the end of the 18th century as the demand for new building associated with industrialisation and urbanisation, increased the profit potential in

1 R.W.Postgate, The Builders History (1923), p.27.

2 S.Pollard, A History of Labour in Sheffield (Liverpool 1959), p.67.

3 Postgate, op.cit., p.29.

the industry. There emerged a group of larger contractors who undertook to complete the whole building process with their own employees and engaged in speculative building to a much greater extent.

Although it would be wrong to suggest that these larger contractors came to dominate the industry, it would not be an exaggeration to suggest that their emergence undermined the control of the local trade clubs, by breaking the cohesive spirit among the master craftsmen. Particularly in the post-1815 depression, when the larger contractors were able to reduce their costs more easily by using inferior labour and methods, the trade clubs fought desperately to maintain standards. They even attempted to link their crafts in the Builders Union of 1831, although the depressed economic conditions and the failure to cope with the severe local differences between constituent groups, meant that the union soon crumbled in the face of the growing strength of the larger contractors.¹

The larger contractors did not, even by the 1830s, dominate the building industry where the smaller firms were still the most common, but they had managed to dent the collective control which had been exercised by the local craft societies. In fact, this loss of control was most noticeable in the newly expanding areas, whereas in the older centres local clubs were still firmly in charge.

There were three separate forms of building, residential, commercial and public, and actual construction was determined by the interaction of demand forces, and the responsiveness of the local building industry. In the residential sector demand was mainly influenced by the size and age

1 Burgess, op.cit., p.106.

structure of the population, which itself was affected by the condition of the local economy as an important influence on the rates of migration and the ability of occupiers to pay rent. Commercial building would also be determined by the level of business activity which would have encouraged manufacturers or traders to expand the scale of their operations. In the three wage series for builders in Nottingham, Leicester and Stratford workers are employed on public buildings, mostly repairing, but in some cases constructing new, gaols, bridges, asylums and pavements; here, the interest or vigilance of the borough councils would be important factors in demand for building in addition to the varying state of existing public buildings.

The speed with which builders responded to changes in demand would depend on the cost and availability of materials, labour, land and credit and this in itself tended to vary within fairly narrow geographical bounds. Thus the complex interaction of demand and supply variables, together with the impossibility of transporting the final product determined '... the local character of the industry which implied the existence of regional markets relatively immune to outside competition'.¹

This emphasis on local market forces appears to confirm the conclusions of students of fluctuations in building activity. The uneven pace of construction reflects the problems of an industry where supply tends to be inelastic because of the large number of producers, the durability of the product and the length of time taken before returns begin to flow either in the form of rents or purchase price. Although Parry Lewis has produced a national analysis of fluctuations in building during the 18th and 19th

1 Ibid., p.92.

centuries,¹ both his own work on the causes of the cycles and the important contribution of Dr Chalklin² tends to cast doubt on the utility of such aggregate indices. Instead, as variations in local economic conditions appear to have been critical in determining levels of activity, the dependence of local areas on different sectors or industries produced conflicting trends. This is not to deny totally the influence of wars, national financial crises and harvest failure on building, but to suggest that factors such as the availability of land, local supplies of labour and credit probably had greater long term impact; whereas the other wider changes were vital in setting the turning points of the cycles.

Thus the organisation of the building industry remained essentially small scale and locally orientated given the strength of trade clubs. Actual building activity was also largely determined within local confines, so that variations both between and within regions were bound to occur. In the midlands the data on occupational wage differentials reflects these local variations because, in addition to the varied economic background of each locality, the builders wages were paid for work done within separate sections of the industry. In Nottingham, Leicester and Stratford the data refers to public employees; in Lichfield, Newcastle-under-Lyme and Lilleshall the builders were working on the urban residential properties of the Duke of Sutherland; and in the other areas builders were employed on the landed states either in the homes of estate workers, or in the residence of the landowner himself. The workers themselves tended to move about between the various employers so that they were not permanent employees of the borough or the estate, but their activities would, to some

1 Building Cycles and Britain's Growth (1965).

2 The Provincial Towns of Georgian England (1974).

extent, be determined by different conditions. For instance work for the borough could have provided employment when residential construction was slack, and employment in the building of new houses for the aristocracy was sometimes determined by random factors such as a change in inheritance.¹

II

The basic data for this chapter is derived from the wage rates paid to building workers in the midlands which was examined above in Chapter 2. Attention is also focussed on the premium paid to skilled workers relative to their unskilled labouring colleagues, and this difference in pay is taken to be an indication of the greater number of efficiency units embodied in the skilled worker. It may represent some differences in natural ability, but it is more likely to reflect the extra training (apprenticeship) involved in the acquisition of the required skilled, and is often supported by '... artificial restrictions by trade unions or the legislature...'²

The precise types of builders used in this sample were masons, bricklayers, carpenters and joiners, who were generally paid the same rates,³ and the differential itself measures the gap between the modal wage rates for skilled and unskilled workers.⁴ Changes in the size of the differential have been used to explain managerial production decisions which involve the

1 The wedding gift of the Lilleshall estate by Lord Gower to his son in 1823 resulted in the building of a new residence, despite the problems of the post-1815 depression. E.S.Richards, Ag.H.R. (1974), p.103.

2 J.W.F.Rowe, Wages in Theory and Practice (1928), p.87.

3 See above p.71.

4 This avoids the upward bias in wages which would be present if masters rates were included, and also compensates for personal differences in productivity which might be important if a simple mean were used.

substitution of capital for labour¹ (or vice versa in the case of 19th century building, where, as we noted above, technical change was very limited); to give some indication of the economic well-being of these two sub-groups within the labour market,² and to throw light on the growth and influence of trade unions in the economy.³ In addition, changes in the differential give important clues to the influence of war and inflation on the economy to the changing attitudes towards the apprenticeship system (through which skilled workers exercise control over entry into their trades) and to the impact of changes in other sectors of the economy which affects the demand for unskilled labour (such as mining) and may narrow differentials⁴ by forcing up labourers wages.

Most writers who have looked at the question of skilled wage differentials in building, in an historical context, have emphasised that the most noteworthy characteristic is their '... remarkable stability which related the labourer's rate to the craftsman's as two to three'.⁵ Indeed this proportion is thought to have been more or less the same from

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- 1 M.W.Reader, 'Wage Differentials: Theory and Measurement', in Aspects of Labour Economics (N.B.E.R.1962), p.259; for an historical interpretation of the importance of skilled differentials see H.J.Habakkuk British and American Technology (1962).
 - 2 For the impact of skilled wage differentials in social history, see the debate on the origins and influence of the aristocracy of labour in E.J.Hobsbawm, 'The Labour Aristocracy' in Labouring Men (1964); J. Foster, Class Struggle and the Industrial Revolution (1974).
 - 3 Rowe, op.cit., p.93.
 - 4 Throughout this chapter differentials are measured by taking the labourers rate as a percentage of the craftsmen's; this is the convention in Britain whereas in the USA the differential is measured as a percentage of the labourers rate.
 - 5 E.H.Phelps Brown and Sheila V.Hopkins, 'Seven Centuries of Building Wages', Economica, vol.XXIII (1956), p.176; reprinted in E.M.Carus-Wilson Essays in Economic History, Volume II (1962).

1410 to 1914, except for short periods of rising rates, and this persistence has been attributed to the force of custom and convention as '... we cannot believe that market forces always worked to keep the equilibrium prices of the two grades of labour in so constant a relation'.¹ For the period 1750-1834 the data upon which Phelps Brown and Hopkins base their series is drawn from the work of Gilboy and Bowley and refers to wages in the south of England.² Their final index is an amalgam of scattered observations with the underlying theme the '... labourers wages were in general almost exactly two-thirds of artisans wages throughout the 19th century, but in times of change show a tendency to lag behind for a year or two'.³ No authority is given for this assumption, but unfortunately it has passed into a widely accepted truth.⁴

Certainly the index produced by Phelps Brown and Hopkins illustrates this stability (see Fig 34) with only slight deviations during the Napoleonic wars, when the labourers rate lags behind in the 1790s but then rises faster in the 1800s to emerge in the post war period back at the two thirds level. There is therefore some short term movement in the differential but within a fairly narrow range (in this case 61.2% to 67.5%). If this series is compared with the twelve series of midland building wages (see Figs 34 & 35) neither the long term stability, nor the movement between narrow bands which the Phelps Brown and Hopkins index reveals, is present. In fact, there are

1 Op.cit., p.176.

2 For an assessment of these two series see above pp. 124-140.

3 A.L.Bowley's 'Wages in the Building Trades - Concluded', J.R.S.S., vol.1, (1901), p.104.

4 Rowe, op.cit., p.111; Hobsbawm, op.cit. p.346; E.H.Hunt, Regional Wage Variations in Britain 1850-1914 (1972), p.341.

FIG. 34

Southern buildersOccupational
Differential

Craftsmen

Labourers

120
110
100
90
80
70
60
50
40
30
20
10

Percentage

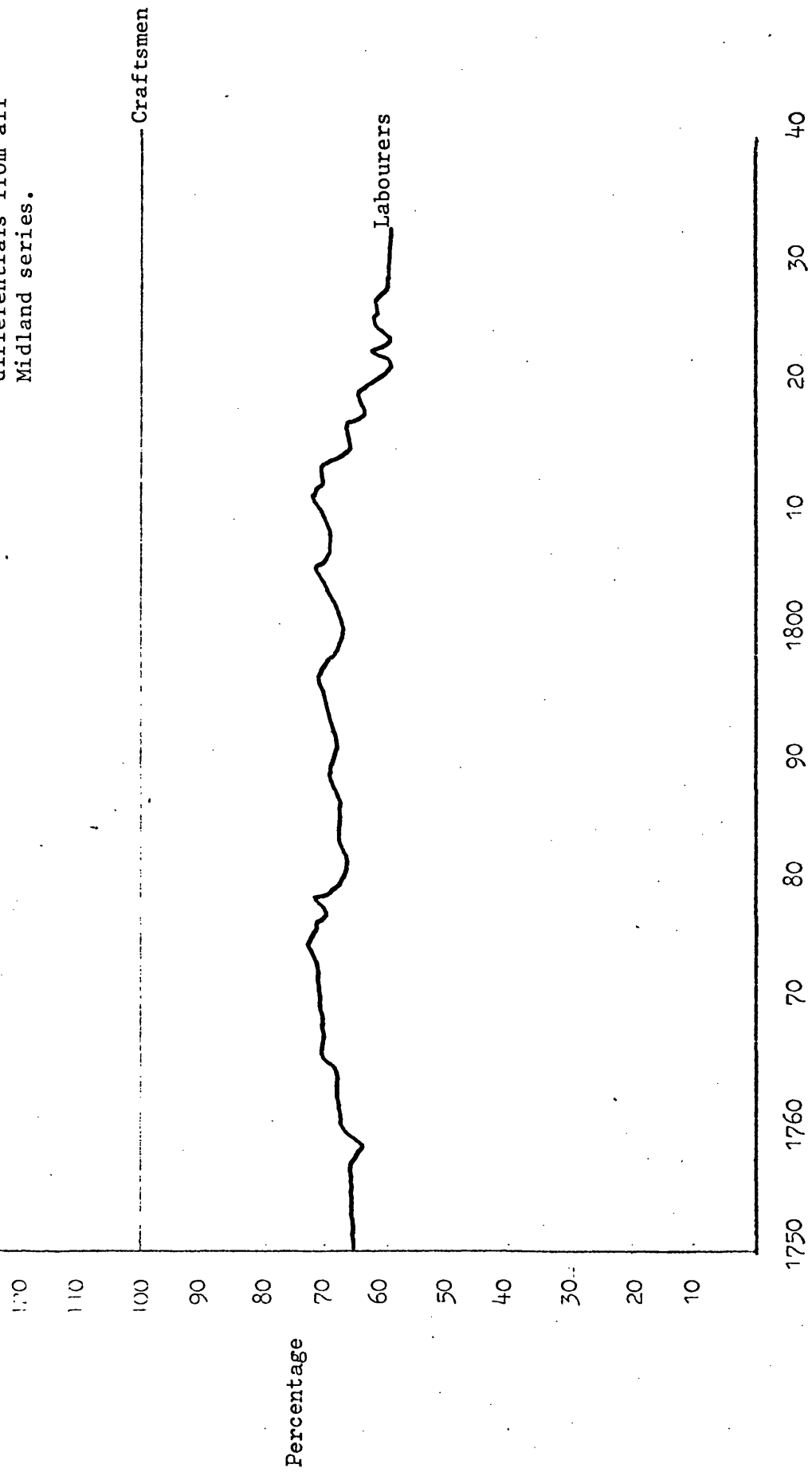
1750 1760 1770 1780 1790 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000

Source: Phelps Brown & S. Hopkins
(1956)

FIG. 35

Midland Builders

A mean index of occupational
differentials from all
Midland series.



Source: Appendix 4

substantial variations in the trends and levels of the differential across the midlands, and the short-term fluctuations are much more dramatic.

In short, the behaviour of each one of the midland series is so different that the smooth regularity and stability of the Phelps Brown-Hopkins index might be thought to be illusory. This could be because the aggregated nature of their index would tend to submerge the constant state of change into an all-embracing average, and the consequent stability could be justified on a priori grounds by referring to the power of convention over market forces. The importance of custom will be emphasised below in the final chapter, and therefore it would be inconsistent to reject its influence here, but it is vital that custom should not become a stultifying influence for although '... wage patterns acquire considerable inertia they are not invulnerable to changes in the economic and institutional environment'.¹ A period at the heart of the industrial revolution must surely have witnessed great pressures on received pre-industrial conventions.

A further reason why the stability thesis may be regarded as dubious lies in the nature of the data that Bowley used and which therefore underlies the post-1790 observations. The wage rates that he uses were often taken from builders' price books which set the rates which were supposed to be charged, but not necessarily those which were actually paid by masters or received by the men. Bowley admits this by saying that the price books '... tell a master builder what he may expect to have to pay for labourers and materials'.² and Porter, who first compiled these figures, also gave the

1 Arthus M. Ross, 'The External Wage Structure', in New Concepts in Wage Determination (N.Y.1957), (Ed) G.W.Taylor and F.C.Pierson, p.201.

2 Wages in the UK in the 19th Century (1900), p.82.

same warning when he said that '... the returns given below are those paid to masters who contract for the performance of the work; and are not the sums received by the workmen'.¹

Further evidence of the unreliability of these price books comes from evidence given by builders to two contemporary select committees. Firstly in 1813 in an inquiry into the working of the apprenticeship laws William Betty, a London bricklayer, admitted that it was common practice to claim the official rates from the surveyor but actually to pay the men much less than this or even to use apprentice labour to do the work.² Secondly, Thomas Burton, another London builder, told a select committee in 1833 that the price books '... were not held in much repute'.³

The Bowley data, therefore, gives a good impression of what rates should have been paid and were more likely to have been influenced by the belief in the customary two-thirds margin than were the builders who actually paid the wages. In fact what appears to have happened was that this customary differential had some underlying importance, but the more immediate problems of wartime inflation, sudden changes in building activity, and skilled trade union attitudes, produced sharp changes in the differential. Building wages for the midlands, which are based upon actual bills and receipts for completed work and not normative price books, tend to support the notion of a secular level of differential within the range of 55-66% of the craftsman's rate but they also exhibit more dramatic short-term fluctuations between 50%-83%. Overall the skill differential

1 The Progress of the Nation (1851), p.442.

2 S.C.Apprenticeship Laws, P.P. (1812-13), iv, p.977.

3 S.C.Manufacturers, Commerce and Shipping, P.P. (1833), p.113.

tends to widen slightly over the whole period 1750-1834, although the extent of this trend varies between locations. The most important fluctuations within this overall trend are centred on the Napoleonic wars when in most cases there appears to be a distinct narrowing of differentials in the 1790s, followed by a period of stability or slight widening in the 1800s and then a stronger trend towards wider differentials after 1815.

These changes stand in sharp contrast to the stability of the Phelps Brown and Hopkins index, which showed little change beyond noting the tendency of labourers wages to lag behind (i.e. differentials widen) in the first stages of the Napoleonic wars. Their relatively stable data tended to support the received doctrine on wage differentials which was based on the views of Adam Smith who observed that '... the proportion between the different rates seems not to be much affected by the riches or poverty of the advancing, stationary or declining state of society. The proportion must remain the same for at least a considerable time'.¹ As the quality of the wage data began to improve, it became clear that the secular trend in differentials was towards a narrowing of the gap between skilled and unskilled workers. Evidence from the United Kingdom² and the United States³ illustrates this long term trend and also pointed to periods of acceleration in this process. Causes of this long term change are seen mostly in terms of the spread of education and the rise in the stock of human capital but as these changes had little influence on the

1 The Wealth of Nations, p.222.

2 K.J.C.Knowles and H.W.Robertson, 'Differences between the wages of skilled and unskilled workers 1880-1950', Ox.Bull., xiii, (1951), pp.1-21.

3 H. Ober, 'Occupational Wage Differentials 1907-47', Monthly Labor Review (Aug. 1948), pp.127-134.

pre-1834 labour market, it seems more appropriate to consider their explanation of the short term changes.

Knowles and Robertson placed a good deal of emphasis on sharp changes in the cost of living which may lead to changes in money wage rates. In particular they pointed to the granting of 'equal money increments' to both skilled and unskilled workers as one way of reducing the gap between their respective wage rates, as the increment would form a bigger percentage gain for the labourers.¹ Thus a period of inflation would tend to result in a narrowing of the differential as the increase in money wages needed to compensate for the increased cost of living was adjudged to be the same, in absolute terms, for craftsmen and labourers. Looking at the wage data in building (Appendix 1) it is evident that this pattern did occur at Nottingham in 1775 and 1807-9, at Strelley in the early 1790s, in Stratford in 1797, and at Leicester in the early 1790s and from 1810-14. Although this confirms the role of equal compensation for inflation, it is also vital to recognise that there remain many other changes in the differential occurring in the wartime inflation which cannot be explained by these equal increments and which tends, therefore, to underline the separate character of the markets for skilled and unskilled labour.

In their only reference to the short term behaviour of the differential both Bowley and Phelps-Brown comment on the lag of labourers behind craftsmen in the 1790s (see Fig 34); implicitly they appear to be suggesting that the ability of skilled workers to take advantage of their bargaining position is reflected a wider differential. Such a widening is rarely

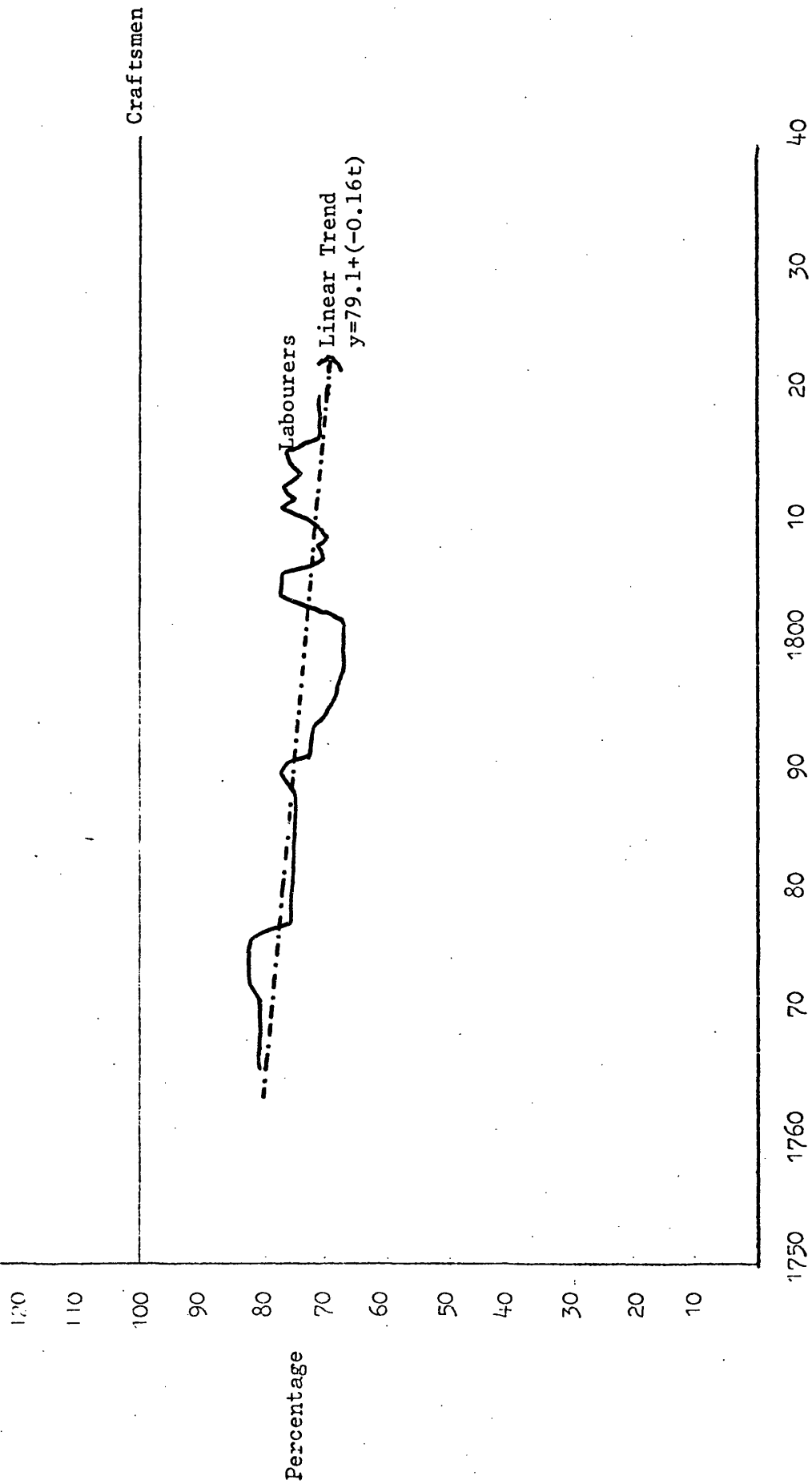
1 Knowles and Robertson, op.cit., p.114.

evident in the midland data (the exceptions being Lichfield, Lilleshall and Newcastle, see Figs 36 to 38) in fact a sharp narrowing of the differential is more often found. If this is the case and 'equal money increments' play only a minor part in this narrowing, what is the cause?

