

**Some parts of this thesis may have been removed for copyright restrictions.**

If you have discovered material in AURA which is unlawful e.g. breaches copyright, (either yours or that of a third party) or any other law, including but not limited to those relating to patent, trademark, confidentiality, data protection, obscenity, defamation, libel, then please read our [Takedown Policy](#) and [contact the service](#) immediately

MASTERS AND MEN IN THE SMALL METAL TRADES

of the West Midlands

1660 - 1760

Marie B. Rowlands M.A.

University of Aston

1972

THESIS  
338.4569  
ROW

29 NOV 72 156603

Dissertation submitted to the Senate of the University  
of Aston, to be considered for the award of the  
degree of Ph.D. August 15<sup>th</sup> 1972.

**BEST COPY**

**AVAILABLE**

Poor text in the original thesis.

Some text bound close to the spine.

Some images distorted

**PAGE**

**NUMBERING**

**AS ORIGINAL**

## Summary.

This study examines the part played by both the productive workers and the commercial capitalists, in the small metal manufacturing industry of the West Midlands 1660-1760. It also considers the status of both groups in the community.

### Part 1.

In the sixteenth century the industry was based on a dual economy. By 1660 it had developed a commercial organisation capable of reaching distant markets and a productive capacity capable of supplying them.

### Part 2.

There were wide differences of technique and organisation between the trades, and corresponding social differences. The family unit of production was of considerable significance in the growth of the industry providing reserves of man power and investable capital. Some metal workers achieved a considerable degree of domestic comfort.

### Part 3.

Much of the iron produced in England was consumed in the Midlands and there were constant efforts to increase the field of supply. Midland ironmongers played a significant part in these attempts.

#### Part 4.

The Midlands ironmongers were a numerous body. They were not conspicuously competitive, and there were opportunities for small scale operators; nevertheless there was a marked continuity of leadership. The commercial activities of the ironmongers were attended by many complications and limitations, but this did not prevent rapid expansion and considerable prosperity. Direct bargaining with the workmen, a marked feature of the earlier period, began to decline, as a small but growing class of intermediaries emerged.

#### Part 5.

From about 1710, Midland metalworkers responded speedily to changing demands by diversification of their products and increased specialisation. A wider range of raw materials was used, and new techniques were introduced. This led to some changes in organisation but new ways did not displace the old. When change did come, it was not the result of the leadership of a few outstanding individuals but the cumulative effect of many small initiatives by obscure men.

## LIST OF CONTENTS

	PAGE NO.
Part 1. The development of the Midlands Hardware Industry before 1660	4
Factors conducive to a dual economy..	11
The supply of raw materials	19
The availability of markets	24
The emergence of the chapman/ironmonger	27
The penetration of the London market.	31
Part 2. The metalworkers 1660-1710	36
Variety and distribution of trades...	39
The family as the unit of production.	61
The family contribution to prosperity	70
Money and investment	78
Standard of domestic comfort	86
Houses of the metalworkers	92
Part 3. The supply of iron 1660-1760	98
Home produced iron consumed in the Midlands	100
Attempts to increase the supply - Britain	112
Imported iron a) Russian b) American.	117

Part 4. The ironmongers 1660-1760	... ..	127
of ironmongers and		
The numbers and scale of activities ..		129
The ironmongers at work - the purchase		
of iron	... ..	150
Credit and exchange	... ..	157
The employment of workmen and labour		
relations	... ..	165
Collection and despatch of goods	... ..	170
The ironmongers and their customers ..		175
Trading practices in the home and Irish		
markets	... ..	187
The conveyance of goods	... ..	198
The prosperity of the ironmongers	... ..	207
Part 5. Changes in products		
1710-1760	... ..	231
Changes in demand at home	... ..	232
Increased export abroad	... ..	236
Diversification and specialisation	... ..	244
Increasing range of raw materials	... ..	264
The origins of the new trades	... ..	257
Changes in management and organisation.		286
Prices and wages	... ..	289
Appendices 1 - 11.		304
Bibliography.		337



Maps and illustrations .

	page
1. Map to show the location of the Midlands Hardware district	6
2. Map of the metal working parishes	8
3. Part of John Speed's map of Staffordshire, 1610	17
4. Map of the South Staffordshire coalfield	20
5. Part of Morden's maps of Staffordshire and of Worcestershire 1695	35
6. A Nailshop Sedgley Staffs.	68
7. Map to show movement of iron into the Midlands	102
8. Map showing location of Midland iron mills	105
9. The Deanery House Wolverhampton.	211
10 Bristol and the coastal trade in ironware	200
11. Markets and ports of the Midland hardware district	202
12. Finch's House Dudley 1701	214
13. The Old Square Birmingham	216
14. The Old Hall Wolverhampton	253.