Another explanation of narrowing wage differentials has been put forward by M.W.Reder who emphasised the dilution of skilled hiring standards in an upswing of economic activity.¹ Given that the supply of skilled workers is relatively inelastic in the short-term, Reder suggests that instead of paying a higher skilled wage rate in order to tempt workers away from other jobs, an employer may be willing to take on workers who are not fully qualified in order to gain the maximum advantage from any improvement in economic conditions. This dilution of work standards would be possible if skilled trade unions were not strong enough to prevent it, and where the potential deterioration in quality would not be great enough to affect demand. When related to building this would have meant the elevation of an experienced bricklayer's labourer into a skilled position and would have resulted in pressure on the unskilled labour market. As we saw above, changes in building activity often responded to improvements in the performance of the local economy which presumably increased the demand for labour and this dual pressure for unskilled builders and other unskilled workers would tend to narrow the gap between them and the skilled workers. In this case the labourers wage rates would tend to rise faster than the craftsmen's, as long as consumers were willing to accept poorer quality housing.

1 'The Theory of Occupational Wage Differentials', A.E.R., XLV (Dec.1955), pp.833-52.

FIG. 36

Lichfield BuildersOccupational
Differential

Source: Appendix 4

FIG. 37

Lilleshall BuildersOccupational
Differential

Craftsmen

Labourers

Source: Appendix 4

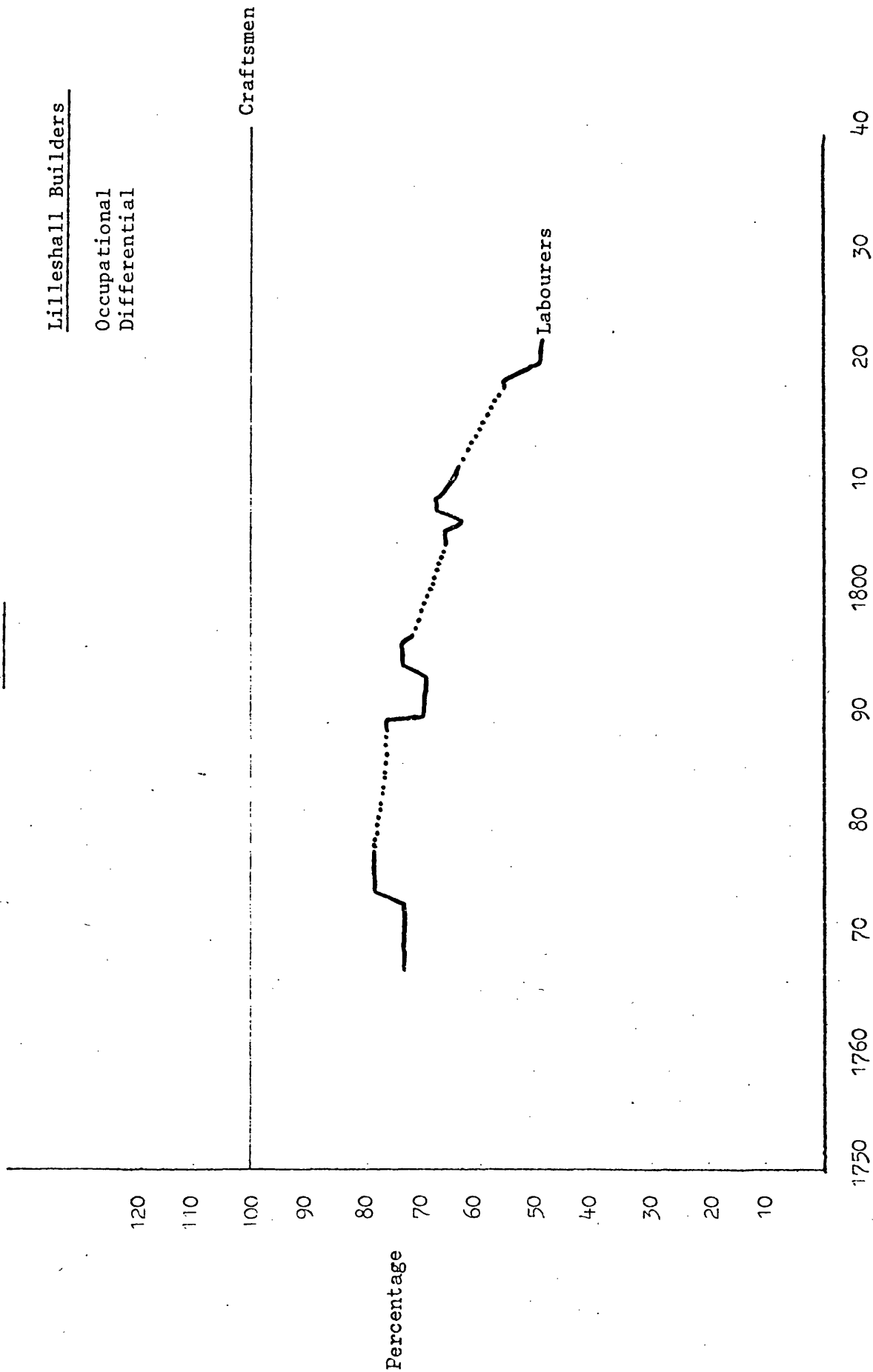


FIG. 38

Newcastle-under-Lyme Builders

Occupational
Differential

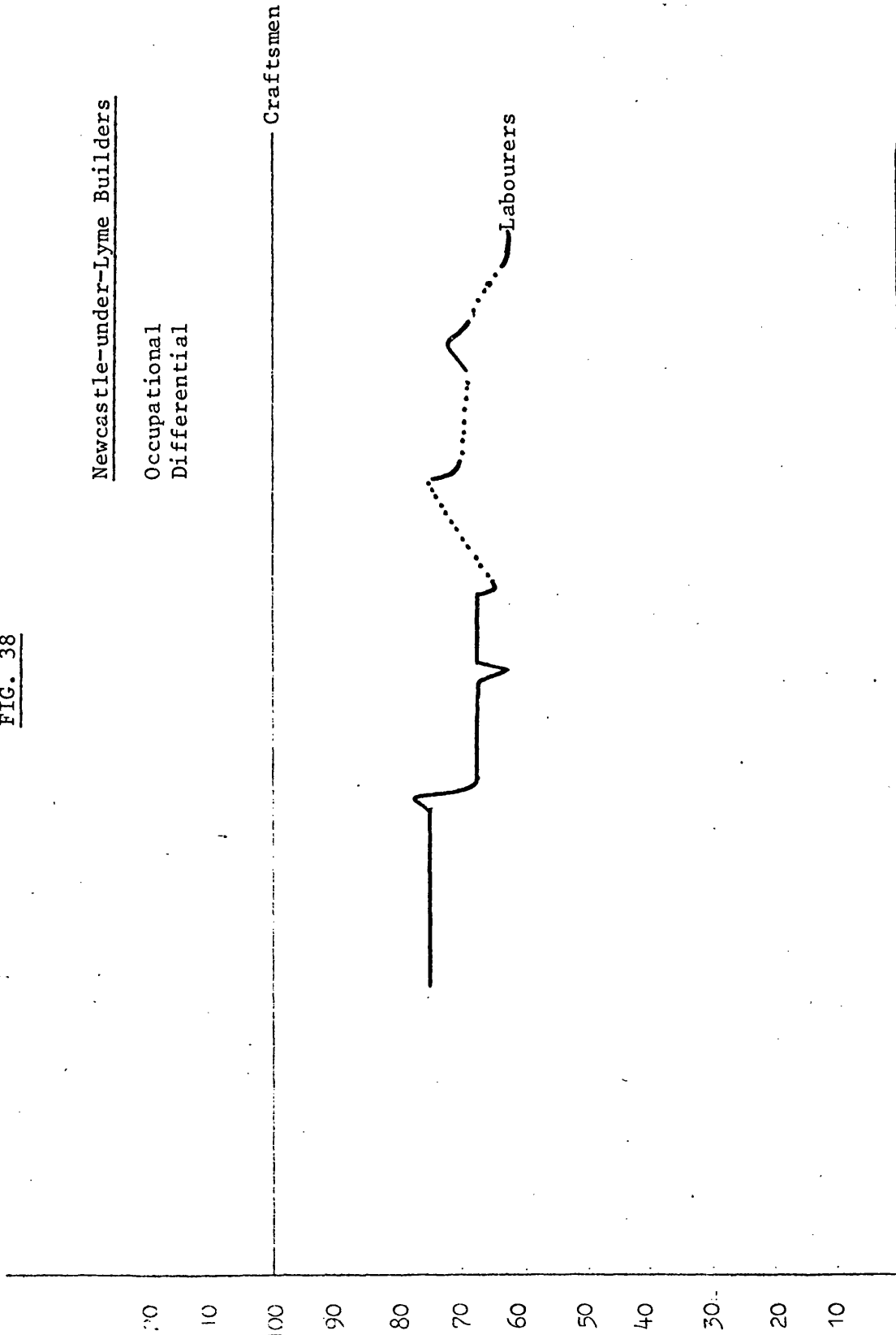
Craftsmen

Percentage

Labourers

1750 1760 70 80 90 1800 10 20 30 40

Source: Appendix 4



These supply pressures were greater in the areas of rapid urbanisation where the locally based trade clubs were '... incompetent to deal with so colossal a problem...' ¹ and they led directly to the emergence of jerry-builders. As employers they tended to control the whole job, as the old surveyors had done, but the basis of their role was speculative as they '... rented land in hope, secured materials on credit and raised a mortgage on the half-built house before it was sold or leased'. ² Their main problem was to erect houses at the lowest possible cost in the shortest time and they disregarded custom and apprenticeship in employing cheap labour. ³ In Nottingham, for example, where the failure to enclose land around the borough, had led to an enormous rise in land values, there were even greater pressures to keep down costs. ⁴ The circumstantial evidence of dilution, that is where unskilled rates accelerate faster than skilled wages, is certainly present for the boom of the 1780s and early 1790s when the expansion of the textile trades and the attractions of canal building pushed up unskilled wages in Nottingham and on the neighbouring estate at Strelley. ⁵

Even the Webbs recognised this problem when they observed that young labourers up to the age of twenty-five were given the option of abandoning '... the hod for the trowel'. ⁶ Although there are many examples of earlier changes in unskilled relative to skilled wage rates in the midlands, the

1 Postgate, op.cit., p.31.

2 Clapham, Vol.1, p.164.

3 E.P.Thompson, The Making of the English Working Class (1963), p.506.

4 S.D.Chapman, 'Working Class Housing in Nottingham during the Industrial Revolution', in The History of Working-Class Housing (1971).

5 See Figs 39 and 40.

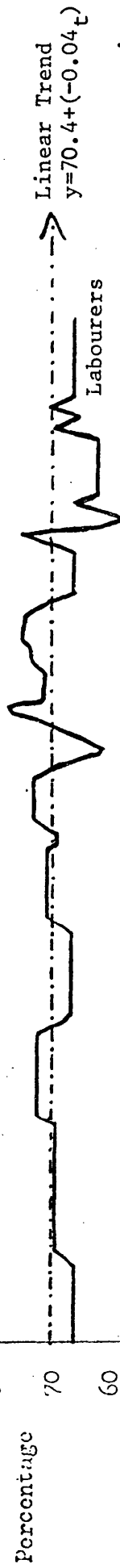
6 Industrial Democracy (1897), p.489.

FIG. 39

Nottingham Builders

Occupational
Differential

Craftsmen



Source: Appendix 4

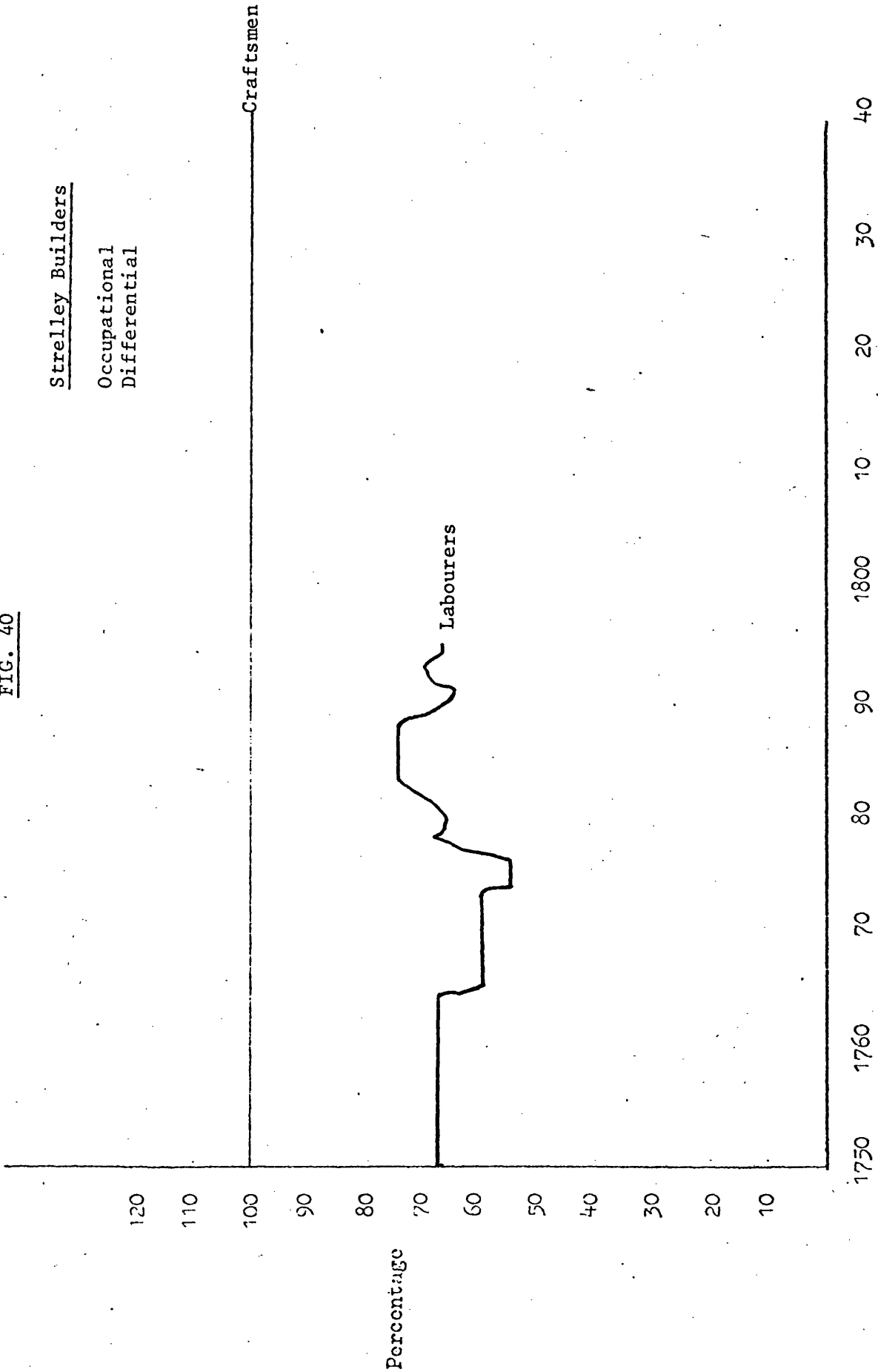
FIG. 40

Strelley Builders

Occupational
Differential

Craftsmen

Labourers



Source: Appendix 4

localised nature of the building cycle makes the precise correlation of the two trends more difficult to make.

More general evidence on this process of dilution can be gained from an examination of the opposition which skilled workers exerted against this erosion of craft standards because in many ways this opposition could determine the extent of the penetration of jerry builders in local areas. In particular the controversy over the apprenticeship laws which were of great importance to the craft lodges as the major weapon in controlling entry into their trades. There were many attempts by groups of skilled workers in the 1790s and 1800s to revive the regulations by which craftsmen had to qualify in his trade by serving a seven year apprenticeship. Over the years this major piece of Elizabethan labour law had fallen out of favour through the '... narrowing decisions of the judges who had disapproved of it on principle',¹ but increasing concern was shown by many craftsmen that standards were being reduced by employers who were seeking to take speedy advantage of the prosperous conditions of the 1790s.

In particular the skilled groups wished to tighten the internal regulations of the lodges or trade societies so that there would be a reduction in the '... number coming in from the country places to the great detriment and injury of persons duly apprenticed to the said craft'.² Framework knitters in Nottingham complained to Parliament in 1812 that because the hosier had to pay rent for his frames when they stood idle, they often resorted to using 'colts' or illegal workers.³ And in the Leicester hosiery trades '... the inflow of new recruits both encouraged

1 T.K.Derry, 'The Repeal of the Apprenticeship Clauses of the Statute of Apprentices', Ec.H.R., III (1931-2), p.67.

2 Ibid., p.70.

3 B.P.P. (1812), ii, pp.33-62.

and was facilitated by the apprenticeship system despite renewed efforts to enforce the regulations'.¹ In London a journeymen's organisation even went to the extent of prosecuting nineteen illegal workmen from 1809-12, and they were quite prepared to pay their own costs, although it was the difficulty of sustaining a prolonged legal campaign that encouraged the London Trade societies to petition Parliament on the implementation of apprenticeship regulations.

The government agreed to set up a select committee on the problem in 1813, although ultimately this resulted in the total repeal of the 16th century legislation. The main arguments of the craftsmen before the committee emphasised concern over the quality of work, and the undercutting the craftsmen's prices. Examples were quoted from the building trades by William Betty,² but the full force of these arguments was not sufficient to overcome opposition to the whole system on the grounds of illiberal restraints on the freedom of employers and the bogey of workmen's combinations.

Notwithstanding the eventual repeal of the apprenticeship regulations the comments of the craftsmen themselves are sufficient to establish the tendency of masters to dilute craft standards especially when trade was booming. Here, masters were keen to increase the supply of goods and services as quickly as possible even if this meant giving '... adult recruits from outside the trade a short period of instruction for a small premium'.³

Both of the themes that have been explored so far seek to explain the

1 A.Temple Patterson, Radical Leicester (1954), p.54.

2 See above p.179.

3 Temple Patterson, op.cit., p.54.

narrowing of differentials in periods of inflation or expanded activity; what is the expected response in deflationary or depressed economic conditions? Generally differentials are thought to widen once activity begins to slow down '... because skilled workers are usually more organised and although the reserve for the unskilled grades includes unemployed skilled workers the reverse is not true'.¹ This means that employers would find it easier to depress unskilled wages, whilst the craftsmen may be able to retain a greater proportion of their short term gain in absolute money wages (certainly this trend is confirmed by the mean index of midland building wages where craftsmen's rates are 171 in 1834 whereas labourers' rates are only 151 - in both cases 1790 = 100).

The involvement of trade unions in the widening of differentials assumes that they are often more active in this defensive role where '...fear of a fall in the standard of living has always been the strength of labour agitation. The cautious man who will take no risk to add to his wages will fight the hardest to maintain them'.² E. Welbourne thought that the skilled workers were less likely to drop away from trade unions in depressions as they would be better able to afford subscriptions,³ and Richard Perlman has suggested that skilled unions may be more willing to trade short-time working for the maintenance of wage rates whereas unskilled workers have little option but to accept both unemployment and lower wages.⁴

All of these factors would lead to the expectation of a widening in the differential after 1815, and this is the trend noted in all of the midland

1. Knowles and Robertson, op.cit., p.113.

2. H.B.Davis, 'The Theory of Union Growth', Q.J.E., 55, (1940-1), p.611.

3. The Miners' Union of Northumberland and Durham (Cambridge, 1923), p.61.

4. Labor Theory (New York, 1969), p.126.

series. In addition there are some scattered observations from Glasgow and Manchester which confirm this deterioration in the labourers position after 1815.¹

The ability of the skilled workers to retain a larger share of their newly won wage increase, was greatly helped by '... market scarcity which reinforced their ability to organise effectively'.² Accepting their role as the aristocracy of the labour force they also possessed an '... artisan creed with regard to labourers who were an inferior class and should know their place'.³ As a social group the labour aristocrats possessed greater social solidarity through their links in religion, temperance clubs, friendly societies, etc. and this cohesion helped them to preserve their position in bad times. They were willing to work shorter hours and engage in work sharing at the higher wage rates,⁴ and they were better able to restrict entry into their trades by limiting apprenticeships. Where this was difficult, given the repeal of the apprenticeship regulations in 1814, there was the alternative of collective physical control over the employment of partially skilled workers through ... outrages or rattenings... whereby the tools and equipment of offending employers were removed and/or destroyed.⁵ Thus in the short term the skilled workers appear to have retained more of their wartime gains, whilst in the long term, their solidarity ensured no

- 1 In Glasgow the differential widens from 64%-60% 1810/17 - 1831 and in Manchester from 70%-66% 1810/19 - 1832, Returns of Wages (HMSO 1887), p.36-7.
- 2 S.G.Checkland, The Rise of Industrial Society in England 1815-1885 (1964), p.232.
- 3 E.J.Hobsbawm, 'The Labour Aristocracy in 19th Century Britain', in Labouring Man (1965), p.275.
- 4 See the evidence of Thomas Burton to the S.C. on Manufactures, etc. (1833), Q.1749, p.110.
- 5 S. Pollard, A History of Labour in Sheffield (Liverpool 1959), p.70.

substantial narrowing in the skill differential even down to 1914.¹

Turning to the unskilled labourers their lack of organisation was a feature of 19th century trade union history, and more particularly in the 1820s and 1830s their position was further undermined by the amount of both un- and underemployment within the economy. Rapid population growth meant that '... the number of those whose skill was rudimentary was therefore vastly increased'.² As if this were not enough, the wages of the unskilled were depressed even further by the flood of Irish migrants who went into '... the most disagreeable kinds of coarse labour such as attending masons, bricklayers and plasterers'.³ The resulting competition for jobs often resulted in '... riots, especially where Irish and English unskilled labour was in direct competition - in building or on the docks'.⁴ These impressions were corroborated by Thomas Burton in his evidence to the 1833 Committee on Manufactures, Commerce and Shipping, when he commented on '... the glut of Irish labourers in building'.⁵

Although it is not suggested that Irish labour competed throughout the region it seems likely that their presence in the larger towns and cities of Leicester, Nottingham and Birmingham may have been sufficient to add to the burdens of the already over-supplied unskilled labour market and thus widen differentials even further.

1 Hobsbawm, 'Labour Aristocracy', op.cit., p.293.

2 Checkland, op.cit., p.219.

3 Report on the State of the Irish Poor in Great Britain (1836), p.vii.

4 E.P.Thompson, op.cit., p.439.

5 Op.cit., Q.1681, p.106.

If attention is concentrated on the general trends in wage differentials from the 1790s to the 1830s then the initial narrowing and later widening may be explained by referring to the effects of 'equal money increments' in wage rates, skill dilution and the greater degree of resistance by skilled workers (relative to unskilled) to the wage reductions after 1815. There does however remain a small number of cases where the differential moved in the opposite direction, ie widening in the upswing of activity - this was the case suggested in the Phelps Brown and Hopkins data - or narrowing in the downswing. In these exceptional cases attention has been focussed on the strength of trade union resistance to dilution¹ or the extremely elastic supply of unskilled workers that may be available² or the reluctance of employers to cut unskilled wages in the downswing as these wage rates may already be regarded as subsistence levels.³

The midland data contains few examples of prolonged narrowing of the differentials after 1815, but there are several examples of widening in the 1790s when the opposite is normally the case. This occurs most notably in the towns of Lichfield, Newcastle and Lilleshall and this may be associated with the dramatic reversal in the flow of migrants and above average rate of natural increase in population from the later 18th century onwards.⁴

Armed with this framework of hypotheses and the general historical background the next section will examine the constituent series in more detail.

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- 1 R. Ozanne, 'A Century of Occupational Differentials in Manufacturing', R.E. & S. (Aug.1962), pp.292-9.
 - 2 A.L.Gustman & M.Segal, 'The Unskilled-Skilled Wage Differential in Construction', I.L.R.R., 27, 2, (1974), pp.
 - 3 Ozanne, op.cit., p.297.
 - 4 See Deane & Cole. op.cit., Table 25, p.108.

III

In Nottinghamshire the main series is derived from the accounts of the Borough Treasurer in the city of Nottingham itself. Figure 39 shows that the trend movement of the differential over the whole period 1750-1834 is towards a very slight widening, but that the changes between the two outlying periods (when the differential is the conventional two-thirds) shows substantial movement. For example, the differential narrows down to 1775 as equal money increments of 2d per day are paid in 1756 and 1768, whereas the widening from the mid-1770s is caused by a rise of 2d per day being paid to craftsmen but not labourers in 1776. Dr Chalklin has identified an expansion in building activity in the Nottingham area both in the later 1760s and 1770s but the trend in the differential is the opposite: in the former a narrowing in the latter a widening when it seems that the supply of unskilled labour was sufficiently large to keep down labourers wages despite the greater employment. This situation is confirmed by the estate building series for Strelley where the differential widens throughout the 1760s and 1770s as craftsmen's wages push ahead of their labourers (see Fig 40). However in the more outlying parts of the county it appears to be the labourers' rate which is moving to close the differential slightly for example at Muskham in 1760 and 1775, and at Welbeck in 1761 and 1775. In both of these areas there were changes taking place in their rural economies, which were to convert their status from unenclosed sheep walks to some of the most prosperous mixed farming areas in the county¹ and this appears to have placed pressure on the local unskilled labour market. Whereas in and around Nottingham the surplus supplies of labourers seem to have been sufficient to hold their wages back despite the increases given to craftsmen.

1 See above, Ch.5, p.150.

This picture changes radically from the mid-1780s onwards as the differential begins to close at the same time as building activity begins to surge ahead.¹ In Nottingham itself, as we noted above,² the labourers rate rises faster than the craftsmen's from 1784, and this could be taken as a reflection of diluted craft standards and the extra pressure on the unskilled labour supply exerted by the expansion in mining, canal building and framework knitting.³ A similar trend of narrowing differentials can also be seen at Strelley in the 1780s but this is reversed in the early 1790s, when craftsmen are able to obtain very large increases (50% between 1790-6). The lull in building activity in the late 1790s seems to have provided an opportunity for Nottingham craftsmen to exert pressure on the borough council to restore differentials to their previous levels as their increase of 6d per day in 1798 is not matched by their labourers. However this position is short-lived as the revival in activity at the turn of the 19th century sees the labourers getting higher wage increases, as once again the possibility of dilution appears to have been evident.

Data from the outlying estates is too sparse to provide very definite evidence but the Welbeck series for the late 1790s confirms the restoration of the differential by a sharp rise of 6d (from 24d - 30d per day) for craftsmen in 1800, and the Markham data confirms the very sharp narrowing of the 1800s as greater pressure is exerted on the unskilled labour market.

A narrowing of the differential can also be seen in Nottingham between 1802-09 as equal money increments are paid in 1805 and 1807, but thereafter

1 Chalklin, op.cit., p.274 & Chapman, op.cit., p.135.

2 See p.149.

3 See below, Ch.5, p.148.

the labourers receive no increase at all as the craftsmen push ahead in 1810/11. Once again this is a period of less intense building activity and once again (as in the late 1790s) the craftsmen are able to gain separate increases in order to restore the differentials to more conventional levels.

After 1815 the overall trend is for differentials to widen, as the unskilled labour surplus exerts its influence in the depressed economic conditions. The only exception came in the mid-1820s when the lace boom in Nottingham¹ exerted enough influence on the labourers rate to reverse the widening trend for the years 1823-6. Thereafter the differential widens and stabilises at the two thirds convention until 1834.

On the whole therefore there seems to be a close association in Nottingham itself between the state of building activity and the trend in wage differentials; they narrow as activity expands and widen in a contraction. The one unusual feature of the Nottingham series is the very sharp increase in craftsmen's rates, which follows a number of years of narrowing - such as 1799 and 1810-11. Even as activity begins to slow down, it appears that builders are able to gain substantial increases in wage rates in order to restore normal differentials.

Turning to the series for Leicester (Fig 41) the overall trend is more strongly towards an overall widening of differentials than in Nottingham. Within this overall trend the years down to 1798 saw a narrowing in the gap between labourers and craftsmen's wages under the direct influence of equal money increments in the 1790s, when there is little evidence of dilution (i.e. of the unskilled rate rising faster than the skilled).

1 See above, Ch.1, p. 49 and Ch.5, p.149.

FIG. 41

Leicester BuildersOccupational
Differential

Craftsmen



Source: Appendix 4

This narrowing trend is reversed throughout the 1800s when craftsmen were able to extract increases which were not given to their labourers, although just before the end of the French wars equal increases of 2d were paid in 1811 and 1813 which narrowed the differential slightly. After the war the craftsmen were able to retain the whole of their wartime increase in wage rates, but their labourers were not as successful when in 1822 and later in 1824 2d was deducted from their daily rates; thus widening the differentials.

In the Leicester series, therefore, there is no evidence at all for a dilution of craft standards, and this would appear to mean that the skilled workers were much more effectively organised, and that jerry builders did not exert the same influence as they had done in land hungry Nottingham. This impression was confirmed by the post-1815 rigidity in the craft wage levels, when the skilled workers in Leicester were the only ones throughout this sample of midland wages to have been strong enough to have held on to the whole of their increase.

The only other series for the Eastern Midlands comes from the Fitzwilliam estates at Milton, just outside Peterborough. Fig 42 shows that the movement in the differential on this estate was much more dramatic than those for Nottingham and Leicester. In particular, the years from 1788 to 1798 saw the differential narrow from 50% to 83%, as the labourers wage rate increased by 75% whilst the skilled rate remained the same at 24d. This rate of increase was also seen in the series for the agricultural workers on this estate¹ and it appears, therefore, that it was the unskilled supply of labour that was under most pressure in the 1790s. However, the

1 See above, p.153.

FIG. 42

Milton Builders

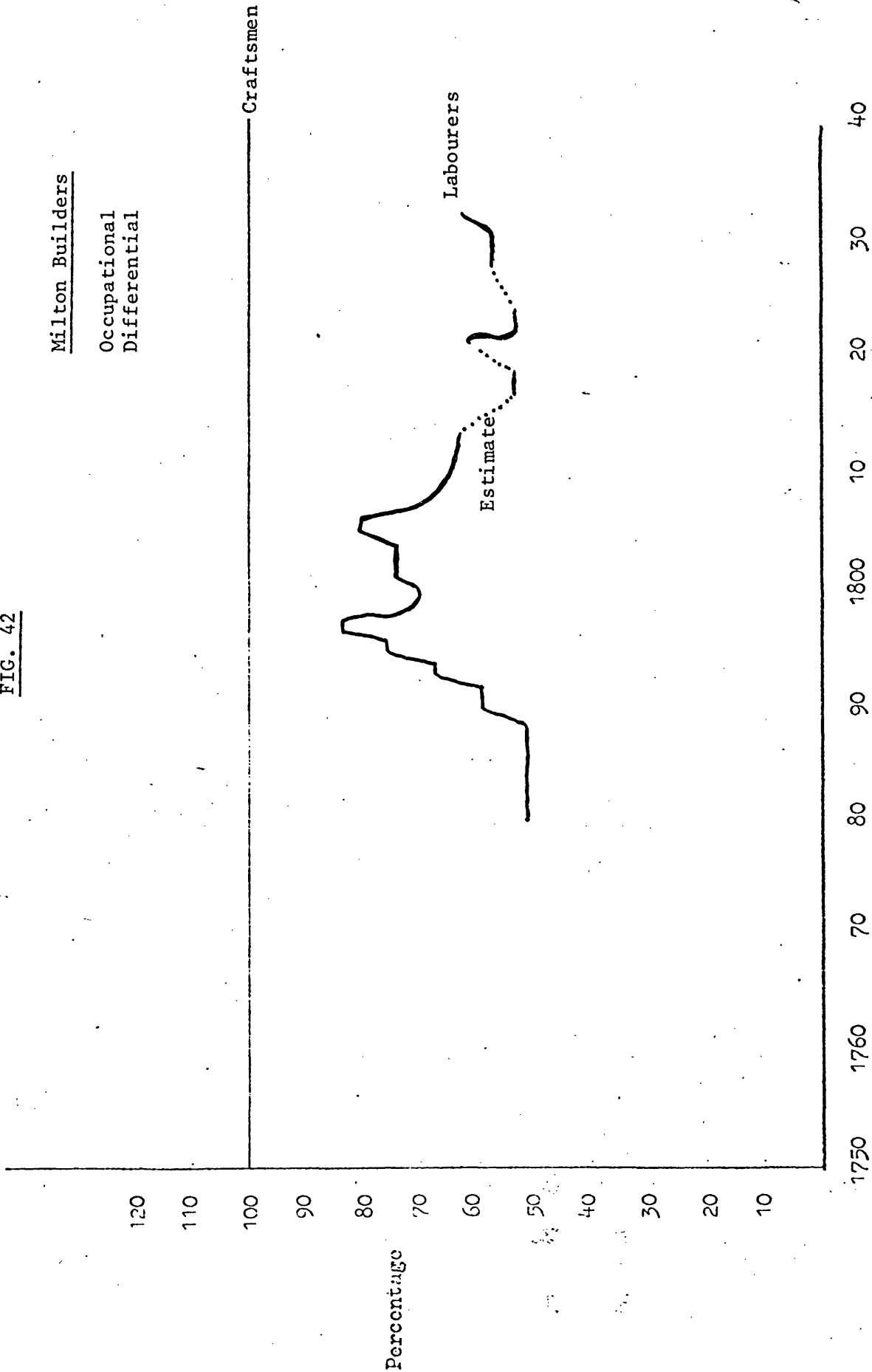
Occupational
Differential

Craftsmen

Labourers

Estimate

Source: Appendix 4



ability of the more skilled building workers to obtain sharp wage increases designed to restore differentials, that was also noted in Nottingham, was sufficient to reduce the gap in 1799-1800. During the 1800s a similar pattern may be seen as the labourers gain a separate increase in 1805, which is more than compensated by substantial increases for craftsmen in 1807/8 producing a wider differential thereafter.

After 1815 the trend is very definitely towards the widening of differentials that has been noted throughout the midlands, but the Milton series saw the widest gap of the whole sample, between skilled and unskilled builders. This very low level of unskilled, relative to skilled, wages in part reflects the limited impact of industrial change and urban expansion in this county. As Chapter 5 suggested those areas in Northamptonshire outside the county town, where the growth of the boot and shoe industry was important, were very dependent on agriculture, and it appears that Fitzwilliam expenditure on fixed investments, such as drainage, took away any resources from the building sector. Thus, in comparing the building and estate wage series, we find that the latter are being paid much more than the unskilled builders.¹ On this rural estate, therefore, the scarcity of alternative employment opportunities for the craftsmen (relative that is to the larger towns of Leicester, Nottingham and Stratford) means that the supply of and demand for unskilled labour is the main force in influencing the changes in wage differential; although the evidence from 1799-1800 and 1807-8 does indicate that craftsmen are able to recover lost ground if differentials are eroded too quickly.

Turning to the West Midlands, the longest series is based on the Stratford-upon-Avon borough records², and the overall trend is more directly,

1 See above, Ch.5, p. 153-4.

2 See Fig. 43.

FIG. 43.

Stratford Builders

Occupational
Differential

Craftsmen

Percentage

Linear Trend
 $y = 72.6 + (-0.155t)$
Labourers

1750 1760 1770 1780 1790 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000

Source: Appendix 4

and uniformly, downward than the series examined so far. The protracted widening of differentials from 1750-1790 is caused by the failure of the unskilled rate to rise anywhere near as quickly as the skilled wage rate. This tendency reflects the apparent over supply of labour that was a feature of southern Warwickshire.¹ In the 1790s this trend is reversed partly, by the revival of labourers wage rates in the early years of the decade, and later, in 1797, by the payment of an equal increase of 4d per day. The first increase in 1791-2 is associated with an upturn in building activity (noted in the national survey of Parry Lewis and in Birmingham by Chalklin)² and an increase in canal building which could have exerted greater pressure on the unskilled labour market. However the 1797 increase came at a time of depression in building, both nationally and in the Birmingham area,³ and therefore presumably reflected compensation for the inflation of the 1790s.

During the 1800s the craftsmen are able to obtain more wage increases than their labourers, and the differential widens once again down to 1809. In the following years the reverse tendency occurs, and labourers receive increases in 1810, 1811 and 1812 which are not matched by craftsmen. It was noted above that these were years of increase for other estate labourers in Warwickshire⁴ and, as Chalklin also suggests a peak in building activity in Birmingham around 1812-13, it seems likely that there were shortages of unskilled labourers. However in the post-1815 depression the massive labour surplus forced the differential even wider so that by the 1830s labourers were being paid only 57% of the skilled rate relative

1 See above, Ch.5, p.160.

2 Op.cit., p.278.

3 Chalklin, op.cit., p.280.

4 See above, Ch.5, p.158.

to 75% in the 1750s.

In Stratford therefore the underlying trend of widening differentials reflected the growth of population beyond the expansion of local employment opportunities. The only exceptions to this trend, in the 1790s and between 1810-12, came when an upturn in building activity coincided with a more widespread expansion in the demand for labourers in canal building, or on the farms. After 1815 there is little indication that alternative sources of unskilled employment are available, which makes it difficult for the labourers to resist downward pressure on their wage rates. In contrast, the closer organisation of the skilled builders, meant that they were able to retain their wartime increases, except for a few poor years in the early 1820s. Thus by the 1830s the Stratford labourers index stands at 171 relative to a peak of 214 in 1812-14 but the craftsmen's index is the same at 191 as its peak in the years 1811-1816 (in both cases 100 = 1790).

To the north of Birmingham the three main building series come from Lichfield, Newcastle and Lilleshall (Figs 36-38) and although the differential tends to widen in the long term in all cases, the most important common element is that in all three series the differential is very narrow in the years before 1790. Skilled builders in these places are only earning 20%-25% more than their labourers, whose wage rates are very high compared to the rest of the midlands. This premium for unskilled workers was seriously eroded as the eighteenth century drew to a close and this trend seems not unconnected with the reversal in the flow of migration in the county. Before the 1790s the rate of natural increase in population, according to Deane & Coles estimates¹ was well above average but so also

1 Deane & Cole, op.cit., pp.106-117.

was the net loss of population through migration. The late 18th and early 19th centuries saw a continued trend of above average rates of natural increase but the net loss of population was reversed as net inward migration became the norm.

During the 1790s these Staffordshire series behave very differently from the other midland series as there is no evidence of narrowing differentials in the building expansion of these years. Instead, in all three series labourers lose out relative to their skilled colleagues until the last few years of the French wars. Whereas the skilled workers were able to gain substantial wage increases, especially in the 1790s, which keep their rates at very high levels the labourers fell further behind.

The only reversal of this widening trend in the differential came in the later 1800s when, in common with Stratford, the labourers were able to take more increases than the craftsmen. This does coincide with a peak in building activity in the Birmingham region¹ and also one or two years of extra demand for harvest labour, which created extra pressure on the supplies of unskilled labour. However this improvement in the position of labourers relative to craftsmen was short-lived, and in all cases the differential begins to widen substantially in the glutted labour market of the 1820s and 1830s. In fact at Lilleshall wage rates drop to exceedingly low levels in the early 1820s such that craftsmen here were only paid at rates which labourers were receiving in Leicester and Nottingham. These levels reflected the extreme levels of underemployment in this area rather than any lack of building activity as such, because it was in the early 1820s that Lilleshall Hall was rebuilt.²

1 Chalklin, op.cit., p. 287.

2 See above, p. 162.

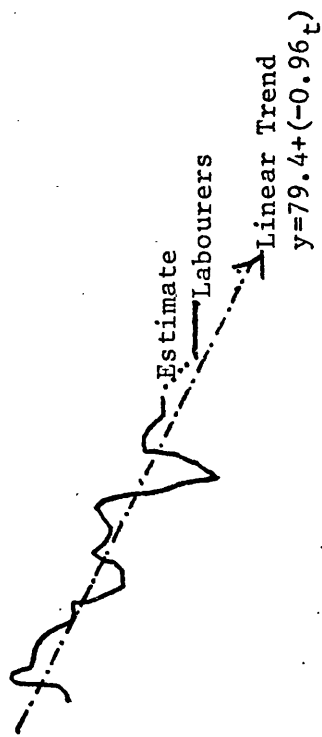
FIG. 44

Ingestre BuildersOccupational
Differential

Craftsmen

120
110
100
90
80
70
60
50
40
30
20
10

Percentage



Source: Appendix 4

Finally two shorter series from Staffordshire from Alton and Ingestre (Fig 44) serve to confirm the 19th century trends that were noted above. These were the faster rate of increase in labourers wage rates around 1810, followed by the sharp widening of differentials after 1815.

To sum up, therefore, this chapter has attempted to look at the Midland labour market from the angle of the skilled wage premium between craftsmen and their labourers in the building industry. Its main conclusion is that there was not a consistent two-thirds margin as many writers have suggested; in fact the differential itself varied widely over the whole period. The general explanations of changes in the differential, which emphasised equal money increments and dilution of craft standards, appeared to play some part in these variations but their impact differed within the region as a whole over the period 1750-1834.

It does appear that there was a sharp distinction between the skilled and unskilled labour markets, especially after 1815 when the skilled workers were clearly better able to retain their wartime gains in the depressed conditions of the 1820s. But once again the Midland wage data has revealed a wide variety of experience within local labour markets.

Chapter VIILocal Variations in Wages

I

One of the central themes of this thesis has been the extent to which wage rates have varied within the region. If the series had been an amalgamation of spot observations based on individual workers, it could have been argued that the dispersion reflected different productivity levels for the specific labourers concerned. But the wage data was based on modal rates, and would therefore tend to even out the problems of individual work performance.

From the appendices it can be seen that these variations persisted into the 1830s when skilled builders wages varied from 36d - 48d per day; building labourers from 22d - 32d per day; estate labourers from 18d - 26d per day; and road labourers from 13d - 27d per day. The work of many wage theorists and historians has led us to expect that these variations would disappear as the economy became more integrated, but in fact this has not tended to happen. In this final chapter the sources of this belief in the eventual equality of wage rewards will be considered and an alternative framework, suggesting the opposite, will be put forward.

II

Although it is important not to exaggerate '... the degree of cohesion of views...' ¹ among classical economists, the bulk of their wage theory was based on two chapters of The Wealth of Nations; Chapter VIII 'Of the Wages of Labour' and Chapter X 'Of Wages and Profit in the Different Employments of Labour and Stock'. ² In the short run wages were said to be determined by dividing the wage-fund by the number of labourers employed, so that each would receive an average or general wage. This notion was really a proposition, or identity, rather than a theory, and emphasised the sources of aggregate demand for labour in the form of pre-accumulated capital. Above all, the labour market was thought to produce a trend towards the perfect equality '... of the advantages and disadvantages of the different employments of labour in the same neighbourhood...', ³ because of the movement of labour towards better rewards. Here, the classical economists were applying their general principle of equal advantage, the corner-stone of their distribution theory, and treating wages as another example of a price being determined by the interaction of supply and demand - although they gave the demand side much more emphasis, in the short run.

Thoughts about the long run determination of wages generally revolved around a customary subsistence level, which was taken to be a psychological norm. This norm, it was thought, would generally rise as industrialisation

1 A.W.Coats, 'The Classical Economists, Industrialisation and Poverty', in I.E.A. Readings. 9. The Long Debate on Poverty (1973), p.143.

2 7th Edition (1793).

3 Ibid., p.99.

produced real gains for all income earners, although both Malthus and Ricardo were fearful that subsistence levels would fall if the growth of population were not curbed.¹ However the main focus of attention remained the short run determination of wages, and it was really the concept of the wage-fund which was '...used in popular polemics as this main proposition blurred into some kind of causal law'.²

In many ways the wage-fund concept applied normative standards by saying what the wages of common labour should be; therefore the analysis had to be extended to cover the fairly obvious differences between their ideal view of the labour market, and the reality of their times. This extension took the form of analysing certain factors which affected the supply of labour to different occupations and which might prevent the equality of rewards. These rewards were seen in a wide sense as the net advantages of different employments and Smith, in particular, looked for compensation, to offset unequal pecuniary payments, in the agreeableness of jobs (extra payments for dirty and dangerous work), the cost of acquiring skills (really a premium for delayed earnings through apprenticeships), the constancy of employment (higher specific earnings to counterbalance seasonal unemployment), as a reward for trust reposed for goldsmiths and the like) and finally to take account of the probability of success and failure (in prestigious professions, like the stage, where the non-monetary attractions of the job may encourage more entrants and depress wages for all but the most successful).³

As a further qualification Smith suggested that it was necessary for

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- 1 See D.P.O'Brien, The Classical Economists (Oxford, 1975), Chapter 5.
 - 2 J.A.Schumpeter, A History of Economic Analysis (1963), p.667.
 - 3 For a modern analysis of these factors see A.Rees, 'Compensating Wage Differentials', in A.S.Skinner and T.Wilson (eds) Essays on Adam Smith (Oxford, 1975).

employments to be well known and long established (and less subject to the vagaries of fashion), for the industry to be in equilibrium (that is for the effects of the trade cycle to be allowed for) and for the employment concerned to be the principal job of the labourer concerned.¹ Provided that all of these conditions were taken into account then the observed differences in wages would be seen to be continually tending towards the equality of net advantage between different jobs.