Part One.

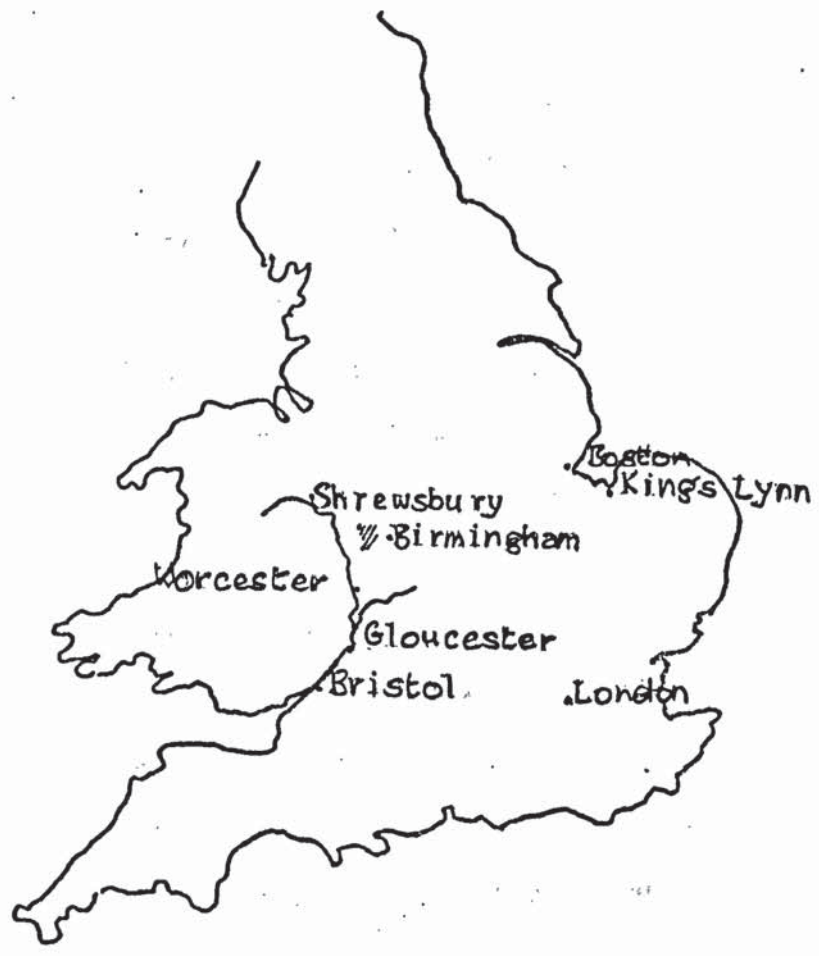
The development of the Midlands Hardware Industry  
before 1660.

The Midlands hardware industry in the sixteenth century.

W.H.B. Court has examined the development of industrial society in the Midlands from the sixteenth century. Much new material for a study of this subject has become available since his work was done, but recent research has tended to concentrate on the supply <sup>1</sup> of raw materials, the great partnerships of the charcoal iron industry, and on the transition to heavy industry.<sup>3</sup> Less work has been done on the history of the production of manufactured articles - a trade which occupied a large proportion of the population of the parishes of the South Staffordshire coalfield, and of those North Worcestershire parishes which bordered the River Stour.

This study will be concerned with examining the work, lives and relationships of the masters and men who were engaged in the production and marketing of manufactured iron goods between 1660 and 1760. It is hoped that insofar as the limited evidence permits a clearer picture may be gained of social change in an early period of industrialisation.

1. B.C.L. Johnson. The charcoal iron industry in the early eighteenth century. Geographical Journal CXVII (1951)
2. B.C.L. Johnson. The Foley Partnerships : the iron industry at the end of the Charcoal Era. Economic History Review. 2nd series 1V 1952.  
R.G. Shafer. Genesis and structure of the Foley Ironworks in Partnership. Business History. Vol. XIII No.1. p.19. January 1971.
3. Gale W.K.V. The Black Country Iron Industry.(1966)



The location of the Midlands Hardware district.

The shaded area indicates the region studied.