However, even Smith found that despite these allowances, there were '... very unequal prices of labour frequently found in England, in places at no great distance from one another'; and that '...different prices are paid at the same place for the same sort of labour'.² It was at this stage that Smith began to move on to discuss the obstacles to '... perfect liberty...' which prevented the free movement of labour into those areas or jobs which yielded higher returns. In this section Smith extols the need for more freedom which will allow the '...long term goals to be achieved and would in turn swell the fund'.³ He then goes on to attack the entry restrictions of corporations and craft groups (which cause superior wages to be paid to artificers) and the obstructions to mobility embodied in the Settlement laws.⁴ In other words he confines himself to the factors affecting the supply of labour, and says little about the ways in which the demand for labour may vary within localities.

Thus the classical economists, following Smith, accepted the existence

1 Smith, op.cit., pp.176-183.

2 Ibid., p.218 and p.117.

3 Coats, op.cit., p.161.

4 Smith, op.cit., pp.183-222.

of differences in relative wage rates, but they appear, by concentrating too much attention on supply side problems, to have misinterpreted the causes of these differences. By the second quarter of the 19th century the impact of the corporate restrictions and settlement laws had become much less apparent in obstructing labour mobility, and, it may be argued, that the coming of the railway had made the movement of labour even easier.¹ Despite these trends, the classical economists still apparently refused to see relative wage differences as anything other than short term deviations from the long run trend towards equality. McCulloch, while accepting the possibility that local attachments to a trade could encourage individuals to remain in the same place, and/or the same job, still wrote that '... how slowly soever, wages are sure to be equalised in the end'.² J.E.Cairnes, probably the last of the classics, hung on to the notion of equality of factor returns, although through the new route of mobility of capital to low wage areas.³

The motives for this reluctance to accept the permanency of wage differentials appear to lie in a combination of '... philosophical, political and social reasons...',⁴ and the need to '... neglect other (temporary or accidental) forces in advising on legislative matters: their main forces would dominate in the long run'.⁵ As far as the former reasons were concerned, the Classics seemed eager to prove that the market mechanism would leave

1 Hunt, op.cit., Ch.7.

2 A Treatise on the Circumstances which Determine the Rate of Wages, etc., (2nd Ed., 1854), p.68.

3 Principles of Political Economy (1874), p.182.

4 M. Blaug, 'The Empirical Content of Ricardian Economics', J.P.E., LXIV, (1956), p.42.

5 N.B.de Machi, 'The Empirical Content and Historical Longevity of Ricardian Economics', Economica, 37, (1970), p.265.

everyone equally well off, and that the short term losses in welfare in the early stages of industrialisation would be made up in the end.¹ At a more practical level they were preoccupied with the aggregate '... with states not with families; with general passions and propensities not those occasionally influenced by the individual'.² Cairnes re-iterates this view by suggesting that wages were not to be seen as a matter within the discretion of the capitalists but were determined by outside forces such as the state of industry and the supply of capital; he regarded economic laws as '....principles deduced from human nature and external facts, not statistics of society'.³ For some of these reasons, therefore, most of the early 19th century economists refused to accept that wage differentials had any permanent place in the analysis of labour markets.

There were some observers that objected to accepted wage theories like John Barton who criticised their lack of realism⁴ and T. Perronet Thompson who put forward the influence of opinion and habit on the wage structure, and who regarded individual pressures and reactions as more important in causing wages to be what they were, in contrast to an aggregate comparison of capital to population.⁵ But it was not until the 1860s that '...killing the wage-fund theory became a favourite sport',⁶

1 See Coats, passim.

2 J.R. McCulloch, A Discourse on the Rise, Progress, Peculiar Objects and Importance of Political Economy (1824), p.15.

3 Op.cit., p.56.

4 Observations on the Circumstances which influence the Condition of the Labouring Classes of Society (1817).

5 'The True Theory of Rent, in Opposition to Mr Ricardo and Others', Westminster Review (1831), p.16.

6 Schumpeter, op.cit., p.667.

Francis D. Longe realised that he was not simply refining classical wage theory, but attacking a concept which was a '....fundamental creed of some of the most prominent advocates of political and social advancement of the working classes a truth long since well established....'¹ His main criticism was that the fund removed any power from individuals to determine wage rates and made that operation in some way automatic. He singled out especially the assumption of equal competition between employers and labourers and contended that there was no real reason for the employers to give anything more than the lowest sum which would get labourers to do the work that they wanted; and in order to counterbalance this advantage he thought that the power of trade unions should be strengthened. In effect he suggested that no wage theory could be acceptable which excluded the '....dealings between individual employers and labourers'.²

This attack on the equality of bargaining strength between employer and employee was taken a stage further by W.T.Thornton, who went on to deny the similarity between wage and commodity price determination. He argued that the extreme poverty of the labourer undermined his position, vis a vis the employer, who could always force lower wages by threatening to curtail employment. In these circumstances the employer could live on his capital, whereas the labourer would lose everything as his labour supply or effort could not be stored.³ He even went as far as to suggest that wages were determined not so much by mutual competition but by mutual combination between employers,

1 A Refutation of the Wage-Fund Theory of Modern Political Economy (1866), p.12.

2 Ibid., p.71.

3 'What Determines the Price of Labour?', Fortnightly Review, 7 (May 1867), p.555.

as it was only in rare circumstances that they actually bid against each other for labour when tempting away '....another's servants by offers of increased pay would be treated as traitorous to the common cause'.¹

An abortive attempt by T.E.Cliffe Leslie to use the wage-fund theory as an explanatory model of Irish migration in the mid-19th century, led him to support the attack on the unreal uniformity of the theory. He considered that the importance of individual causes of varying wage levels meant that the general propositions which underlay the wage-fund were inaccurate and inadequate.²

It was partly under the weight of these attacks that J.S.Mill produced his famous recantation of the wage-fund in 1869, when he admitted that the buyer had the initiative in fixing the price of labour, and this would lead to '....a range within which the price of labour is decided by a conflict of wills between employers and labourers'.³

Thus by the 1870s the effectiveness of the wage-fund theory in explaining the determination of wages had been undermined by the persistent attacks of those observers who denied that wage rates were set by very general factors, and that the rates themselves (together with the non-pecuniary advantages) were tending towards equality. The persistence of the classical theory, as we noted above, was due largely to the preoccupation with long run goals but this '....does not excuse the unsound generalisations or neglect of relevant differences - whether these were sex, age, family, occupational or regional - in labour conditions'.⁴ Their major failing seems

1 Ibid., p.561.(This seems to hint at the existence of informal anti-pirating agreements).

2 'Political Economy and Emigration', Fraser's Magazine, (May 1868), p.613.

3 'Thornton on Labour and its Claims', Fortnightly Review, XXIX (May 1869),p.680

4 A.W.Coats, 'The Classical Economists and the Labourer', in E.L.Jones and G.E.Mingay (Eds), Land, Labour and Population in the Industrial Revolution (1967), p.101.

to have been the neglect of demand conditions in different parts of the labour market, because, as the costs of migration fell throughout the 19th century, the flows of labour from low-wage areas was not strong enough to produce the full equilibrium in wage rates that the classics expected. And, as population continued to rise in the low wage areas, the regional imbalance became increasingly worse as employment prospects (in regions like the southern counties of England) fell far short of available labour supplies.¹

In the later 19th century an attempt was made to fill the vacuum left by the loss of confidence in the wage-fund theory with a theory which paid more attention to the demand for factors: the marginal productivity theory. This suggested that factors should be rewarded according to value of their marginal product; anything less than this and the entrepreneur will lose potential profits as revenue falls short of costs, anything more and he will make losses. Once again wages are to be seen as part of the general theory of value and are determined by supply and demand - albeit a derived demand for the final product.² These neo-classical economists, therefore, resorted to the use of price as the instrument for allocating labour among alternative uses, because price was much more easily quantifiable (relative to the complications of net advantages), it was thought to have a fairly consistent relationship to preference patterns (i.e. the higher the price the greater the demand) and finally because within broad areas it was felt to have a priori justification in the movement of Europeans to the USA or rural workers to the towns.³ Thus, we have in a more narrow form, the

1 See Hunt, op.cit., Ch.7; and Rees, op.cit., p.347.

2 J.R.Hicks, Theory of Wages (1932), p.1.

3 See Rottenberg, 'On Choice in Labour Markets', I.L.R.R. (Jan. 1956).

proposition noted by Adam Smith that competition will result, via mobility, in the '.....equality of efficiency earnings in the same district and specific wage bargains are mere ripples on the surface, the short-term oscillations around the one normal equilibrium'.¹

From a different route therefore we have arrived back at the same proposition that wages will be determined by movement of labour to the highest returns, and that in the long run there will be a tendency for wages to succumb to equalising forces. There may be differences in the short-run, but these are to be seen as the product of the slow working of the market as '....potential mobility is the ultimate sanction for the interrelation of wage rates'.²

If the marginal productivity theory had its main advantage in concentrating attention on the demand side, it had its most serious drawback in neglecting the supply of labour, which it took to be fixed in the short run. Now this is hardly acceptable if this is specified as an hour's work at the standard level of intensity, and therefore the ability of this theory to predict the hourly rate of wages is gravely suspect. Instead the theory provides another normative principle of distributive justice and is but '....a partial analysis which takes as independently given the factors that determine the demand and supply schedules'.³ This wage theory is still unable to cope with the wealth of empirical detail which observes real differences in wage rates, and Paul Samuelson has commented that '....there is no satisfactory body of economic principles that tells us a great deal about this subject'.⁴ Even Hicks, the arch-exponent of neo-classical wage

1 A. Marshall, Principles of Economics (8th Ed), (1930), p.540.

2 Hicks, op.cit., p.79.

3 Schumpeter, op.cit., p.942.

4 Economics (1964 ed.), p.529-30.

theory admits that '...a long road has to be travelled before the abstract proposition can be used in the explanation of real events'.¹

Thus if one looks towards the classical or neo-classical theories of wages to provide help in explaining the determination of wage rates one is likely to be disappointed. There appears to be a divergence between events and principles which has come about because economic theory has sought to relate the price of labour very closely to the working of the economy as a whole. This has meant that the details of how wage rates are determined within individual jobs, firms, industries or regions have been swallowed up within all-embracing averages or long term trends. In essence the problem remains that of either giving in to '....halting agnosticism which can neither forecast nor understand...' ² or attempting to look in detail at the forces which fashion decisions on wage determination in an effort to '.... reduce the bewildering array of influences into some sort of order'.³ Or, to use Bowleys analogy, do we want the telescopic or microscopic effect?⁴

1 Op.cit., p.10.

2 M. Dobb, Wages (2nd Ed. 1946), p.144.

3 F.C.Pierson, 'An Evaluation of Wage Theory', in G.W.Taylor and F.C.Pierson (Eds), New Concepts in Wage Determination (New York, 1957), p.11.

4 Economic Journal, viii (1898), p.479.

III

The foregoing review of classical and neo-classical wage theories has, despite serious theoretical and empirical short-comings, emphasised the expectation that relative wage differences would be eroded by the inclusion of non-pecuniary advantages and/or the migration of labourers to high wage areas and occupations. This expectation has survived for many years, and its attractiveness on a priori grounds has meant that it has served as an implicit assumption for many economic historians who have written on the labour market and the problem of the determination of wage rates. Elizabeth Gilboy, after a long study of wage rates in the Northern and Southern areas of England in the 18th century concluded that regional differentials were disappearing toward the end of that century,¹ and P. Deane and W.A.Cole, after considering her data in some detail, concluded that differentials narrowed '....markedly...' (emphasis added) in the course of the 18th century.² T.S.Ashton also considered that the effect of economic and social change in the late 18th century was to reduce local variations of wages and to '....assimilate those paid in the country to those in the towns'.³

In the only major work on labour migration before 1850 Arthur Redford linked the wave-like, short distance movements to the pull of higher wages

1 Op.cit., p.165. Her evidence for this conclusion is very weak as her London building rates still vary between 30-42d per day for craftsmen and 18-33d per day for labourers in the 1790s; and in Yorkshire and the West Country the number of observations are far too small to justify such a conclusion, see Tables IV-XI, pp.265-287.

2 Op.cit., p.18. Although W.A.Cole has recently changed his interpretation see his review of E.H.Hunt's book in Ec.H.R., XXVII, No.3 (Aug. 1975), pp.536-8, where he suggests that '....regional inequalities had almost certainly increased in the classical period of the Industrial Revolution'.

3 An Economic History of England - the 18th Century (1955), p.233.

as he placed the rate of agricultural wages '.... in inverse proportion to the distance from manufacturing towns...' ¹ It was also his contention that workers became more mobile as industrialisation progressed given the improvements in transport, the spread of information and the reduced effectiveness of the settlement laws, hence differentials were bound to be eroded by the invisible hand of the market regulating the demand for, and supply of, labour.

In short, therefore, the predictions of wage theory has coloured historical analysis despite the contradictions inherent in the data. Indeed some of the authors already quoted have themselves noticed irregularities. Gilboy notes regional divergences within, as well as between, her three main areas; ² Ashton also suggested that the determination of wages was normally a matter of individual negotiation between masters and men because the

'....market for labour was far from perfect as on the side of the masters the area of competition was relatively narrow; it is hardly possible to speak of a regional let alone a national market for labour'. ³

Also, the attractive proposition of wages being ranked by distance from towns, noted by Redford, ⁴ was criticised by Gilboy because the wages that she found for general labourers in the North Riding of Yorkshire were just as high as those in the immediate neighbourhood of the manufacturing towns. ⁵

1 Labour Migration in England 1800-50 (2nd Ed. 1965), p.69.

2 Op.cit., p.161, p.165, p.224.

3 Op.cit., p.219.

4 Who was following Arthur Young, Northern Tour (1771), p.445-6.

5 Op.cit., p.189.

Similar conclusions were reached by J.D.Marshall, who, with reference to Lancashire in the 1830s, found labourers wages in the remote parts of Westmorland to be '.... nearly as much as workers at Ince Blundell and Trafford Park, within a few miles of Liverpool and Manchester respectively...' and he concluded that any theory of migration based solely on wage gradations or differentials is founded on oversimplification.¹ There seems to be some tendency therefore to fuse labour mobility and wage differentials into a single problem, because of its logic rather than the evidence.²

Such evidence that we have on relative wage payments, in fact, tends to indicate their diversity. J.D.Marshall, in the article on Lancashire wages, noted the significant variations in wages within local areas³ and M.K.Ashby reflecting upon her father's experiences in early 19th century Warwickshire commented upon the extent of local variations which saw

'.... wages differ, in adjacent villages, by two shillings a week, that is by nearly 20 per cent without any difference in demand or supply; in villages further apart, though with similar circumstances there could be a difference of four or five shillings, that is fifty per cent'.⁴

Further into the 19th century a national survey by the Amalgamated Society of Engineers produced the comment that 'wage rates were fixed locally - practically on a shop to shop basis'.⁵ In the printing industry the most noticeable feature about wage rates was their increasing variety and complexity as '.... differences existed not only

1 'The Lancashire Rural Labourer in the Early 19th Century', Trans.Lancs. & Cheshire Antiquarian Society, LXXI (1961), p.98.

2 L.G.Reynolds, The Structure of Labor Markets (New York, 1951), p.207.

3 Op.cit., p.99.

4 Joseph Ashby of Tysoe (1961), p.159.

5 M. & J.B. Jeffreys, 'The Skilled Engineer in 1861', Ec.H.R., I, (1947), p.33.

between the various towns but between different offices in the same town, and between different departments in the same office.'¹ Eric Hobsbawm, when looking into the effects of tramping on wages and mobility, suggested that the system '.... did not, and could not eliminate the very marked local discrepancies, even within small regions', and he also established the opposition of local union branches in Birmingham to the establishment of a uniform rate within a six mile radius of the town centre.² And even at the end of the 19th century F.W.Lawrence, in an extremely comprehensive survey of Trade Union wage returns, found '....striking variations...(in wages)... which are to be seen in the same trade in passing from one town to another'.³

Thus, there is a considerable amount of evidence as to the extent and existence of diversity in wage payments within even fairly small areas such that,

'....the individuality of wage rates in different industries, and the independence of their relative movements, strongly suggest that factors peculiar to each industry and each locality have an influence'.⁴

And these individual influences have also been stressed in the most recent work on 19th century wages by Dr E.H.Hunt. The bulk of his book is devoted to the analysis of the broader patterns of regional wage variations, which he finds to have persisted throughout the second half of the 19th century, but he also recognised the existence of '.... considerable local variations between the regional wage pattern'.⁵

1 A.E.Musson, The Typographical Association (1954), p.182.

2 'The Tramping Artisan', in Labouring Men (1964), p.53.

3 Local Variations in Wages (1899), p.1.

4 J.W.F.Rowe, Wages in Practice and Theory (1928), p.192.

5 Op.cit., p.217.

The bewildering complexity of wage bargains at local level, which has been suggested by these writers, and which appears in the preceding discussion of Midland wages in the later 18th and early 19th centuries, appears to contrast vividly with the expectations of the wage theorists. But, the question remains as to whether this complexity was in any way peculiar to the British labour market before 1914? Could it be that the historical accident of Britain's long lead in world industrialisation had produced a highly imperfect structure? Some reference to wage rates and mobility in the U.K. and U.S.A. in the 20th century will show that the 19th century pattern was in no sense unique, and that the all-pervasive equalising forces have still to make themselves felt.

Given the severe problems of unemployment and regional problems during the inter-war years it is not surprising that fresh attempts were made to look into the whole question of labour mobility. Brinley Thomas made a study of the labour market in South Wales and placed specific emphasis on the persistence of horizontal and vertical wage differentials, in addition to stressing that the '....mobility response is not simply a matter of economic forces but an inexplicable variety of individual actions'.¹ And in a series of articles in Oxford Economic Papers Makower, Marshak and Robinson contended that wage differences were unimportant in mobility, it was much more a matter of product demand and job opportunities.²

However it was left to Barbara Wootton to pull together the strands of the British labour market in an explanation which stressed the '....accumulated

1. 'Studies in Labour Supply and Labour Cost' (London PhD, 1931), p.114.

2. Vols. i, ii and iii (1938-40).

deposit laid down by a rich mixture of social and economic forces operating through considerable periods of history'.¹ She also suggested that non-monetary rewards exacerbated the pecuniary differentials (in contrast to the ideas of equal net advantage) and concluded that classical theory was unable to explain the wage structure because it treated its most striking features as incidentals.² More recently, two empirical wage surveys have confirmed many of her conclusions. Firstly, Derek Robinson has found a consistently wide range of earnings (of up to 30 per cent) in a national survey of engineering firms and that these appear to be the rule rather than the exception.³ He also suggested that the differences were not compensated by net advantages (again he found that these were greater where wages were higher) and that few very powerful economic forces were tending towards uniformity of wage structure or differentials; in fact averaging aggregate statistics served only to mask the great variety found in practice.⁴ Secondly a survey by the Department of Applied Economics at Glasgow University elaborated a wide spread of wages both within and between local labour markets in Birmingham and Glasgow and concluded that competition served to maintain rather than close differentials. In short they considered that the most obvious problem for economic theory was to reconcile itself with the persistence of these differentials.⁵

Many of these comments have been echoed by American labour economists;

1 The Social Foundations of Wage Policy (2nd Ed. 1964), p.161.

2 Ibid., p.66.

3 Local Labour Markets and Wage Structure (1970), p.77.

4 Ibid., p.244.

5 Mackay, Boddy, Brack, Drack & Jones, Labour Markets under Different Employment Conditions (1971), p.282.

Richard A. Lester, in an analysis of North/South wages was struck by the '...appreciable differences within Southern wage rates ... which ... varied widely and irrationally'.¹ And in another article he concluded that the textbook impressions were misleading as diversity preceded concentration, and a range of wage rates was much more common than a concentrated uniformity.² Lloyd G. Reynolds discovered important degrees of dispersion in New England wages and suggested that '.... a range of rates exists for the same grade of labour so that there is no single rate which clears the market'.³ Equally important was the confirmation that both of these studies gave to the idea that the inclusion of non-pecuniary rewards made the differences in wages even wider as low wage plants gave fewer perquisites.⁴

These trends have been confirmed in general by recent surveys which continue to emphasise '....the random chaotic or purely institutional nature of wage structures and mobility patterns'.⁵ And, in fact, rules become '.... more constrained and less responsive to market forces thereby explaining much of the rigidity of labour markets'.⁶

This survey has attempted to show that there is a good deal of empirical evidence to suggest that the predictions of classical and neo-classical wage

- 1 'Trends in Southern Wage Differentials', S.E.J., XI, (1945), p.337.
- 2 'Diversity in North-South Wage Differentials', S.E.J., XII, (1946), p.258.
- 3 Op.cit., p.248.
- 4 Lester, R.E.S. (1946), p.157 and Reynolds, op.cit., p.238.
- 5 A. Rees and G.P.Schultz, Workers and Wages in an Urban Labor Market, (Chicago 1970), p.3.
- 6 P.B.Doeringer and M.J.Piore, Internal Labour Markets and Manpower Analysis (Lexington, Mass. 1971), p.24.

theories are not confirmed, and that taken together with the theoretical problems outlined in the previous section this indicates the need for a different approach to the explanation of wage rates. Although there may be different forces operating in the modern economy to prevent the closure of differentials (such as the heavy investment in on-the-job training, the vested interests of employees in pension schemes, the anti-pirating agreements between firms and the tendency for trade unions to negotiate national bargains which would confirm ex ante rankings)¹ the lack of evidence over two centuries in the U.K. that wages were becoming more equal is surely sufficient to cast doubt on the convenient link between wage differentials and labour mobility. An alternative explanation will be offered in the final section of this chapter which will combine the wider forces operating in the economy with the more specific conditions operating within each firm, industry or locality. It is only by examining the results of this combination that any firm conclusions can be drawn as to how wage rates are actually determined.