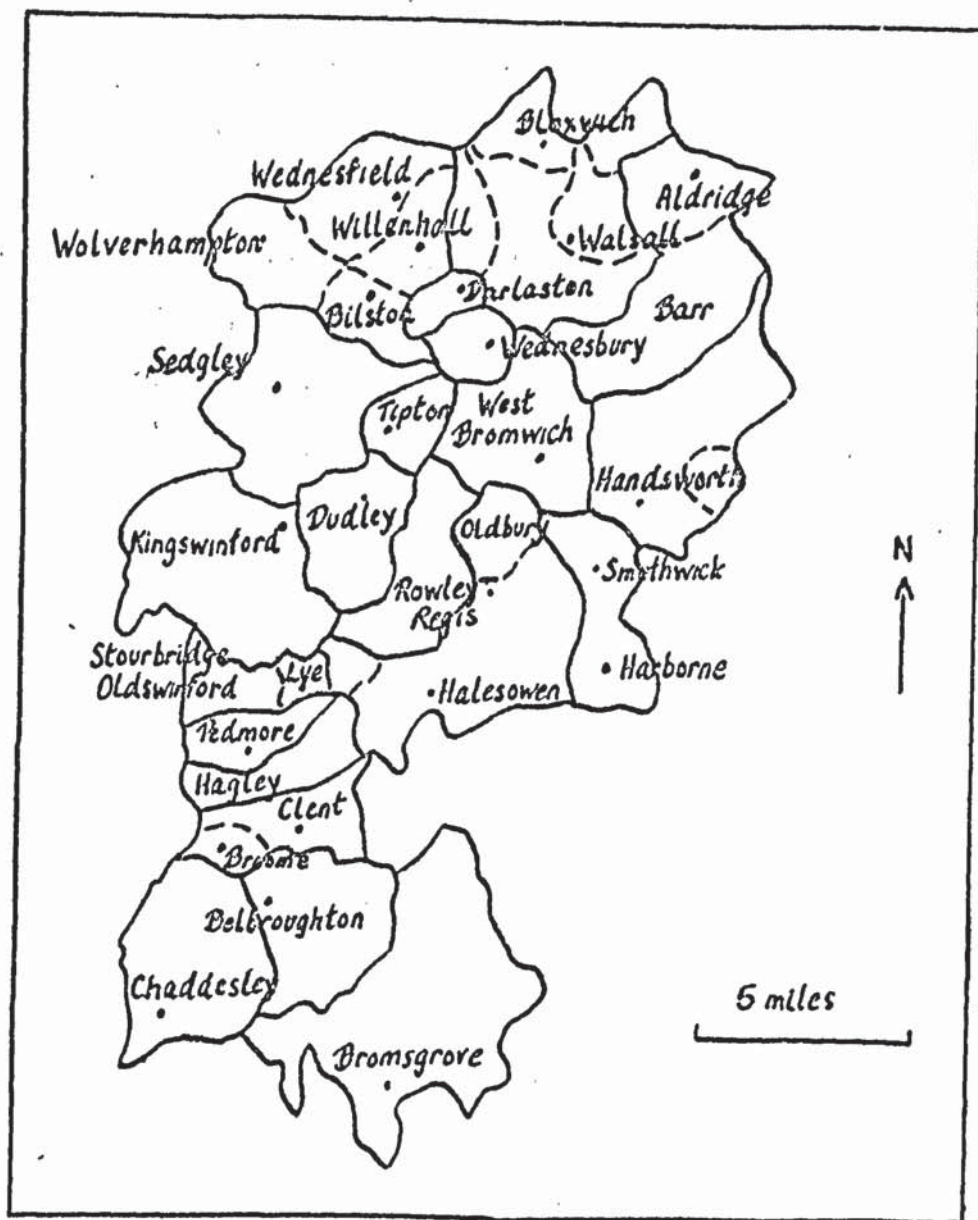
7

In 1511 and again in 1513 and 1514 the Clerk of the Ordnance purchased supplies from the Midlands of bridle bits, horseshoes and bill heads for the Army. The contractors were John Ripton, John Coke and Richard Russell all of Birmingham.<sup>1</sup> A few years later Raynold Ward of Dudley "nailman" supplied nails for the building of Hampton Court and of Nonesuch Palace in Surrey.<sup>2</sup> Already by the beginning of the sixteenth century the Midlands was established as a centre for the supply of large quantities of metal goods.

The metalworking region consisted of those thirteen parishes of South Staffordshire which lay on the coalfield between the Bentley Fault and the River Stour, and those parishes in adjacent Worcestershire and Warwickshire which lay within ten miles of the coalfield. The distance which raw materials could easily be carried determined the limits of the region. It was divided into a western and eastern sub-region by the River Tame. To the east lay the parishes of Birmingham Deritend and Aston. These parishes have not been considered in detail in this study since considerable work has already been done on this area.<sup>3</sup> It was separated from the western area - the subject of this study - by barren thinly populated heath lands until well into the nineteenth century. Although there were close links between the two sub-regions they were in many respects distinct, and each retained a separate social identity.<sup>4</sup>

1. Cal. S.P. Dom. Letters and Papers of Henry VIII  
Vol.1. part 1 3 Henry VIII (1511) p.501.  
Vol.1. part 2 4 Henry VIII (1513) p.1,512.  
Vol.1. part 2 5 Henry VIII (1514) p.1,515.
2. Roper J.S. Dudley The sixteenth century town (1963) pp.17-18.  
Raynold Ward was buried at Rowley Regis 26th Jan.1549.  
Dent J. The Quest of Nonesuch (1962) Appendix 1.p.270.
3. Wise M.J. Birmingham and its Regional Setting (1950)  
Victoria County History Warwickshire Vol.vii - Articles by  
D.E.C. Eversley and W.B. Stephens. Also numerous articles  
by R.A. Pelham (1945-1962) and M. Wise (1948-51) listed in  
Bibliography.
4. West Midland Regional Planning Group Conurbation (1948)

**PAGE  
NUMBERS  
CUT OFF  
IN  
ORIGINAL**



The metal working parishes  
of the West Midlands.

Evidence of occupations from the sixteenth century shows that in these parishes the proportion of metalworkers was already very high. Almost all the metalworkers of Worcestershire were to be found in the parishes in the north west between the Stour River and Elmley Brook. In Dudley 90% of the references to occupations were to metalworking and in Halesowen 70%.<sup>1</sup> There were only 16 references to occupations in Dudley parish register 1560-1600 but nine of them were to nailers.<sup>2</sup>

The concentration was even more notable in the Staffordshire coalfield parishes between the River Tame and the River Stour. References in court papers are extremely numerous.<sup>3</sup> The parish registers of Sedgley noted occupations from 1579 and in the first two years nailers and other metalworkers account for more than one third of all the persons named.<sup>4</sup> In West Bromwich parish registers the occupations of 212 persons were recorded. Of these 122 were nailers and 12 bucklemakers.<sup>5</sup>

1. Buchanan K.McP. Transactions of Worcestershire Archeological Society. Volumes xvii (1940) xviii (1941) xix (1943). The main metalworking parishes were Belbroughton, Chaddesley Corbett, Clent, Dudley, Halesowen, Oldswinford, Pedmore, Rowley Regis.  
The references are drawn from the index to the Probate inventories for Worcestershire and the printed Quarter Sessions papers.
2. Roper J.S. Dudley, The sixteenth century town. (1963)
3. Victoria County History Vol.II p.239.  
Court W. Rise of the Midland industries. pp.25-31  
Staffordshire Quarter Sessions papers 1584-1609 published in Staffordshire Historical Collections. Volumes for 1929,1927,1930, 1932,1935,1940 and 1948.  
References are especially numerous in Coseley, Gornal, Handsworth, Kingswinford, Rowley Regis, Sedgley, Tipton, Wednesbury,Wednesfield.
4. Sedgley Parish Register col.1. 1556-1686 Staffs Parish Register Society publication (1940)
5. West Bromwich Parish Register. Staffordshire Parish Register Society (1909 )



The region comprised both urban and rural communities. Walsall was a fully developed borough with town council and merchant guild.<sup>1</sup> Dudley<sup>2</sup> and Wolverhampton<sup>3</sup> and Halesowen<sup>4</sup> had all been seigneurial boroughs in the Middle Ages but had never developed full borough status. Wolverhampton in particular had lost all but vestigial traces of borough organisation by the end of the sixteenth century.

Many of the parishes were large and included numerous scattered hamlets. Sedgley contained 9 hamlets, Halesowen 13, Rowley Regis 18. Wolverhampton parish was over 20 miles across and included 17 villages.

There were also several small compact nucleated parishes such as Wednesbury and Darlaston.

Metalworking was carried on in both the rural and urban communities and was not subject to any form of regulation in either. There was a protracted campaign to introduce regulations between 1584 and 1630 in this as in other industries, but it was unsuccessful.<sup>5</sup>

Most of the metalworkers combined metalworking with agriculture.<sup>6</sup> Between 1560 and 1760 this dual economy was the strong basis on which the Midlands hardware trade was to grow and expand.