IV

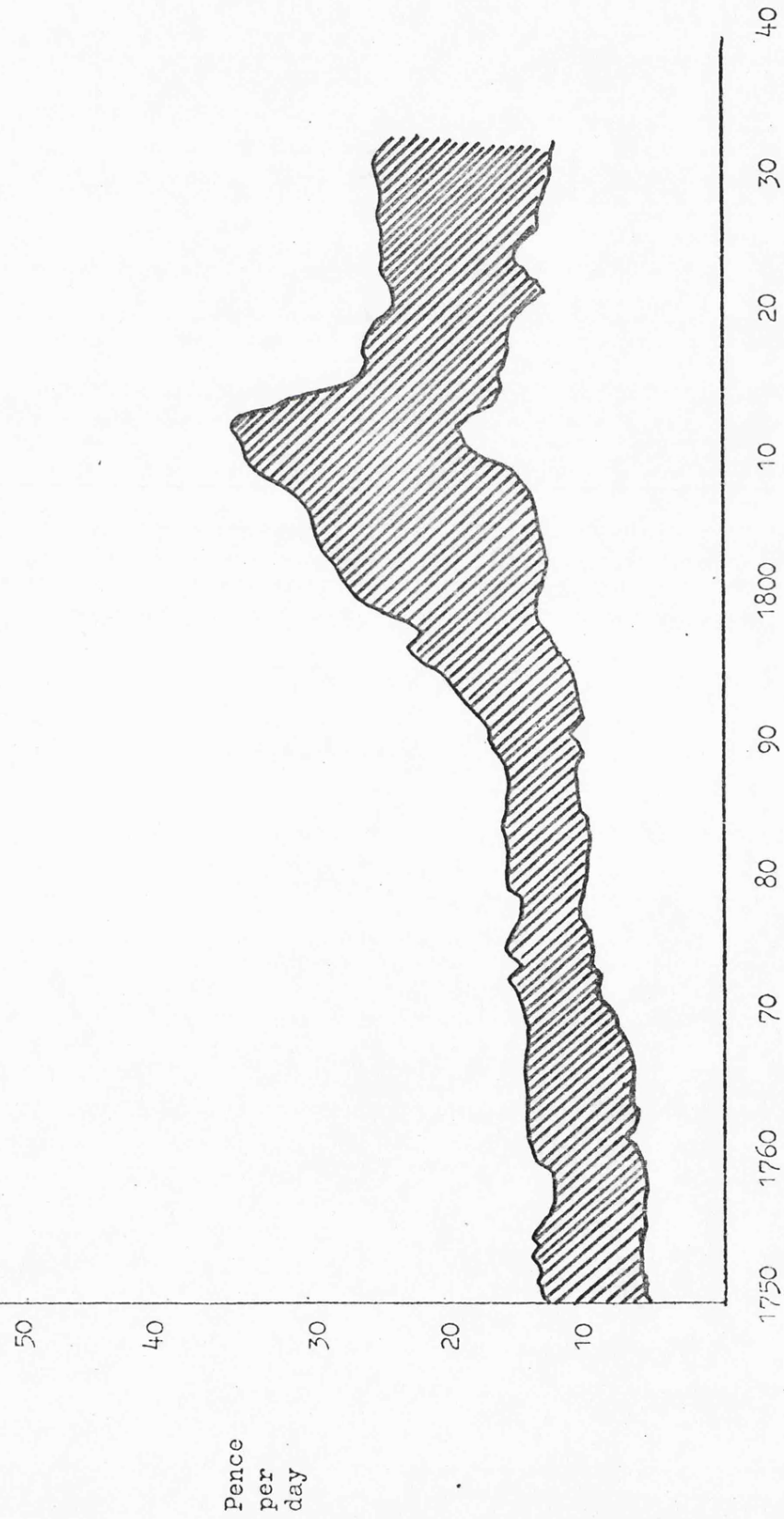
One of the biggest problems in explaining how wage rates are determined is that once the well-established link with labour mobility is queried then any sort of order within the labour market is lost in a '....profusion of random and chaotic wage structures'.² As social scientists we feel a need to restore order, at the same time as providing an eclectic rather than a unitary explanation because of the doubts surrounding terms such as 'the

1 See D.I.Mackay and R.A.Hart, 'Wage Inflation and the Regional Wage Structure', in Contemporary Issues in Economics (Eds), M.Parkin and A.R.Nobay (Manchester, 1975).

2 Rees & Schultz, op.cit., p.3.

FIG. 45

Range of wage rate observations for
road labourers
Mean wage rate \pm 2 standard deviation.



Source: Appendix 3

competitive wage', 'the equilibrium wage' or 'the wage that clears the market'.¹ A compromise between these two needs may be reached by using the notion of a range of wage rates which are paid within a given area to labour which is doing similar work. By examining the frequency of wage rate observations a range can be specified within which most wage rates will fall, and the behaviour of this range over time and the ranking of individual firms² can then be noted. For example in Fig 45 the data set for road labourers wage rates has been expressed in the form of a range by adding and subtracting twice the standard deviation from the mean³ and this gives a much more realistic picture of the movement of wages, than would be the case if the mean alone were used. Obviously, there is a certain loss of precision but this cost has to be measured against the greater degree of realism.

Once the idea of a range of indeterminacy is introduced it increases the scepticism with which single variable explanations of wage rate determination are treated; it introduces an element of uncertainty which earlier economists were inclined to minimise.⁴ The uncertainty surrounds the ranking of firms within the range and how this ranking may change over time when wider economic pressures have been felt. It is the reaction of firms to these pressures that determines the ranking and this reaction can only be understood if one takes into account the particular circumstances of each firm.

Hence, there should be a classification of influences which determine

1 R. Lester, 'A Range Theory of Wage Differentials', I.L.R.R., 5, (1951-2), p.500.

2 Firms in this case is taken to include the estate, borough or parish employers.

3 This will then show 96% of observations.

4 Pierson, op.cit., p.31.

wage rates based on the split between external economic pressures and the internal response of the firm at local level. The influence of external economic pressures may be noted in Fig 45 as producing a very slow gradual rate of wage increases up to 1790, to be followed by an explosion of change up to the end of the Napoleonic wars and a decline in rates throughout the 1820s and early 1830s. Most parts of the Midlands economy would have felt the impact of the wartime inflation, for example, but this impact would not have been strong enough to impose the sort of uniform reaction which classical economists expected. In this sense it may be possible to isolate aggregate economic pressures, but to examine the effects of these on local wage rates it is also necessary to take account of the particular situation of the local labour market.¹

By linking external and internal forces it may be possible to avoid dismissing all the influences which the classics considered to be important, at the same time as denying their primacy in determining changes in wage rates at local levels. These external influences were those which led many economists to regard wage determination almost as an automatic process and which left the employer little choice over wage rates,² and which also therefore were most objectionable to those empiricists who believed in '.... managerial discretion ...'³ in setting wage levels. In order to satisfy both schools of thought some combination of these pressures is required such that '.... the external market may set wide limits but in practice the external forces are often subordinated to internal pressures'.⁴

1 - Robinson, op.cit., p.268.

2 Ibid., p.51.

3 Mackay et al, op.cit., p.88.

4 Robinson, op.cit., p.66.

To a large extent this methodology was applied in Chapter 5 which surveyed the Midland wage data in some detail. There, the external pressures were particularly associated with acceleration of economic growth from the mid-18th century and the impact of the French wars on the economy. In particular, the growth of Birmingham and the Black Country was seen to have had a marked effect on the economy of the West Midlands by providing alternative sources of employment which placed pressure on the labour markets of South Staffordshire and North Warwickshire. Similarly in the area around Nottingham the expansion of mining and the textile industry, especially from the 1780s produced sharp wage increases. As far as agriculture was concerned a major theme of the chapter was the economic flexibility of lighter soil areas, which allowed them to take speedy advantage of rising profitability up to 1815, and to alleviate the distress of the post-war price collapse. Areas such as the Dukeries in Nottinghamshire and central Staffordshire were seen to have been better able to maintain their economic position than Northamptonshire or South Warwickshire. Levels of population growth and density were also stressed as factors which would set the limits of labour market pressures, for example in the pastoral areas of eastern and southern Leicestershire relative to the growing areas of the potteries or the shoe producing villages around Northampton. In other words, the delicate balance between population growth and local employment opportunities were thought to have set the external limits of wage rates.

Overlying the evolution of the economy was the disruptive influence of the Napoleonic war, especially its effects on prices. All the major price indices show substantial increases from the early 1790s¹ and this would certainly have produced pressure for wage increases. In addition the

1 See M.W.Flinn, 'Trends in Real Wages 1750-1850', Ec.H.R., XXVII, No.3 (1974), p.400.

rapid improvement in agricultural profits expanded arable farming (and therefore employment) on less fertile land in Northamptonshire, central Nottinghamshire and southern Warwickshire. The impact of the war on trading prospects would also have influenced the building trades in the west Midlands, producing the well-established cyclical pattern. Equally, once the war was over the problems of over expansion, reliance on sub-marginal land and rapid population growth forced prices downwards in the trough from 1815 to the mid-1830s when wholesale underemployment and social distress were widespread.

All of these general trends were bound to influence the determination of wage rates, but the specific amount by which they were influenced varied widely, according to the internal condition of the work unit - whether this was the estate or the borough council or the parish. In other words the local labour market acted as a shield or insulator, which could exacerbate, impede or even reverse the impact of competitive external pressures. It was these internal responses which prevented the easy adaptation of wage rates and produced the diversity of rates, not only in the Midlands but throughout the economy. In particular, it was the strength of the local labour markets to resist the automatic movements in wages that the classics predicted, which has prevented the completion of the expected trend towards equality in either rates or net advantages. This is not to argue that the classics ignored the powers of the work units to resist wider economic pressures, but to suggest that they underestimated that power because they felt that the external forces would be strong enough to impose a uniform response among employers. Instead, they appear to have exaggerated the power of the 'invisible hand' of the market, and underestimated the influence of non-economic forces which not only conditioned the internal response but also determined the initial position of the estate or parish with respect to

the level of wage rates that were paid.

To many economists this failure to follow the most obvious, and rational, rules of the economic game, was but another indication of the immaturity of industrial relations in this period. Explanations of this behaviour were couched in terms of '....that unsatisfactory agent custom...',¹ and it was implied that the progress of the economy would eventually produce a truly integrated market economy wherein the trend towards equality would be inevitable.² As the early sections of this chapter have attempted to show, this tendency has not materialised, and therefore one must conclude that '....silent social forces must take some responsibility for the continued discrepancy in remuneration...'.³ In many ways the problem of explaining wage rates revolves around the definition of custom as anything which is non-economic and which must therefore be irrational; reference to the effects of custom are often regarded as an '....expression of defeat to scientific minds...'.⁴ However, if the process of wage determination is seen in a more inter-disciplinary sense as a combination of social, economic, cultural, psychological and historical factors then the '....crass economic reductionism....'⁵ of some observers might itself appear irrational.

Custom, therefore, may be used to explain wage differentials if it is recognised as an indicator of a whole range of factors which may influence wage rates rather than a stultifying influence more in keeping with a pre-industrial economy. Chapter 6 showed the futility of using the two-thirds margin for unskilled builders as a sacrosanct measure, for although wage

1 Rowe, op.cit., p.68.

2 See Ashton, op.cit., p.219.

3 Wootton, op.cit., p.70.

4 Rowe, op.cit., p.68.

5 E.P.Thompson, 'The Moral Economy of the English Crowd in the 19th Century'. P&P, 50 (1971), p.

patterns may acquire some inertia they are certainly not invulnerable to change in an era as dramatic as the industrial revolution.¹ The role of custom may be thought to have been pushed too far however by Mrs Gilboy who thought that the high wages which she found in the North Riding were a relic of the days when labour had to face the danger of Scottish border raiders!²

E.J.Hobsbawm has provided the most comprehensive survey of custom in the 19th century economy and he takes this to include all behaviour based on short term calculation rather than long-term rational analysis.³ Although much of his work is concerned with the amount of effort contributed by labour, his emphasis on the bond of social responsibility between workers and employers, the moral or ethical influences on attitudes and the historical development of workplace relationships does offer certain clues in the search for more precise wage determinants. Another historian of labour conditions, J.D.Marshall, also concluded that the sociologists had as much to offer to the problem of wage differentials as had the economist⁴ and E.P.Thompson has shown that ideas of just prices and social equity in economic affairs were not at all out of place in the 18th century.⁵ Similarly Eric Richards has applied similar reasoning to the Swing riots of 1830 by suggesting a correlation between areas of rioting and areas '...where for better or worse the cash nexuses associated with the older paternalistic and deferential society were lost'.⁶ Trust between worker and employer remained an important

1 See Arthur M. Ross in Taylor and Pierson, op.cit., p.200.

2 Op.cit., p.190.

3 'Custom, Wages and Work Load in 19th Century Industry', in Labouring Men, (1964), p.344.

4 Marshall, op.cit., p.105.

5 'Moral Economy', op.cit., p.135.

6 See E.H.Hunt, op.cit., p.4 for a very brief mention of a feature which undermines some of his broader generalisations.

bond which often transcended crude economic logic. Thus the importance of non-economic influences has received some attention, but they are too often dismissed as random factors in the search for more manageable hypotheses.¹

In many ways the attention paid to wider economic influences on wage rates may be justified if the objective is to trace general trends in wage patterns. If, however, the object is to account for the determination of wage rates within particular areas then the emphasis should be placed more firmly on a wider range of influences which could explain the diversity of rates for similar jobs often in the same area.

The emphasis placed on the bond of responsibility between employers and workers seems to have had an effect on estate wages where some landowners were jealous of their reputations as good employers, and thus responded quickly to rising living costs - for example at Strelley in the 1790s, at Alton in the 1800s, at Milton in the 1790s. Equally there were other estates where the response of wage rates was very slow and presumably indicated that owners were too mean or too poor to pay increases - for example the very low wage rates at Teddesley and Chillington until 1810, or Eatington and Packington until 1809. There also appears to have been informal anti-pirating agreements between neighbouring owners, which prevented the easy transfer of labour between estates.² After 1815 the varied nature of the estates provided work in some cases outside the direct farming operation in timber plantations and pleasure gardens and so prevented wage rates from falling as fast as they did elsewhere - for example contrast the wage levels

1 See E.H. Hunt, op.cit., p.4.

2 See D.R.Mills, 'The Geographical effects of the laws of Settlement in Notts', E.M.G., 5, (1970), p.36.

at Milton and Grafton in Northamptonshire, or Gonalston and Worksop in Nottinghamshire or Trentham and Shifnall in Staffordshire. Some estate owners did not increase wage rates in the inflationary conditions of the 1790s, but did pay supplements - for example on the Packington estate an extra 6 pence per week was added at the end of each year from 1794-1801.

For estate employees therefore the rate of change in wage rates depended very much on the personality of the owner, and on the condition of the estate economy. But even here it is still possible to find variations or inconsistencies, for on the Milton estates in Northamptonshire during the 1820s the general labourers wage rates were much stronger than building labourers on the same estate and in fact the latter were paid 4 pence per day less than their colleagues throughout the 1820s and early 1830s.¹ A similar exception was found at Welbeck Abbey in the 1790s, although here it seems that the keener agricultural interests of the Duke of Portland was reflected in higher wages than his building labourers.

Looking at the building industry as a whole the most important conclusion to come out of Chapter 6 was that the skill differential varied markedly within the region, and in the same location over time. This is especially important if one looks at the impact of inflation; when one would expect differentials to have been eroded by the payment of equal money increments to compensate workers for changes in the cost of living.² For those working in the same place, on the same job, it is reasonable to suppose that living costs rose by similar amounts for both skilled and unskilled workers, yet the number of times that equal wage increases were

1 See above Chapter 5, p.153-4.

2 See above, p.181.

paid was found to be very small. Thus there appears to have been two quite separate labour markets on the same site which was bound to produce a very varied response to external economic pressures.

The actual demand for builders varied widely within the data set from borough councils through urban property development to the direct construction of country houses. Workers in the first category were found to have been paid at rates less liable to fluctuation, especially after 1815, which could either have been caused by the financial security of local government, or the urgency with which work had to be carried out to local goals or asylums. In addition, the rapid growth of Leicester and Nottingham was bound to have increased the need for maintenance of roads, bridges and pavements and thus ensured buoyant demand conditions for these relatively well paid workers. As far as urban property was concerned the Stafford estate provided employment in Lichfield and Newcastle at very favourable rates until the Gower interest decided to withdraw their urban investments and work came to ~~an~~ abrupt halt in the 1820s.¹ Even the building of a country house did not have an immediate impact on local building wages, for instance the reconstruction of Lilleshall Hall in 1823 did little to change the level of building wages in this isolated area.

Wage rates paid to road labourers were determined within the most easily identifiable local labour market: the parish. Here, the rates offered seem to have been determined by the surplus labour available (that is the existence of other local employment in the winter months) and the pressure placed upon the surveyor to maintain the standard of the roads. Both of

¹ See above, p. 162.

these forces reflected peculiarly local conditions and it is, therefore, no surprise that the series of road labourers wages reveal very marked differences within fairly narrow geographical areas.¹ Important clues to the level of road workers wages were suggested in Chapter 5, and in many cases they revolved around the opportunities for secondary employment in the hosiery, ribbon or shoe trades. For example in the hosiery belt in south west Leicestershire the parish of Stoke Golding recorded very high road wages until 1815, and then they slumped very badly in the post-war years; it was suggested above that this was probably influenced by the condition of the outwork sections of the framework knitting industry.² Similarly in the same county extremely low road wages were found in parishes that were isolated from the main centres of activity at Burrough, in the pastoral east and Kimcote and Shawell in the south.³

In Northamptonshire the influence of alternative employment in the boot and shoe industry improved the standing of road wage levels after 1815 when this handicraft industry expanded rapidly.⁴ On the other hand the decline of the Coventry ribbon weaving trades appears to have produced a downward trend in wage levels in the 1820s,⁵ whilst the local impact of the lace boom in Nottingham during that same decade had a marked upward influence on local labourers wage rates.⁶ Therefore it would appear that the changing fortunes of many local craft industries had a profound influence on wage

1 See above, Ch.4.

2 See above Ch.5, p.20 and D.R.Mills, Poverty and Social Policy (Milton Keynes, 1974) p.21.

3 See above, Ch.5, p.145.

4 See above, Ch.5, p.155.

5 See above, Ch.5, p.159.

6 See above, Ch.5, p.149.

levels within fairly narrow geographical areas, and these must be included in any explanation of wage differentials. Some attention has also been paid to the higher levels of road wages in parishes either in or near to urban areas or market towns (such as Market Harborough, Northampton, Leicester, Great Barr and Warwick) and this appears to have been the result of higher living costs (especially rents) but also the more varied employment prospects especially in service trades.¹

There were other more specifically local influences suggested in Chapter 5 which might explain changes in wage rates; for instance the apparent association at Teddesley in Staffordshire of a very sharp wage rate increase in 1812 with the extra employment that would have been involved in the enclosure of large parts of Cannock Chase in that same year.² In the same county there is also evidence that extensive and costly land improvement schemes were started in the 1820s to provide employment (and thus prevent wage rates from falling too far) at Lilleshall and Trentham.³

The main theme of this concluding chapter has been that any explanation of why certain wage rates were paid must involve a combination of external economic pressures and the varying responses of employers to these pressures. In the last few pages certain factors have been put forward which appear to

1 See above, Ch.5, p.159.

2 See above, Ch.5, p.163.

3 Richards, 'Captain Swing....', *op.cit.*, p.89. It also appears that similar investments were undertaken at Milton, see above, Ch.5, p.154. Some economic justification for this expenditure has been suggested by Dr E.J.T.Collins in that it kept labour in the area during the winter months when they might otherwise have moved away and caused problems in recruiting harvest labour in the following year. In this case there would be both economic and social causes for not playing the market rules of attempting to pay the lowest wages for the shortest possible time. See his 'Harvest, Technology and Labour Supply in Britain 1790-1850' (Unpublished PhD thesis, Nottingham, 1970).

have influenced the level and rate of change in wage rates in the Midlands labour market. They do not provide a complete explanation for all the observed differences - for example the sharp variations in road wages in the neighbouring parishes of Kilvington and Staunton or Little Billing and Abington or Wolfhamcote and Badby or Packington and Meriden¹ - but they do attempt to show the importance of the individual work unit as a decision-maker. In other words it supports the rejection of the market as the prime influence on wage rate determination at the same time as accepting its role in producing changes in rates over time.

There are many problems which have been neglected in this whole survey, notably the role of perquisites. It could be argued that the existence of non-monetary rewards (such as free food and ale or low priced produce) might be enough to compensate for the observed wage rate differences thus supporting the classical notions of equality of net advantages. What this argument requires, however, is proof that the value of the perquisites was sufficiently large to cover very wide differences in wage rates (note the growing size of the gap between the high and low wage bands on Fig 45) and that it was the poorly paid workers who were receiving the perquisites. At an empirical level little or no evidence was found on perquisites but such clues that exist indicate that food and ale payments were of only marginal influence relative to the absolute size of the daily wage rate. On the second point all the evidence suggests that in fact the better paid workers were the ones who received the higher non-monetary rewards thus widening the differentials even further. There is also evidence to suggest

1 See above Ch.5.

that as the economy grew from the mid 18th century the propensity for employers to pay in kind was markedly reduced as the real cost of such payments rose sharply.

Another problem concerns the length of the employment year for those workers; that is whether low wage rates might not be turned into higher annual earnings via less unemployment than in the more highly paid jobs. Data on unemployment is notoriously difficult to find but such evidence that we do have from the Poor Law returns, especially after 1815, indicates that the areas of greatest rural distress were also areas of very low wages - for instance the whole of the southern part of this Midland region. This problem would not appear to be as relevant to road labourers who tended to be employed on a very short term basis, but it could well be important in the building trades if the comparison is made with other workers. It was well known that at certain times of the year the weather would prevent full employment and therefore a risk premium may have been built into the wage rate. However the theme of this study has been to compare workers in the same occupation over the region and it is difficult to believe that such risk premiums would vary widely enough to account for the sharp wage differentials in the building industry within narrow regions.

Equally it could be argued that the focus of this study has been too narrow in the sense that it has concentrated on non-industrial employment. This unfortunate aspect is due to the paucity of wage data, particularly in the form of daily wage rates, which has been the main basis of comparison. All that can be added here is that the preponderance of piece work payments in mining and industry would probably have led to even more individual wage bargaining as the agreed rate would have to depend on the assessment of

worker potential. In addition much of the secondary evidence quoted from Hobsbawm, Musson, Hunt and Rowe shows little indication that industrial wages were tending towards the uniform pattern economists expected.

A further problem was that of the restrictions on the movement and supply of labour; were these of sufficient strength to have produced a highly imperfect labour market embodying wide differentials? There seems to be no doubt that in any collective bargaining sense the employers were stronger than their workforce. However, there is some reason to believe that the classical economists may have exaggerated the restrictive influence of the settlement laws in restraining labour mobility. Although the existence of closed parishes cannot be doubted in this period there is evidence to show that labour was brought in from surrounding parishes to work for local employers, whose main motives in closing their villages was to prevent rising poor rates rather than monopolise local labour markets. There is no doubt however, that before the railways access to information about alternative employment opportunities was limited, but as Dr Hunt has recently pointed out, in the post-railway era the extensive mobility of labour did little to correct the main trends in wage differentials.¹ But the fact remains that the immobility of labour in many rural areas of the midlands whether voluntary or involuntary was bound to influence wage levels.

Each one of these problematic areas could have chipped away at the extent of the wage differentials, but even where the compensation went in the right direction, the emphasis placed in the rest of this chapter on the evolution of the labour market since the 1830s has shown that powerful

1 Op.cit., p.238.

forces are still working to prevent the equality of wage payments that economists have predicted. In fact these differentials should be accepted as an integral part of any labour market, rather than short term oscillations which will erode gently into equality. Their sheer persistence should be enough to secure their acceptance as part and parcel of any theory which seeks to explain particular wage rates. This whole emphasis, however, on the individuality of wage bargains throws considerable doubt on the utility of regional, county or national wage series which are based solely on the mean. Just as important as the behaviour of the mean may be the dispersion of observations around that mean and therefore it is suggested that the whole range of wage rates should be considered. This should not prevent the inter-regional comparison of wages because the whole range may be higher or lower; for example within the east midlands it would be fair to say that wage levels were higher in Nottinghamshire than in Northamptonshire, whereas a direct comparison of mean weekly wages of 11/- and 8/- would be too simplistic.¹

As far as the determination of specific wage rates are concerned, it seems that historical experience and a sense of reality will prevent the acceptance of one all-embracing ^{theory} ~~theory~~. The most that one can hope for is to be able to provide clues as to the ranking of firms within their regions or areas through the conditioning of external influences within internal labour markets.² such explanations will not remove any elements of the real world but '...the results will reveal some of the underlying forces which shape wage relations'.³

1 Blaug, op.cit., p.182.

2 Robinson, op.cit., p.251.

3 Pierson, op.cit., p.5.

Conclusion

The main contribution of this piece of research has been to provide economic historians with over one hundred new series of wage rates. Although the coverage of occupations is incomplete they do represent the jobs of at least a quarter of the total number of workers enumerated in the 1841 census.¹ And despite their somewhat haphazard geographical dispersion they do appear to give us a reasonable picture of the labour market in this region. However the themes of the last two chapters has been sufficient to warn us of the dangers of the kind of generalisations that have been used previously to assess living standards.

As this was the starting point of this research it seems that some comments should be made in this conclusion on the progress, if any, that has been made in this direction. In many ways it has served to underline the importance given by many contributors in the debate on living standards to the need to establish research firmly at the local level. This thesis has further refined 'local level' to consist mainly of a unit of employment rather than a local area. Variations in wage rates within relatively close areas have been examined in sufficient depth to throw doubt on the precision of representative wage rates. What is more, any assessment of real wages must involve not only access to local prices (and these could vary as widely as the wage rates do)², but also

1 See above, Table 1, p.61.

2 See 'A Fresh Look at Wheat Prices and Markets in the Eighteenth Century', *Ec.H.R.*, XX, No.2 (August 1967), pp.257-266, for a review of the debate on the autonomy of regional grain markets.

evidence on earnings, because the rates used in this research can be regarded only as a notional supply price for labour, and they can in no sense be used as the basis for a yearly assessment of disposable income. Very clearly the impact of industrialisation on family earnings, through various domestic by-employments,¹ was still crucial in this period, and therefore the best unit of assessment is probably the family, rather than the head of the household. Because of these considerations the great temptation to relate the Midland wage data to a price series in order to produce a crude index of real wages was resisted.

This will be regarded by many as a weakness; but if one of the main themes of this thesis has been the extent of local differences in wages it hardly seems consistent to submerge these into an area assessment of living standards, without much more extensive research. This should involve an attempt to look at the regional penetration of price changes, the extent of local family employment (possibly through the labour sheets of larger estates) the incidence of unemployment (from poor law accounts?) and the size of households (from census enumerators books?). But the general picture of the labour market offered here would suggest that this can best be studied at a very micro level - either a village or a ward- however, the focus of this research has been on the Midland region as a whole and therefore this further work must be left for another time. No doubt some of the series will be used for purposes other than that intended by this student, but the consequences

1 Such as the shoe industry in Northamptonshire, the knitwear industry in Leicestershire, the lace and hosiery in Nottinghamshire, ribbon weaving in North Warwickshire and the textile industry in North Staffordshire.

and the value of this work, must rest with these other historians. What has been provided here is an assessment of the wage series, warts and all; and at present the warts appear to be sufficient to weigh against a simple comparison with known price indices.

For the present, it remains important to bear in mind that long held assumptions about economic behaviour - some would call these theories - are only useful if they aid the historians ability to understand the workings of the economy in an earlier period. If these assumptions dominate the reality they can only distort this picture. The idea that wage variations will be eroded by the workings of the free market has long held sway because of the influence of classical and neo-classical economic thinking; if this thesis has helped to loosen this rigidity then its purpose will have been amply fulfilled.

APPENDIX I

Building Craftsmen (Pence per day)

	Nott- ing- ham	Strat- ford	Leic- ester	Raven- stone	Musk- ham	Strel- ley	Wel- beck	Lille- shall	Lich- field	New- castle	Milton	Alton	Ing- estre	n.	c.v.	Mean	(1790=100)	Index
1750	18	16			18	18	18							5	5.0%	17.6	70.4	
1	18	16			18	18	18							5	5.0%	17.6	70.4	
2	18	16			18	18	18							5	5.0%	17.6	70.4	
3	18	16			18	18	18							5	5.0%	17.6	70.4	
4	18	16			18	18	18							5	5.0%	17.6	70.4	
5	18	16			18	18	18							5	5.0%	17.6	70.4	
6	18	16			18	18	18							5	5.0%	17.6	70.4	
7	20	16			18	18	18							5	5.0%	17.6	70.4	
8	20	18			18	18	18							5	4.3%	18.4	73.6	
9	20	18			18	18	18							5	4.3%	18.4	73.6	
1760	20	18			18	18	18							5	4.3%	18.4	73.6	
1	20	18			18	18	18							5	4.3%	18.4	73.6	
2	20	18			18	18	18							5	4.3%	18.4	73.6	
3	20	18		18	18	18	18							6	4.5%	18.3	73.3	
4	20	18			18	18	18							5	4.3%	18.4	73.6	
5	20	18			18	18	18							5	4.3%	18.4	73.6	
6	20	18		18	18	18	18							7	5.2%	18.6	74.4	
7	20	18			18	20	18		20					7	5.6%	19.1	76.6	
8	22	18			18	20	18		20					7	7.8%	19.4	77.7	
9	22	18			18	20	18		20					8	10.7%	20.0	80.0	

Building Craftsmen (Pence per day)

Nott-		Strat-	Leic-	Raven-	Musk-	Strel-	Wel-	Lille-	Lich-	New-	Milton	Alton	Ing-	n.	c.v.	Mean	Index
ing-	ham	ford	ester	stone	ham	ley	beck	shall	field	castle			estre			(1790=100)	
1770	22	20		20	18	20	18	20	20					8	6.5%	19.8	79.0
1	22	20			18	20	18	20	20					7	7.0%	19.7	78.8
2	22	20			18	20	18	20	20					7	7.0%	19.7	78.8
3	22	20				20	18	20	22					7	9.4%	21.0	83.4
4	22	20				20	18	20	22					6	7.4%	20.3	87.3
5	22	20				22	18		22	24				6	9.7%	21.3	85.3
6	24	20				22	20		22	24				7	7.4%	22.0	88.0
7	24	20				22	20		22	24				6	8.1%	22.0	88.0
8	24	20	24			22	20		24	24				7	8.4%	22.6	90.4
9	24	21	24			24	20		24	24				8	7.2%	23.0	91.5
1780	24	21	24	22		24	20		24	24	24			8	5.1%	23.4	93.5
1	24	21	24			24			24	24	24			7	4.8%	23.6	94.3
2	24	21	24			24			24	24	24			7	4.8%	23.6	94.3
3	24	22	24			24			24	24	24			7	3.2%	23.7	94.8
4	24	22	24			24			24	24	24			7	3.2%	23.7	94.8
5	24	22	24			24			24	24	24			7	3.2%	23.7	94.8
6	24	22	24			24			24	24	24			7	3.2%	23.7	94.8
7	24	22	24			24			24	24	24			7	3.2%	23.7	94.8
8	24	22	24			24		22	24	24	24			8	4.0%	23.5	94.0
9	24	22	24			24		22	24	24	24			8	4.0%	23.5	94.0

Building Craftsmen (Pence per day)

	Nott- ing- ham	Strat- ford	Leic- ester	Raven- stone	Musk- ham	Strel- ley	Wel- beck	Lille- shall	Lich- field	New- castle	Milton	Alton	Ing- estre	n.	c.v.	Mead (1790=100)	Index
1790	26	22	26			24		24	26	26	24			8	6.0%	25.0	100.0
1	26	22	26	26	27	27		24	26	28	24			10	7.0%	25.6	102.4
2	26	22	28		27	28		24	28	30	24			9	9.7%	26.3	105.3
3	26	22	30			29		24	28	30	24			8	11.5%	26.6	106.5
4	26	24	20	30		30		24	28	30	24			9	10.4%	27.3	109.3
5	26	24	30			32	24	24	30	30	24			9	12.2%	27.1	108.4
6	28	24	32			36	24	24	32	30	24			9	16.0%	28.2	112.8
7	30	28	32				24	26	32	30	24			8	11.7%	28.3	113.0
8	36	28	32				24		34	36	24			7	17.3%	30.6	122.4
9	36	28	34				24		36	36	28			7	15.5%	31.7	126.8
1800	36	28	36				30		36	36	29			7	11.5%	33.0	132.0
01	36	30	36				30		36	36	29			7	10.0%	33.3	133.2
02	42	32	36						36	39	30			7	12.5%	36.7	146.8
03	42	34	39	36					36	39	30			8	11.0%	37.3	149.0
04	42	36	39					30	36	42	30	36		9	12.8%	37.0	148.0
05	46	36	44					30	36	42	30	36		9	15.3%	38.0	152.0
06	46	36	44					30	36	42	30	42		8	16.2%	38.3	153.0
07	48	38	44					32	36	44	30			7	17.8%	39.0	155.4
08	48	40	44					32	40	44	33		38	8	13.8%	40.0	159.5
09	48	40	44					32	42	44	36		38	9	13.0%	41.3	165.3

Building Craftsmen (Pence per day)

	Nott- ing- ham	Strat- ford	Leic- ester	Raven- stone	Musk- ham	Strel- ley	Wel- beck	Lille- shall	Lich- field	New- castle	Milton	Alton	Ing- estre	n.	c.v.	Mean	Index (1790=100)
1810	52	40	44	42				36	43	44	36		39	9	11.8%	41.8	167.0
11	54	42	46						44	44	39		41	7	11.0%	44.3	177.2
12	54	42	46	48					44	44	39	46	41	9	9.8%	45.0	179.5
13	54	42	48						48		42	47	42	7	9.7%	46.2	184.8
14	54	42	48						46		42	47	44	7	9.0%	46.1	184.4
15	48	42	48						46	40	42		44	7	7.0%	44.3	177.2
16	48	42	48						42	40		38	42	7	8.9%	43.0	171.4
17	48	41	48						42	40		38	42	7	9.0%	42.7	170.8
18	42	40	48						42			38	42	6	8.0%	42.0	168.0
19	45	40	48					37	42		42		44	7	8.3%	42.6	170.4
1820	45	40	48					36	42		42		44	7	9.0%	42.5	170.0
21	42	40	48					32	42				42	6	13.1%	41.5	166.0
22	48	36	48					32			36			5	18.7%	40.0	160.0
23	48	36	48					32		36	36		44	7	16.3%	40.0	160.0
24	48	40	48						42	38			42	5	10.7%	43.2	172.8
25	52	42	48							40	39		44	6	12.1%	41.2	164.7
26	48	42	48	46									42	5	6.7%	45.2	180.8
27	48	42	48					39					42	5	9.2%	43.8	175.2
28	48	42	48										42	4	7.7%	45.0	180.0
29	48	42	48								39			4	10.2%	44.3	177.0

Building Craftsmen (Pence per day)

	Nott- ing- ham	Strat- ford	Leic- ester	Raven- stone	Musk- ham	Strel- ley	Wel- beck	Lille- shall	Lich- field	New- castle	Milton	Alton	Ing- estre	n.	c.v.	Mean	(1790=100)	Index
1830	48	42	48								39	42		5	9.2%	43.8	175.2	
31	48	42	48								39	42		5	9.2%	43.8	175.2	
32	48	42	48								39	42		5	9.2%	43.8	175.2	
33	48	42	48								39	42		5	9.2%	43.8	175.2	
34	48	42	48							42	36	42		6	10.5%	43.0	172.0	

Building Labourers (Pence per day)

	Nott- ing- ham	Strat- ford	Leic- ester	Raven- stone	Musk- ham	Strel- ley	Wel- beck	Lille- shall	Lich- field	New- castle	Milton Alton	Ing- estre	n.	c.v.	Mean	(1790=100)	Index
1750	12	12			10	12	11						5	8.0%	11.4	65.6	
1	12	12			10	12	11						5	8.0%	11.4	65.6	
2	12	12			10	12	11						5	8.0%	11.4	65.6	
3	12	12			10	12	11						5	8.0%	11.4	65.6	
4	12	12			10	12	11						5	8.0%	11.4	65.6	
5	12	12			10	12	11						5	8.0%	11.4	65.6	
6	12	12			10	12	11						5	8.0%	11.4	65.6	
7	14	12			10	12	11						5	12.6%	11.8	68.0	
8	14	12			10	12	11						5	12.6%	11.8	68.0	
9	14	12			10	12	11						5	12.0%	11.8	68.0	
1760	14	12			12	12	11						5	9.0%	12.2	70.2	
1	14	12			12	12	11						5	9.0%	12.2	70.2	
2	14	12		12	12	12	12						5	7.0%	12.4	71.4	
3	14	12			12	12	12						6	6.6%	12.3	71.0	
4	14	12			12	12	12						5	7.0%	12.4	71.4	
5	14	12			12	12	12						5	7.0%	12.4	71.4	
6	14	12			12	12	12		16				6	13.0%	13.0	75.0	
7	14	12			12	12	12	15	16				7	12.8%	13.3	76.5	
8	16	12			12	12	12	15	16				7	14.6%	13.6	78.3	
9	16	12			12	12	12	15	16				8	14.7%	13.9	80.0	

Building Labourers (Pence per day)

	Nott- ing- ham	Strat- ford	Leic- ester	Raven- stone	Musk- ham	Strel- ley	Wel- beck	Lille- shall	Lich- field	New- castle	Milton Alton	Ing- estre	n.	c.v.	Mean (1790 = 100)	Index
1770	16	14		12	12	12	12	15	16				8	13.5%	13.6	78.4
1	16	14			12	12	12	15	16				7	13.4%	13.9	80.0
2	16	14			12	12	12	15	16				7	13.4%	13.9	80.0
3	16	14				12	12	15	18				8	15.7%	14.4	83.0
4	16	14				12	12	16	18				6	16.5%	14.7	84.6
5	16	14			14	12	14	16	18				8	13.9%	15.3	87.8
6	16	14		12	14	12	14	16	18				9	15.2%	15.0	85.6
7	16	14				12	14	16	18				7	14.5%	15.4	88.6
8	16	14	16			14	14		18				7	11.5%	15.7	90.4
9	16	14	16			15	14		18	18			8	10.7%	16.1	92.8
1780	16	14	16	12		16			18	18	12		8	15.5%	15.3	87.8
1	16	14	16			16			18	18	12		7	13.6%	15.7	90.4
2	16	14	16						18	18	12		6	15.0%	15.7	90.4
3	16	14	16						18	18	12		6	15.0%	15.7	90.4
4	17	14	16			18			18	18	12		7	14.5%	16.1	93.0
5	17	14	16			18			18	18	12		7	14.5%	16.1	93.0
6	17	14	16			18			18	18	12		7	14.5%	16.1	93.0
7	17	14	16			18			18	18	12		7	14.5%	16.1	93.0
8	17	14	16			18			18	18	12		8	13.5%	16.3	93.5
9	17	14	16			18		17	18	18	12		8	13.5%	16.3	93.5

Building Labourers (Pence per day)

	Nott- ing- ham	Strat- ford	Leic- ester	Raven- stone	Musk- ham	Strel- ley	Wel- beck	Lille- shall	Lich- field	New- castle	Milton Alton	Ing- estre	n.	c.v.	Mean (1790=100)	Index
1790	18	14	18			18		17	20	20	14		8	13.4%	17.4	100.0
1	18	15	18	16	18	18		17	20	20	14		10	11.2%	17.4	100.0
2	19	15	20		18	18		17	20	20	14		9	12.3%	17.9	103.0
3	19	16	22			20		17	20	20	16		8	11.6%	18.8	108.0
4	19	16	22	18		21		18	20	20	16		9	11.1%	19.0	109.0
5	19	16	22			22	16	18	21	20	18		9	12.1%	19.1	110.0
6	20	16	24			24	16	18	22	20	18		9	15.7%	19.8	114.0
7	20	20	24				16	19	22	24	20		8	11.4%	20.1	116.0
8	22	20	24				16		23	24	20		7	13.5%	21.3	122.5
9	24	20	24		24		18		24	24	20		8	11.2%	22.3	128.0
1800	26	20	24		24		18		24	24	20		8	12.3%	22.5	129.5
01	28	20	24						24	24	20		6	13.0%	23.3	134.3
02	30	20	24						24	24	22		6	14.0%	24.0	138.0
03	30	22	27						24	26	22		6	12.4%	25.2	145.0
04	30	22	27		32			20	25	28	22		8	16.3%	25.8	148.0
05	34	22	30		32			20	28	28	22		8	19.0%	27.0	155.4
06	34	24	30					20	28	28	24		7	17.1%	26.9	154.6
07	36	24	30					20	28	28	24		7	19.0%	27.1	156.2
08	34	24	30					22	28		24	28	28	17.2%	27.4	158.0
09	36	24	30		36			22	30		24		28	18.5%	28.8	165.5

Building Labourers (Pence per day)

	Nott- ing- ham	Strat- ford	Leic- ester	Raven- stone	Musk- ham	Strel- ley	Wel- beck	Lille- shall	Lich- field	New- castle	Milton	Alton	Ing- estre	n.	c.v.	Mean(1790=100)	Index
1810	36	26	30		36			24	30				32	6	14.4%	30.0	170.8
11	36	28	32						32				32	5	8.8%	32.0	184.0
12	36	30	32						34				32	6	6.7%	32.5	187.0
13	36	30	34						36		26		32	6	12.0%	32.3	186.0
14	36	30	34						36		26		32	6	12.0%	32.3	186.0
15	36	27	34						34		26		32	6	12.3%	31.6	182.0
16	30	24	34						32	30			28	6	11.6%	29.8	171.0
17	28	24	34						32	28			28	6	12.1%	29.0	167.0
18	28	26	34						30				30	5	10.0%	29.6	170.4
19	28	27	34					21	30		22		30	7	16.8%	27.5	158.3
1820	28	27	34					20	30		22		30	7	17.8%	27.3	157.0
1	28	26	34					16	30				30	6	22.5%	27.3	157.0
2	30	22	32					16						4	30.0%	25.0	144.0
3	30	22	32					16			22		24	7	22.0%	24.3	140.0
4	34	22	30										24	4	20.0%	27.5	158.3
5	34	24	30							28	20		28	6	17.7%	27.3	157.0
6	34	24	30								20		27	5	20.0%	27.0	155.4
7	32	24	30							28	20		26	6	16.0%	26.7	153.5
8	32	24	30								20		26	5	18.0%	26.4	152.0
9	32	24	30								22			4	17.6%	27.0	155.4

Building Labourers (Pence per day)

	Nott- ing- ham	Strat- ford	Leic- ester	Raven- stone	Musk- ham	Strel- ley	Wel- beck	Lille- shall	Lich- field	New- castle	Milton	Alton	Ing- estre	n.	c.v.	Mean(1790=100)	Index
1830	32	24	30								22	24		5	16.5%	26.4	152.0
1	32	24	30								22	24		5	16.4%	24.4	152.0
2	32	24	30								22	24		5	16.4%	26.4	152.0
3	32	24	30								22	24		5	16.4%	26.4	152.0
4	32	24	30							26	22	24		6	14.7%	26.3	151.5

APPENDIX 2

Estate Workers (Pence per day)

	Staun- ton	Stan- ford	Lough- borough	Croxton	Strel- ley	Rufford	Serlby	Thorney	North Wheatley	Wink- burn	Mel- beck	Hod- sock
1750		10				9	11				11	
1		10				9	11				11	
2		10				9	11				11	
3		10				9	11				11	
4		10				9	11				11	
5		10				9	11				11	
6		10				9	11				11	
7		10				9	11				11	
8		10				9	11				11	
9		10				9.8	11		10.5		11	
1760						9.8	11		10.5		11	
1						9.8	11		10.5		11	
2						9.8	11		10.5		11	
3						9.8	11		10.5		11	
4			13.5			9.8	11		10.5		11	
5			13.5			9.8	11		10.5		11	
6			13.5			10.25	11		10.5		11	
7			13.5			10.25	12.5		10.5		11	
8	12					10.25	12.5		10.5		12.5	
9	12				13	10.50	12.5	13.50	10.5		12.5	

Estate Workers (Pence per day)

	Staun- ton	Stan- ford	Lough- borough	Croxton	Strel- ley	Rufford	Serlby	Thorney	North Wheatley	Wink- burn	Wel- beck	Hod- sock
1830												
1												
2												
3												
1834												

23

Estate Workers (Pence per day)