1. Homeshaw E.J. The Corporation of the Borough and Foreign of Walsall (1960- )
2. Roper J.S. Dudley : The sixteenth century town (1968) p.19.
3. Mander G. and Tildesley N. History of Wolverhampton (1960) Chapters 4 and 5.
4. Somers A.K. Halas Hales Halesowen (1932)
5. Court W.H.B. Rise of the Midland industries (1938) pp.61-64. discusses this campaign at length.
6. Roper J.S. Transcripts of Inventories.  
 Dudley Probate inventories 1544-1603 (1965)  
 Sedgley Probate inventories 1614-1787 (1960)  
 Stourbridge Probate inventories 1541 -1558 (1966)

2. The dual economy of the Midlands - factors encouraging its development

The Midlands hardware district displayed many of the characteristics conducive to a dual economy which were established by Dr. Joan Thirsk in her study of industries in the countryside.<sup>1</sup>

In the first place it was populous. In 1563 the eleven South Staffordshire parishes returned 1,204 communicants. Staffordshire as a whole returned only 9,183. Thus the area with 5% of the acreage returned 12% of the communicants.<sup>2</sup> Unlike Staffordshire, Worcestershire contained four large populous medieval cities. These large towns inflate any simple average of Worcestershire population and distort the comparison. Furthermore, both Halesowen and Dudley failed to make a return in 1563. However, taking the parishes of the north west of Worcestershire individually it is clear that they were supporting above average populations. Bromsgrove made the fifth largest return in the county, Oldswinford (including Stourbridge) the sixth largest, and Chaddesley Corbett the seventh largest return of communicants. Even Hagley, the smallest of the parishes, returned 88 communicants.<sup>3</sup>

1. Thirsk J. Industries in the countryside in Fisher F.J. (ed) Essays in the economic and social history of Tudor and Stuart England 1961. Thirsk J. The Agrarian History of England and Wales 1500-1640 (1967) pp 9-15, 417-429.
2. Based on figures given by Commander Wedgwood in his contribution to the introduction to W.S. Landor Staffordshire incumbents. Collections for a History of Staffordshire (1915) pp. lxxix - lxxv. Acreages are based on those given for 1801 in Victoria County History of Staffordshire Vol.1.p.318-321
3. Based on figures given by G. Miller in The Parishes of the diocese of Worcester Vol.2. (1890) Acreages from the Victoria County History of Worcestershire. Vol.lv pp.464-472. Some of these parishes are among those studied by Eversley D. in Population in History. His figures for the 1563 return are drawn from a source which differs from Miller in detail, but the implications are unaffected. Summary of figures Appendix 1. p. 305. below

In the second place the agriculture of the region was comparable with other districts which produced a dual economy. It was pastoral rather than arable, enclosed rather than champion, and there was woodland and wasteland to provide a foothold for the expanding population.

The land was less suited to arable than to pasture farming. Much of the district was wet clay land. Rye, oats and barley were the grains chiefly grown in North Worcestershire and South Staffordshire in the sixteenth century. Pastoral farming was probably practised more than husbandry. In the parishes adjoining the region on the east - Yardley, Solihull and other Forest of Arden parishes the economy was "predominantly pastoral, the main emphasis being on cattle".<sup>3</sup> Cattle were taken to Birmingham market in the fifteenth century<sup>4</sup> and both Birmingham and Bromsgrove had significant tanning industries. Sheep rearing for the woollen industry of Worcestershire was also carried on. Bromsgrove, Stourbridge and Kidderminster were centres of wool production, and Wolverhampton was a centre of distribution.<sup>5</sup>

1. Wise M.J. (ed) Birmingham and its Regional setting (1950) pp.xvii
2. Yelling J. The combination and rotation of crops in Worcestershire 1540 - 1660 Agricultural History Review Vol.xvii (1969) p.24.  
Roper J.S. Transcripts of Probate Inventories  
Sedgley 1614-1787 (1960) Dudley Vol.1. 1544-1603 (1965)  
Stourbridge 1541-1558 (1966)
3. Skipp V.H. Economic and Social Change in the Forest of Arden in  
Thirsk J. (ed) Land, Church and People (1970) p.84.
4. Pelham R. Growth of settlement and industry in Wise M.J. (ed)  
Birmingham and its regional setting (1950) pp.135-150.
5. Mander G.M. and Tildesley N. History of Wolverhampton (1960) pp.35-6  
Buchanan K. McP. Studies in the localisation of 17th  
Century Worcestershire industries. Transactions of the  
Worcestershire Archaeological Society Vol.XVII (1940)  
Vol. XVIII (1941) Vol.XIX (1943)  
Victoria County History Warwickshire Vol.II pp.281-297