	Clumber	Gonal- ston	Work- sop	Milton	Grafton	Canon's Ashby	Bul- wick	Brig- stock	Packing- ton	Ragley	Stone- leigh	Etting- ton
1750				11.5								
1				11.5								
2				11.5								
3				11.5								
4				11.5								
5				11.5								
6				11.5								
7					10							
8					10							
9					10							
1760					10				10			
1					10				10			
2					10				10			
3					10			10.6	10			
4					10			10.6	10			
5					10			10.6	10		12.5	
6					10				10			
7					10				10			
8					10				10			
9					10				12			

Estate Workers (Pence per day)

	Clumber	Gonal- ston	Work- sop	Milton	Grafton	Canon's Ashby	Bul- wick	Brig- stock	Packing- ton	Ragley	Stone- leigh	Etting- ton
1770					10				12			
1					10				12			
2					10.75				12			
3					10.75				12			
4					10.75				12			
5					10.75				12	12		
6					10.75		12.5		12	12		
7					10.75		12.5		12	12		
8					11		12.5		14	12		
9					11		12.5		14	14		
1780					11		14.3		14.5	14		
1					13				14.5	14		
2				13	13				14.5	14		
3				13	13				14.5	14		
4				13	13				14.5	14		
5				13	13				14.5	14		
6				13	13				14.5	14		
7				13	13				14.5	14		
8				13	13	11.80			14.5	14		
9				13	13	11.80			14.5	14		
				13	13	12.20			14.5	14		

Estate Workers (Pence per day)

	Clumber	Gonal- ston	Work- sop	Milton	Grafton	Canon's Ashby	Bul- wick	Brig- stock	Packing- ton	Ragley	Stone- leigh	Etting- ton
1790				13	13	12.20			14.5	15		
1				13	13	12.60			14.5	15		
2				13	13	15.70			14.5	16		
3				14.6	15	15			14.5	16		
4					15	14.75			15	16		
5				15	15.2	15.66			15	16		
6					17.5				15			
7				17	17.5				15			
8				17	17.5		16.25		15			
9				17	17.5				15			
1800					19.6				18			
01				19.3	21.0				18			
02				20.50	19.33				18			
03				20.50	19.44				18			
04				20.75	19.44				18			
05				20.50	20.5				18			20
06				20.50	20.5				18			20
07				20.50	21.33				18			20
08				20.50	20.5				18			20
09				20.50					21			20

Estate Workers (Pence per day)

	Clumber	Gonal- ston	Work- sop	Milton	Grafton	Canon's Ashby	Bul- wick	Brig- stock	Packing- ton	Ragley	Stone- leigh	Etting- ton
1810		30		21.35					25.5			27.75
11		30		23.00					25.5			
12		30							29			
13		30		27.00					29			
14		30		27.00	26				29			
15		30		27.00							24.33	
16	24.5	26			22						24.33	
17	24.5	27			22.66						22	
18		26									22	
19		25		27.00	20.66							
1820		25			20.66							
1		24			20.5							
2	20	20			17.5						19	
3	20	19	26.50	23.00	16.75						18	
4		20	25.75		17.8							
5		24	27.50	25	17.8						22	
6		24	28.50	25	19.3						22	
7		21	28.50	25	19.8						22	
8		22	26.25	25	19.8							
9		22	26.25	25	19.8							

Estate Workers (Pence per day)

	Clumber	Gonal- ston	Work- sop	Milton	Grafton	Canon's Ashby	Bul- wick	Brig- stock	Packing- ton	Ragley	Stone- leigh	Etting- ton
1830		22	25.50									
1		22	25.00		20.25						22	
2		22			20						22	
3		22			18.25							
4		22		26	18.25							

Estate Workers (Pence per day)

	Coles- hill	Teddes- ley	Chilling- ton	Shif- nall	Aqua- late	Trent- ham	Alton	Ingestre	Mill- wich	Blith- field
1790			14							
1										
2										
3										
4										
5	15.5									
6	16									
7	16.25									
8	16.33								20.75	
9	16.33	16.5							21	
1800	18.75	16.5							21	
01	20.25	16.5							21	
02		16.5							21	
03		16.5	18					21.25		
04		16.5	18					24		
05		16.5	18					25.25		
06		16.5	18					28.5		
07		16.5	18					27		
08		16.5	21				24			
09		16.5	21.33	21			24			

Estate Workers (Pence per day)

	Coles- hill	Teddes- ley	Chilling- ton	Shif- nall	Aqua- late	Trent- ham	Alton	Ingestre	Mill- wich	Blith- field
1810		16.5	24.66	22.5	24					
11		16.5	24.75	22.5	24		32			
12		19	26	22.5	24		32			
13		22	27.66	22.5	24		32.5			
14		22	27.66	22.5	24					
15		22	27.66	22.5	24	27	29.5			
16		22	22	22.5	24	26	28		26	
17		22	20	22.5	24	26	26.5		20.33	
18		22	20.24	22.5	24	26	26	22		
19		22	20.15	22.5	24	24		22		
1820		23.5	20	22.5	24	24	23	21.75		
1		21.5	19.5	22.5	24	24	21	18		
2		20	19	22.5	21	24	20	18		
3		19.5	19	18.5	22.5	26	21	20		
4				18.5	22	26	21	23.5		
5				20	22	26	22	23.25		
6				21.5	22	26	24	21		
7				22.5	22	26	24	21		
8				22.5	22	26	24	21		
9				22.5	22		24	21		

Estate Workers (Pence per day)

	Coles- hill	Teddes- ley	Chilling- ton	Shif- nall	Aqua- late	Trent- ham	Alton	Ingestre	Mill- wich	Blith- field
1830		21		22.5	22		24	21		
1		23		22.5	20		24	21		
2		23		22.5	20		24			
3		23		22.5	20		23			
4		21.5		22.5	20	24	23	18		

	n.	c.v.	Mean	Index
1750	6	8.8	10.4	76.5
1	5	9.5	10.5	77.0
2	5	9.5	10.5	77.0
3	5	9.5	10.5	77.0
4	5	9.5	10.5	77.0
5	5	9.5	10.5	77.0
6	5	9.5	10.5	77.0
7	5	8.2	10.2	75.0
8	5	8.2	10.2	75.0
9	6	5.2	10.4	76.0
1760	6	5.2	10.4	76.0
1	6	5.2	10.4	76.0
2	6	5.2	10.4	76.0
3	7	4.9	10.4	76.5
4	8	11.0	10.8	79.0
5	9	11.0	11.0	80.5
6	7	11.2	11.0	80.0
7	8	11.5	11.1	81.5
8	8	9.9	11.1	81.5
9	11	11.0	12.0	87.8
1770	8	10.4	11.8	86.5
1	7	8.7	11.5	84.5
2	8	8.6	11.8	87.0
3	7	9.7	11.8	86.5
4	7	10.3	11.8	86.8
5	7	11.4	12.2	89.5
6	8	9.8	12.3	90.0
7	7	9.2	12.2	89.5
8	7	10.9	12.6	92.3
9	7	11.2	12.9	94.3

	n.	c.v.	Mean	Index
1780	6	12.3	13.1	96.0
1	4	4.5	13.9	102.0
2	5	6.4	13.9	102.0
3	5	6.4	13.9	102.0
4	5	6.4	13.9	102.0
5	5	7.3	13.3	98.0
6	5	5.0	13.7	100.5
7	6	7.5	13.4	98.0
8	6	7.5	13.4	98.0
9	6	6.3	13.5	99.0
1790	6	7.7	13.6	100.0
1	5	7.7	13.6	100.0
2	6	8.9	14.5	106.5
3	6	13.2	15.9	116.5
4	5	13.7	16.2	118.5
5	8	10.1	16.2	118.8
6	5	12.3	17.6	128.5
7	5	5.9	16.9	123.0
8	7	9.8	17.3	126.8
9	8	16.0	18.2	133.3
1800	8	11.9	19.6	143.5
01	9	12.1	20.6	151.5
02	6	13.1	19.9	146.0
03	6	13.6	19.4	142.5
04	6	9.6	19.0	139.5
05	7	12.5	19.6	144.0
06	8	15.9	20.5	150.0
07	8	18.7	20.9	153.0
08	9	15.2	21.3	156.0
09	9	13.1	21.6	158.8

	n.	c.v.	Mean	Index
<hr/>				
1810	10	15.6	24.4	179.0
11	8	16.5	24.3	178.0
12	9	15.4	26.1	192.0
13	9	12.7	26.9	197.5
14	11	12.5	27.3	200.5
15	8	11.4	25.8	189.0
16	11	9.8	24.5	179.0
17	12	9.9	24.2	177.5
18	10	10.6	23.6	173.5
19	11	10.2	23.8	175.0
1820	8	7.7	22.7	166.5
1	10	7.3	22.1	162.0
2	11	10.8	20.5	150.5
3	12	15.8	20.5	150.5
4	9	13.5	21.3	156.5
5	10	12.8	22.9	168.0
6	10	11.2	23.4	171.5
7	10	11.5	23.2	169.5
8	10	8.8	23.3	170.5
9	9	8.9	23.0	168.5
1830	8	6.8	22.5	165.0
1	8	6.8	22.5	165.0
2	7	6.7	22.0	165.0
3	9	7.5	21.8	160.0
4	10	11.3	21.8	160.0

Market

	Kirby Muxloe	Bel- grave	Lutter- worth	Market Har- borough	Kim- cote	Burr- ough	Stoke Gold- ing	Sha- well	Nor- well	East Leake	Elke- sley	Crop- well
1750	8	9		12								
1	8	9										
2	8	9										
3	8	9										
4	8	9										
5	8	9										
6	8	9										
7	8	9										
8	8	9				8						
9	8	9				8						
1760	8	10	9			8						
1	8	10	9			8						
2	8	10	9			8						
3	8	10	9		8	8						
4	8	10	9		12	8				11		
5	8	10	9		12	8				11		
6	8	12	9		12	8				11		
7	8	12	12		12	8				11		10
8	8	12	12			8		12		11		10
9	8	12	12			10		12		11		10

Road Labourers (Pence per day)

	Kirby Muxloe	Bel- grave	Lutter- worth	Market Harbor- ough	Kim- cote	Burr- ough	Stoke Gold- ing	Sha- well	Nor- well	East Leake	Elke- sley	Crop- well
1770	8	12	12			12		12		13	11	10
1	8	12	12			12		12		13	11	10
2	13	12	12			12		12		13	11	10
3	12	12	12			12		12		13	11	10
4	14	12	12			12		14	14	13	11	10
5		12	14			12		14	14	13	12	10
6		12	14			12		14	14	13	12	10
7	14	12	14			12		14	14	12	12	10
8	14	12	14			12		14	14	12	12	12
9	14	12	14			12		14	14	12	12	12
1780	13	14	14		12	12	16	12	14	12	12	12
1	12	14	14	15		12	16	12	14	12	12	
2	14	14	14	15		12	16	14	14	12	12	
3	14	13	14	15		12	16	12	14	12	12	
4	16	12	16	15		12	16	12	14	12	12	
5	14	13	16	15		12	16	12	14	12	12	
6	14	12	14	15		12	16	12	14	12	12	
7	15	13	14	15		12	16	12	14	12	12	
8	14	12	15	15		12	16	14	14	12	12	
9	15	13	15	15		12	16	16	14	12	12	

Road Labourers (Pence per day)

	Kirby Muxloe	Bel- grave	Lutter- worth	Market Harbor- ough	Kim- cote	Burr- ough	Stoke Gold- ing	Sha- well	Nor- well	East Leake	Elke- sley	Crop- well
1790	16	13	15	15		12	16	12	14	12		
1	16	13	16	15		12	16	12	14	12		
2	16	13	18	15		12	16	12	14	12		
3	18	13	15	16		15	16	14	14	15		
4	18	14	16	16		16	16	16	14	14		
5	20	15	18	16		16	18	14	15	14		
6	21	17	18	17		18	18	18	16	13		
7	24	18	16	18		18	18	18	18	15		
8		20	14	18	16	18	18	18	18			
9	30	21	21	18	16	18	18	18	19			
1800		22	22	19	16	20	24	18	20			
01	30	24	24	20	16	24	20	18	24			
02	30	21	24	20	18	22	24	18	24			
03	30	24	27	20	18	24	28	18	24			
04	33	26	27	20	18		24	18	24			
05	33	26	27	24	18		24	18	24			16
06	36	26	27	24	18		24	18	24			17
07	36	26	27	24	20	22	24	18	24			18
08	36	26	27	26	20	22	27	19	24			18
09	36	28	27		20	21	27	19	24			18

Road Labourers (Pence per day)

	Kirby Muxloe	Bel- grave	Lutter- worth	Market Harbor- ough	Kim- cote	Burr- ough	Stoke Gold- ing	Sha- well	Nor- well	East Leake	Elke- sley	Crop- well
1810	36	24	27		22	21	27	24	24		24	18
11	33	27	27		22	21	28	24	27		24	20
12	33	30	27		24	21	27	27	27			24
13	33	30	29	27	26	24	22	27	27			24
14	33	30	29	22	26	24	21	27	27			24
15	36	26	27	22	24	24	21	24	24			24
16	25	24	24	20	24	20	20	20	18			18
17	25	21	24	20	24	21	19	20				17
18	20	18	24	22	20	21	19	20				16
19	20	18	24	22	19	21	19	20				16
1820	20	18	24	20	18	18	18	20				16
1	18	21	23	24	18	18	18	16				16
2	19	22	24	22	18	15	15	16				16
3	18	22	22	22	18	15	15	14				
4	22	20	22	21	16		15	16				
5	20	20	20	21	16	21	15	16				
6	20	18	20	21	17	21	15	16				22
7	21	18	20	22	18		14	16				20
8	20	18	24	22	20		12	16				20
9	20	20	24	21	20		12	16				18

Road Labourers (Pence per day)

	Kirby Muxloe	Bel- grave	Lutter- worth	Market Harbor- ough	Kim- cote	Burr- ough	Stoke Gold- ing	Sha- well	Nor- well	East Leake	Elke- sley	Crop- well
1830	20	20	24	21	19			16				18
1	20	20	23	24	19			16				18
2	18	20	26	24	20			16				18
3	17	21	26	24	18			14				18
4	17	21	22	24	18			14				17

	Calver- ton	Barnby	Dav- entry	Old	Little Bill- ing	Cott- ingham	Brad- den	Abing- ton	Holcot	Badby	Shu- stoke	Meri- den	Nether Whit- acre
1750		8											
1		8											
2		8											
3		8											
4		8											
5		8											
6		8											
7		8											
8		8											
9		8											
1760		8											
1							12						
2							12						
3							12						
4							12						
5							12						
6							12						
7							12						
8							12						
9							12						

	Calver- ton	Barnby	Dav- entry	Old	Little Bill- ing	Cott- ingham	Brad- den	Abing- ton	Holcot	Badby	Shu- stoke	Meri- den	Nether Whit- acre
1770													
1							12	12				12	
2	14						12					12	
3	18		12				12					12	
4	12		12				12					12	
5	18		12		12		12					12	
6	18		12		12		12					12	
7	16		12		12		12					12	
8	14		12		12		12					12	
9	14		12		12		12					12	
1780													
1	14		12	10	12	12	12		12	12	12	12	14
2	14		12	10	12	12	12	14	12	12	12	12	14
3	14		12	10	12	12	12	14	12	12	12	12	14
4	14		12	10	12	12	12	14	12	12	12	14	14
5			12	10	12	12	12	14	12	12	12	14	14
6			12	12	12	12	12	14	12	12	12	14	14
7			12	12	12	12	12	14	12	12	14	14	14
8			12	12	12	12	12	14	12	12	14	14	14
9			13	12	12	12	12	14	12	12	15	14	14

	Calver- ton	Barnby	Dav- entry	Old	Little Bill- ing	Cott- ingham	Brad- den	Abing- ton	Holcot	Badby	Shu- stoke	Meri- den	Nether Whit- acre
1790			13	12	12	12	12	14	14	12	15	14	16
1			13	12	12	12	13		14	12	15	14	16
2			13	12	12	12	15		14	12	15	15	16
3			13	12	12	12	15		14	13	15	15	16
4			13	12	12	12	14	18	16	14	15	15	16
5			13	12	14	12	16		18	14	15	16	18
6			16	12	14	12	16		18	15	15	16	18
7				12	15	14	16		18	15	24	16	18
8				12	16	14	16		18	15	24	16	20
9				16	18	14	18		18	15	24	20	20
1800				16	18	16	18	20	18	16	24	22	21
01				18	18	16	18	22	19	16	24	22	22
02				18	18	16	18	24	18	16	24	22	22
03				18	18		18		18	16	24	22	24
04				18	18	18		20	20	16	24	22	24
05				18	18	18		21	20	16	24	22	24
06				18	18	18	19		22	16	24	22	24
07				18	18		19	20	22	16	24	20	24
08				18	18		19	22	22	16	24	24	24
09				18	21		19	24	24	14	24	24	30

	Calver- ton	Barnby	Dav- entry	Old	Little Bill- ing	Cott- ingham	Brad- den	Abing- ton	Holcot	Badby	Shu- stoke	Meri- den	Nether Whit- acre
1810				21	24		22	24	24	18	36	38	33
11				22	24		22	24	26	21	30	27	36
12				23	24		22	24	26	24	36	28	36
13				20	24		22	27	28	24	36	29	36
14				21	24		24	30		24	36	26	36
15				21	18		21	26	24	24	30	23	32
16			22	22	18		20	21	18	21	24	24	24
17			22	23	18		20	21	19	18	20	22	24
18			20	23	18		19	22	18	18	18	20	24
19			20	23	18		18	23	16	18	18	18	24
1820			20	21	18		18	22	16	18	18	18	24
1			20	20	18		18	20	18	18	18	18	24
2			20	16	16		17	19	19	18	18	17	22
3			20	19	14		16	17	17	16	18	15	20
4			20	19	16		16	17	18	16	18	15	20
5			20	19	18		20	17	20	20	18	15	22
6			20	18	20		19	20	18	20		14	22
7			20	18	18		17	18	18	20		14	22
8			20	18	18		16	18	18	18		14	22
9				17	20		15	20	18	18		14	22

	Calver- ton	Barnby	Dav- entry	Old	Little Bill- ing	Cott- ingham	Brad- den	Abing- ton	Holcot	Badby	Shu- stoke	Meri- den	Nether Whit- acre
1830				18			15	20	18	18		14	20
1				18			15	20	19	18		14	18
2				18			15	20	20	18		14	18
3				18			15	20	21	18		14	17
4				18			13	20	20	18		14	16

	Willey	Rowing- ton	Great Pack- ington	Crox- den	Shen- stone	Cheadle	Crick	Stanion	Hard- wick	Cottes- brooke	Kennil- worth
1770	12	12	12				12		8		
1	12	12	12				12		8		
2	12	12	12				12		10		
3	12	12	12				12	11	10		
4	12	12	12				12	12	10		
5	12	12	12				12	12	10		
6	12	12	12	12			12	12	10		
7	12	12	12	12			12	12	10		
8	12	12	12	12			12	12	10		
9	12	12	12	12			12	12	10		
1780	12	12	12	12	16	13	11	12	10		
1	12	12	12	12	16	13	11	12	10		
2	12	12	12	12	16	13.5	10	12	10		14
3	12	12	12	12	16	14	11	12	10	12	14
4	12	12	14	12	16		11	12	12	12	14
5	12	12	14	12	16	16	11	12	14		14
6	12	12	14	12	16	16	11	12		12	14
7	12	12	14	12	16	16	12	12		12	14
8	12	12	14	12	16	16	12	12	12	12	14
9	14	14	14	12	16	16	13	12	14	12	14

	Willey	Rowing- ton	Great Pack- ington	Crox- den	Shen- stone	Cheadle	Crick	Stanion	Hard- wick	Cottes- brooke	Kennil- worth
1790	14	14	14	12	16	16	12	12	14	12	14
1	14	14	16		16		12	12	14	12	14
2	15	15	16		16		12			13	14
3	15	16	16		18		12			14	14
4	16	16	16		18	18	13	18	16	18	14
5	16	16	16		18	18	12	18	16	18	14
6	16	18	16		20	18	12	18	16	24	14
7	18	18	18		22	18	13	18	16	21	18
8	18	18	18			18	15		16	18	18
9	18	18	19			18	16		16	18	18
1800	20	18	19			18	16		18	18	18
01	20	18	19			19	16		20	24	18
02	20	20	20			19	16		20	24	18
03	20	20	20			19	15		20	24	
04	24	24	20			19	16		22	24	
05	24	27	20				16		22	24	
06	24	27	20				18		24	24	24
07	24	27	20				16		24	30	24
08	24	27	20			24	18		24	30	24
09	24	27	24			24	18		24	30	24

	Willey	Rowing- ton	Great Pack- ington	Crox- den	Shen- stone	Cheadle	Crick	Stanion	Hard- wick	Cottes- brooke	Kennil- worth
1810	24	27	24			24	19		26	30	24
11	24	27	24			24	19		30	33	24
12	28	27	24			30	19		30	27	24
13	33	27	24			30	19		27	24	30
14	28	24	24			32			27	24	30
15	28	24	24			27			27	24	27
16	22	18	24			24			24	24	22
17		18	24			24			19	25	21
18		18	24			24			19	25	22
19		18	24			24			18	24	22
1820		18	22			24			17	24	22
1		20	21						17	24	22
2		20	20						17	24	18
3		20	17			18			18	24	18
4		20	16			20			20	20	21
5		20	20			24			20	20	21
6		20	22							20	21
7		18	20							18	19
8		18	20							18	19
9		18	20							18	19

	Willey	Rowing- ton	Great Pack- ington	Crox- den	Shen- stone	Cheadle	Crick	Stanion	Hard- wick	Cottes- brooke	Kennil- worth
1830		18	19							16	17
1		18	19							16	17
2		18	19							16	16
3		18	19							18	17
4		18	14							20	17

	Bishop's Tach- brook	Laxton	Denton	West Haddon	Moul- ton	Temple Grafton	Barton	Long- comp- ton	Farn- borough	Pill- erton Hersey	Wolf- ham- cote
1770											
1											
2											
3											
4											
5											
6											
7											
8											
9	13										
1780	13										
1	13										
2	13										
3	13										
4	13										
5	13	14	12								
6	13	14	12					12			
7	13	14	12		12						
8	14	14	12		14						
9	14	14	12		14						15

	Bishop's Tach- brook	Laxton	Denton	West Haddon	Moul- ton	Temple Grafton	Barton	Long- comp- ton	Farn- borough	Pill- erton Hersey	Wolf- ham- cote
1790	14	14	12	12	14	16		15			
1	15	14	12	12	14	16		15			
2	16	14	12	12	14	16		15			
3	16	15	12	12	15	16		15			
4	18	16	12	12	16	16		15			
5	18	16		12	17	16	16	15		17	
6	18	19		14	17	16	16	18		17	
7	18	16		14	17	16	16	18		17	
8	18	14	14	14	18	18	16	18	18	17	
9	18	16		15	18	18	16	18	19	17	
1800		24		15		18	18	18	22	17	
01		24		16		20	18	18	19	18	
02		24		16		20	18	18	18	18	
03		24		16		21	18	18	15	18	22
04		24		16		21	16	18	19	18	22
05		24		16		21	16	19	19	18	22
06		24	17	16		22	16	20	19	18	22
07	21	24	18	16	21	22	16	19	19	18	24
08	21	24	18	16	24	24	18	19	19	18	24
09	21	24		19	24	24	18	19	19	21	24

	Bishop's Tach- brook	Laxton	Denton	West Haddon	Moul- ton	Temple Grafton	Barton	Long- comp- ton	Farn- borough	Pill- erton Hersey	Wolf- ham- cote
1810		27		21	24	28	19	20	20	21	30
11		27		21	27	28	23	20	20	21	33
12		27	24	21	28	30	23	20	22	24	30
13		27	24	21	33	30	26	24	21	30	31
14	27	24	20	21	27		25	24	21	27	30
15	18	20		21	24		22	22	21	23	25
16	19	20		18	20		19	20	17	22	24
17		20	19	18	24	24	16	20	18	22	24
18		22	20	20	24	20	16	22	17	20	22
19		21	24	20	22	20	17	24	16	20	24
1820		21	21	20	21	18		24	16	20	24
1		19	20	20	21	16		19	16	20	24
2		18	16	18		15		17	16	20	21
3		18	19	18		15		16	16	20	20
4		20	19	18		15		17	17	18	21
5		22	19	18		18		18	18	18	22
6		20	18	18		18		18	18	18	21
7		18	18	16		18		17	18	18	21
8		19	18	16		18		18	19	18	21
9		20	19	16		18		18	18	18	21

	Bishop's Tach- brook	Laxton	Denton	West Haddon	Moul- ton	Temple Grafton	Barton	Long- comp- ton	Farn- borough	Pill- erton Hersey	Wolf- ham- cote
1830		28	18	16		16		18	19	18	21
1			18	16		16		18	17	18	21
2			18	16		16		18	18	18	21
3			18	16		16		18	17	18	21
4			18	16		16		18	16	16	19

	Hunn- ing- ham	War- wick	Great Barr	Bre- wood	Tetten- hall Regis	En- ville	Blym- hill	Cheddle- ton	Rush- ton	Harle- stone	Easton
1790					18				12	12	
1									12	12	
2									12	12	
3									12	12	
4					20				12	12	
5									12	12	
6									12	16	
7	19				24				12	18	
8	18				24				14	18	
9	18				22				15	18	
1800	18		24		24				16	18	
01	18		24		27					18	
02	18		24		27				12	18	
03	19		24		28				14	18	18
04	19		24		28				14	18	18
05	20		24		28	24			16	18	18
06	20	18	24	24	28	24			16	18	18
07	20	18			28	25			16	18	19
08	21	19			28	26			16	18	20
09		22			32	26			16	18	22

	Hunn- ing- ham	War- wick	Great Barr	Bre- wood	Tetten- hall Regis	En- ville	Blym- hill	Betley	Cheddle- ton	Rush- ton	Harle- stone	Easton
1810		22			32	26	30	24	24	18	24	24
11	20	24	36	24	33	26	30		24	22	30	24
12	24	24	36	30	30	24	30		30	24	30	24
13	24	24	36	30	30	24	30		30	27	30	24
14	22	24	30	30	22	27	30		30	20	24	24
15	26	26	24	27	24	27	24		30	22	20	21
16	20	23	24	24		20	18		21	20	18	19
17	20	20	24	24		18	20		18	19	18	18
18	20	20	24	21		19	19		24	19	18	
19	21	20	24	21		19	20		24	18	18	
1820	19	24	24	20		19	21		24	18		
1	19	24	24	20		19.5	19		24	18		20
2	18	24	24	19		19	20		24	18		18
3	18	24	24	20		17	18		24	17		16
4	18	24	24		24	15	19		24	18		17
5	17	25	24		24	17	22		24	20		17
6	19	26	18		24	17	22		24	18		18
7	18	28	24		24	18	20	20	24	18		
8	18	28	24	16	24	18	22	20	24	20		
9	17	28	24	16	24	18	19	20	24	21		

	Hunn- ing- ham	War- wick	Great Barr	Bre- wood	Tetten- hall Regis	En- ville	Blym- hill	Betley	Cheddle- ton	Rush- ton	Harle- stone	Easton
1830	17	29	24	16	24	18	16	20	24	20		
1	16	29	24			17	17	20	24	21		
2	16	29	24			17	16	20	24	20		
3	16	27	24			16	17	20	24	20		
4	16	27	18			16	17	20	24	18		

	Passen- ham	Wood- ford	Arthing- worth	Wicken	Bagin- ton	Misson	Kilving- ton	Monks Kirby	North Field	Yard- ley	Gay- ton	Exhall	Clifford Chambers
1790	12	12	12	12									
1	12	12	13	12									
2	12	12	13	12									
3	12	14	13	14									
4	12	14	13	14									
5	14	14	14	14									
6	14	15	16	14									
7	14	15	17	14									
8	14	15	17	14									
9	14	16	17	14									
1800	15	17	17	16									
01	16		17	16									
02	16		17	18									
03	16	18	18	18									
04	16	18	18	18									
05	18		18	18									
06	18		18	18									
07	18		20	20	24								
08	18		21	20	24								
09			21	20	30								

	Passen- ham	Wood- ford	Arthing- ton	Wicken	Bagin- ton	Misson	Kilving- ton	Monks Kirby	North Field	Yard- ley	Gay- ton	Exhall	Clifford Chambers
1810			24	20	30								
11			24	24	30								
12			27	24	30				30				
13			30	24	30			30	30				
14			27	20	30			30	30		30		
15			24	20	24			30	28		20		
16			24	18	20			24	23				
17			24	20	20			24	19				
18			24	20	20			23	20				
19			24	20	24		24	23	18	18			
1820			18	20	24		24	22	20	18			
1			19	18	20		24	21	20	20	22		16
2			16	16	18		16	19	18	20	22		16
3			18	16	18		14	19	16	21	21		14
4			18		18		14	21	17	22	24	20	18
5			19		20		16	20	18	24	24	21	20
6			20		20		18	20	20	24	24	20	20
7			18		18		16	21	21	19	22	20	18
8			18		18		15	19	21	18	24	20	18
9			19		18		15	18	21	18		20	18

	Passen- ham	Wood- ford	Arthing- ton	Wicken	Bagin- ton	Misson	Kilving- ton	Monks Kirby	North Field	Yard- ley	Gay- ton	Exhall	Clifford Chambers
1830					18		14	18	21	17		20	18
1					16		14	16	21	17		20	18
2					16		14	16	21	17			20
3					16		14	16	21	16			20
4					16		14	15	21	16			18

	Staunton	Shelford	n.	c.v.	Mean	Index
1750			5	18.9	9.00	66.7
1			4	20.5	9.25	68.5
2			5	17.4	9.20	68.1
3			6	19.6	9.70	71.9
4			7	17.5	9.70	71.9
5			6	19.6	9.70	71.9
6			5	17.4	9.20	68.1
7			5	18.9	9.00	66.7
8			6	18.3	8.80	65.2
9			6	18.2	8.80	65.2
1760			10	18.9	9.50	70.4
1			8	19.3	9.90	73.3
2			9	18.8	10.10	74.8
3			10	19.2	9.90	73.3
4			10	17.6	10.20	75.6
5			10	17.6	10.20)	75.6)
6			11	17.3	10.50)	77.0)
7			11	17.0	10.60	78.5
8			10	17.1	10.50	77.8
9			10	15.0	10.70	79.3
1770			17	12.3	11.40	84.4
1			16	13.2	11.40	84.4
2			17	11.0	11.80	87.4

	Staunton	Shelford	n.	c.v.	Mean	Index
1773			19	13.2	12.10	89.6
4			20	9.1	12.10	89.6
5			21	12.9	12.40	91.9
6			21	12.9	12.40	91.9
7			22	10.5	12.40	91.9
8			22	8.1	12.40	91.9
9			23	8.1	12.40	91.9
1780	13		33	11.1	12.60	93.3
1	13	12	34	11.1	12.60	93.3
2	13	12	35	11.0	12.70	94.1
3	13	12	38	11.0	12.70	94.1
4	14	12	37	12.5	12.80	94.8
5	14	12	41	10.9	12.80	94.8
6	14	12	43	10.1	12.90	95.5
7	14	12	45	10.0	13.00	96.3
8	14	12	43	10.0	13.00	96.3
9	15	12	46	10.5	13.30	98.5
1790	17	12	47	12.6	13.50	100.0
1	15	12	43	11.1	13.50	100.0
2	17	12	42	14.2	14.00	103.7
3	18	12	41	12.6	14.30	105.9
4	17	12	46	14.0	15.00	111.1
5		12	45	14.3	15.40	114.1

	Staunton	Shelford	n.	c.v.	Mean	Index
1796		12	44	15.4	16.20	120.0
7		14	45	16.4	17.10	126.7
8		18	44	14.1	17.00	126.0
9		18	45	13.0	17.80	131.8
1800		19	43	13.8	18.90	140.0
01		20	41	16.5	20.00	148.1
02			42	17.5	20.00	148.1
03			42	18.7	20.30	150.4
04			43	18.8	20.70	153.3
05			44	19.0	21.10	156.3
06			46	19.3	21.20	157.0
07			49	19.2	21.40	158.5
08			49	18.6	22.00	163.0
09			45	19.6	23.00	170.4
1810			49	17.5	24.60	182.2
11			51	16.7	25.70	190.4
12			51	15.1	26.50	196.3
13			53	14.7	27.30	202.2
14			53	15.1	26.50	196.3
15	30		55	14.3	24.50	181.5
16	30		54	13.4	21.60	160.0
17	27		52	11.8	21.10	156.3
18	27		53	11.7	20.60	162.6

	Staunton	Shelford	n.	c.v.	Mean	Index
1819	25		54	13.0	20.70	153.3
1820	25		52	12.8	20.40	151.1
1	22		54	12.1	19.90	147.4
2	18		53	14.4	18.80	139.3
3	19		53	14.8	18.20	134.8
4	21		51	13.8	18.80	139.3
5	21		52	12.1	19.80	146.7
6	22		49	11.7	19.70	146.0
7	18		49	13.0	19.20	142.2
8	18		51	14.7	19.10	141.5
9	18		46	15.3	19.00	140.7
1830	18		44	14.9	18.80	139.3
1	18		41	16.0	18.70	138.5
2	18		40	17.7	18.70	138.5
3	21		40	17.2	18.60	137.8
4	19		41	16.9	17.80	131.9

APPENDIX 4

Skill Differentials in Building
(Labourers rate as a percentage of the craftsmen's)

	Nott- ing- ham	Strat- ford	Leic- ester	Lich- field	New- castle	Lille- shall	Milton	Strel- ley	Wel- beck	Musk- ham	Inge- stre	Alton
1750	66.6	75						66.6	61.1	55.5		
1	66.6	75						66.6	61.1	55.5		
2	66.6	75						66.6	61.1	55.5		
3	66.6	75						66.6	61.1	55.5		
4	66.6	75						66.6	61.1	55.5		
5	66.6	75						66.6	61.1	55.5		
6	66.6	75						66.6	61.1	55.5		
7	70	75						66.6	61.1	55.5		
8	70	66.6						66.6	61.1	55.5		
9	70	66.6						66.6	61.1	55.5		
1760	70	66.6						66.6	61.1	66.6		
1	70	66.6						66.6	61.1	66.6		
2	70	66.6						66.6	66.6	66.6		
3	70	66.6						66.6	66.6	66.6		
4	70	66.6						66.6	66.6	66.6		
5	70	66.6						66.6	66.6	66.6		
6	70	66.6						66.6	66.6	66.6		
7	70	66.6		80		75		66.6	66.6	66.6		
8	72.7	66.6		80		75		60	66.6	66.6		
9	72.7	66.6		80		75		60	66.6	66.6		
1770	72.7	70		80		75		60	66.6	66.6		
1	72.7	70		80		75		60	66.6	66.6		

	Nott- ing- ham	Strat- ford	Leic- ester	Lich- field	New- castle	Lille- shall	Milton	Strel- ley	Wel- beck	Musk- ham	Inge- stre	Alton
1772	72.7	70		80		75		60	66.6	66.6		
3	72.7	70		80		75		60	66.6			
4	72.7	70		81.8		80		60	66.6			
5	72.7	70		81.8	75	80		54.5	77.7	70		
6	66.6	70		81.8	75	80		54.5	70	70		
7	66.6	70		81.8	75	80		54.5	70			
8	66.6	70	66.6	75	75			63.6	70			
9	66.6	66.6	66.6	75	75			68.2	70			
1780	66.6	66.6	66.6	75	75		50	66.6	70			
1	66.6	66.6	66.6	75	75		50	66.6	70			
2	66.6	66.6	66.6	75	75		50					
3	66.6	63.6	66.6	75	75		50					
4	70.8	63.6	66.6	75	75		50	75				
5	70.8	63.6	66.6	75	75		50	75				
6	70.8	63.6	66.6	75	75		50	75				
7	70.8	63.6	66.6	75	75		50	75				
8	70.8	63.6	66.6	75	75	77.3	50	75				
9	70.8	63.6	66.6	75	75	77.3	50	75				
1790	69.2	63.6	69.3	76.9	76.9	70.8	58.3	69.2		66.6		
1	69.2	68.2	69.2	76.9	71.4	70.8	58.3	66.6		66.6		
2	73.1	68.2	71.4	71.4	66.6	70.8	58.3	64.3				
3	73.1	72.7	73.3	71.4	66.6	70.8	70.8	66.6	69			

	Nott- ing- ham	Strat- ford	Leic- ester	Lich- field	New- castle	Lille- shall	Milton	Strel- ley	Wel- beck	Musk- ham	Inge- stre	Alton
1794	73.1	66.6	73.3	71.4	66.6	75	66.6	70				
5	73.1	66.6	73.3	70	66.6	75	75	68.7	66.6			
6	71.4	66.6	75	68.8	66.6	75	75	66.6	66.6			
7	66.6	71.4	75	68.8	66.6	73.1	83.3		66.6			
8	61.1	71.4	75	67.6	66.6		83.3		66.6			
9	66.6	71.4	70.6	66.6	66.6		71.4		75			
1800	72.2	71.4	66.6	66.6	66.6		69		60			
01	77.7	66.6	66.6	66.6	61.5		69		60			
02	71.4	62.5	66.6	66.6	66.6		73.3					
03	71.4	64.7	69.3	66.6	66.6		73.3					
04	71.4	61.1	69.2	72.2	66.6	66.6	73.3		76.2			
05	73.9	61.1	68.2	77.7	66.6	66.6	73.3		76.2			
06	73.9	66.6	68.2	77.7	66.6	66.6	80					
07	75	63.2	68.2	77.7	63.6	62.5	80					
08	75	60	68.2	70		68.8	72.7				73.7	
09	75	60	68.2	71.5		68.8	66.6		75		73.7	
1810	69.2	65	68.2	69.8		66.6					82.1	
11	66.6	66.6	69.6	72.7	70.5						78.1	
12	66.6	71.4	69.6	77.3							78.1	
13	66.6	71.4	70.8	75			61.9				76.2	
14	66.6	71.4	70.8	78.3	75		61.9				72.7	
15	75	66.6	70.8	73.9	70		61.9				72.7	

	Nott- ing- ham	Strat- ford	Leic- ester	Lich- field	New- castle	Lille- shall	Milton	Strel- ley	Wel- beck	Musk- ham	Inge- stre	Alton
1816	62.5	57.1	70.8	76.2							66.6	
17	58.3	58.5	70.8	76.2							66.6	
18	66.6	65	70.8	71.4							71.4	
19	62.2	67.5	70.8	71.4		56.8	52.4				68.2	
1820	62.2	67.5	70.8	71.4	66.6	55.5	52.4				68.2	
1	62.2	65	70.8	71.4		50					71.4	
2	62.5	61.1	66.6		70	50					62.8	
3	62.5	61.1	66.6			50	61.1				54.5	
4	70.8	55	62.5		71.8						57.1	
5	65.4	57.1	62.5				51.3				63.6	
6	70.8	57.1	62.5								64.3	
7	66.6	57.1	62.5								61.9	
8	66.6	57.1	62.5								61.9	
9	66.6	57.1	62.5				56.4					57.1
1830	66.6	57.1	62.5				56.4					57.1
1	66.6	57.1	62.5				56.4					57.1
2	66.6	57.1	62.5				56.4					57.1
3	66.6	57.1	62.5				56.4					57.1
4	66.6	57.1	62.5		61.9		61.1					57.1

B I B L I O G R A P H Y

SECTION A: MANUSCRIPT SOURCES

Leicestershire

Braye Mss	L.M.
Croxton Lodge Farm Accounts	L.R.O.
Ferrers Mss	L.M.
Herrick Mss	L.R.O.
Loughborough Rectory Accounts	L.R.O.
Quarter Sessions Papers: County Treasurers Vouchers	L.R.O.
Ravenstone Hospital Accounts	L.R.O.
Belgrave H.S. Accounts	L.M.
Burrough H.S. Accounts	L.R.O.
Kimcote H.S. Accounts	L.R.O.
Kirby Muxloe H.S. Accounts	L.R.O.
Lutterworth H.S. Accounts	L.R.O.
Market Harborough H.S. Accounts	L.R.O.
Shawell H.S. Accounts	L.R.O.
Stoke Golding H.S. Accounts	L.R.O.

Nottinghamshire

Arundel Castle Mss	Sheffield City Library
Edge Mss	N.R.O.
Francklin Mss	N.R.O.
Galway Mss	N.U.L.
Middleton Mss	N.U.L.

Nevile Mss	N.R.O.
Nottingham Corporation Chamberlains Vouchers	N.P.L.
Newcastle Mss	N.U.L.
Portland Mss	N.R.O.
Savile Mss	N.R.O.
Barnby Moor H.S. Accounts	N.R.O.
Cropwell Butler H.S. Accounts	N.R.O.
Cropwell Bishop H.S. Accounts	N.R.O.
East Leake H.S. Accounts	N.R.O.
Elkesley H.S. Accounts	N.R.O.
Kilvington H.S. Accounts	N.R.O.
Laxton H.S. Accounts	N.R.O.
Mansfield Turnpike Trust Accounts	N.R.O.
Misson H.S. Accounts	N.R.O.
Norwell H.S. Accounts	N.R.O.
Shelford H.S. Accounts	N.R.O.
Staunton H.S. Accounts	N.R.O.
<u>Northamptonshire</u>	
Dryden Estate Papers	N'ton R.O.
Fitzwilliam Estate Papers	N'ton R.O.
Grafton Estate Papers	N'ton R.O.
Maxwell Estate Papers	N'ton R.O.
Tryon Estate Papers	N'ton R.O.
Wakefield Estate Papers	N'ton R.O.
Abington H.S. Accounts	N'ton R.O.
Badby H.S. Accounts	N'ton R.O.

Bradden H.S. Accounts	Incumbent
Cottesbrooke H.S. Accounts	N'ton R.O.
Crick H.S. Accounts	N'ton R.O.
Daventry Turnpike Trust Accounts	N'ton R.O.
Easton on the Hill H.S. Accounts	N'ton R.O.
Hardwick H.S. Accounts	Incumbent
Harlestone H.S. Accounts	N'ton R.O.
Holcot H.S. Accounts	N'ton R.O.
Little Billing H.S. Accounts	N'ton R.O.
Moulton H.S. Accounts	N'ton R.O.
Old H.S. Accounts	N'ton R.O.
Passenham H.S. Accounts	N'ton R.O.
Rushton H.S. Accounts	Incumbent
West Haddon H.S. Accounts	N'ton R.O.
Wicken H.S. Accounts	N'ton R.O.

Warwickshire

Aylesford Labour Books	Packington Hall
Leigh Mss	S.B.T.
Pleydell Bouveries Collection	Berkshire R.O.
Seymour Mss	W.R.O.
Stratford upon Avon Corporation Chamberlain's Vouchers)) S.B.T.
Baginton H.S. Accounts	W.R.O.
Barton on the Heath H.S. Accounts	W.R.O.
Bishops Tachbrooke H.S. Accounts	W.R.O.
Clifford Chambers H.S. Accounts	W.R.O.
Farnborough H.S. Accounts	W.R.O.

Hunningham H.S. Accounts	W.R.O.
Kennilworth H.S. Accounts	W.R.O.
Long Compton H.S. Accounts	W.R.O.
Meriden H.S. Accounts	W.R.O.
Monks Kirby H.S. Accounts	W.R.O.
Nether Whitacre H.S. Accounts	W.R.O.
Packington H.S. Accounts	W.R.O.
Pillerton Hersey H.S. Accounts	W.R.O.
Rowington H.S. Accounts	W.R.O.
Shustoke H.S. Accounts	W.R.O.
Temple Grafton H.S. Accounts	W.R.O.
Warwick H.S. Accounts	W.R.O.
Willey H.S. Accounts	W.R.O.
Wolfhampcote H.S. Accounts	W.R.O.
Yardley H.S. Accounts	W.R.O.

Staffordshire

Aqualate Farm Accounts	S.R.O.
Bagot Mss	S.R.O.
Bradford Collection	S.R.O.
Giffard Mss	S.R.O.
Hatherton Collection	S.R.O.
Chrewsbury Collection	S.R.O.
Sutherland Collection	S.R.O.
Vernon Farm Accounts	S.R.O.
Armitage H.S. Accounts	S.R.O.
Betley H.S. Accounts	S.R.O.

Brewood H.S. Accounts	S.R.O.
Blymhill H.S. Accounts	S.R.O.
Cheadle H.S. Accounts	S.R.O.
Cheddleton H.S. Accounts	S.R.O.
Enville H.S. Accounts	S.R.O.
Great Barr H.S. Accounts	S.R.O.
Tettenhall H.S. Accounts	S.R.O.

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1821	Commons Committee on Highways
1824	S.C. Labourers Wages
1831	P.P. (Lords) cccxi
1833	S.C. Manufacturing Commerce & Shipping
1836	Report on the State of the Irish Poor in Great Britain
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