There was much early enclosure in the region. Leland skirted the district on two occasions and found it mostly "enclosed ground, somewhat hilly and daly" and again "woody ground with some corn in enclosures."<sup>1</sup> A recent study has shown that by the sixteenth century the North of Worcestershire was the "most enclosed part of the county and predominantly pastoral in character" and "although collective management continued in some cases there is no evidence of any regular common field divisions in the sixteenth and seventeenth centuries".<sup>2</sup>

The common lands of Birmingham were being enclosed for pasture in the early sixteenth century, and some land at Handsworth had been enclosed from woodland and waste.<sup>3</sup> There was much early enclosure in the Forest of Arden which bordered the region in the south east.<sup>4</sup> To the west enclosure from the Forest of Kinver was in progress.

North of the River Stour the villages kept their "leet fields" to a greater degree but even there the open fields were already slowly disappearing under buildings and industrial sites, cut up by coal pits and closes. Some land remained in this area to be enclosed by Act of Parliament but on the whole the process was one of enclosure by encroachment.

1. Leland J. Itinerary ed L. Toulmin Smith. parts iv and v Vol.II p.86.
2. Yelling J. 'The combination and rotation of crops in East Worcestershire' Agricultural history review. Vol. xvii (1969) p.39.
3. Gill C. Studies in Midland History (1930) p.134 and 176-7.
4. Skipp V.H. 'Economic and Social Change in the Forest of Arden 1530-1649' in Thirsk J. Land, Church and People (1968) p.68-70.  
Tate W.W. 'Worcestershire Field Systems,' Transactions of Worcestershire Archeological Society. Vol.xx 19. pp.26-9.  
Thomas H.R. Enclosure of the open field and commons of Staffs. Historical Collections for Staffordshire Volume for 1931

There was much woodland, wasteland and heath land in the area. This was an important factor in enabling a large population to establish a viable pattern of earning based on a combination of agriculture and metalworking.<sup>1</sup> There were many young men who found it possible to set up housekeeping and maintain a family by building a cottage and workshop on the waste.

1. The numbers of landless labourers were increasing in many areas at this time and the size of the population is itself an argument that there must have been an increasing number of landless or near landless men in the parishes under discussion.  
Everitt A. 'Farm Labourers' in Agrarian History of England and Wales.  
Chap. vii p.406-430.

The value of the waste to such men was well illustrated by the case of Christopher Lydiatt "a poor man, a day labourer in iron works and a nailer" who about 1600 was allowed by Lord Dudley to build a "cottage on the waste on Smethwick common a quarter of a mile from the Iron Forge there". As a result of this advantage Christopher was able to prosper, lived there for 30 years, became a man of substance and built in 1631 two bays of barning worth £40 to house his harvest.<sup>1</sup>

Eleven new cottages were listed as having been built on the waste at Sedgley in 1609. None of the cottagers who had built them paid any rent, but the surveyor indicated that they were "worth yearly to be sett" 4d each. There was one exception. William Edson had "one little cottage by him built with one shop likewise built and give nothing for it - ... it is worth yearly to be sett 12d". Even though these valuations are only notional, the difference in potential value between a cottage and a cottage with shop was made clear.<sup>2</sup> The men who built these cottages were nailers and labourers, young married men with growing families. None of them held any other land in the manor.<sup>3</sup> The fact that not one of these men had been paying any rent demonstrates the ease with which the increasing numbers of landless men in manors such as Sedgley could establish themselves. Their tenure was "at the will of the lord", it is true, but the influence of the lords of the manor bore only lightly on the inhabitants.

1. Public Record Office. Chancery C3/399/93.  
I am indebted to Mr.G. Baugh of the Staff of the Victoria County History for Staffordshire for this reference.
2. Survey of the manor of Sedgley 1614.  
Dudley Archives (Dudley Reference Library) Bundle 7/10.
3. Sedgley Parish Register 1558-1684. Staffordshire Parish Register Society publication (1940)  
Manorial Surveys provide many examples of cottage building on the waste:- 60 cottages at West Bromwich (1684) 123 on Pensnett Close and 107 on Oldswinford Wastes (1699) for example.

16

Although the district was manorialised leadership and power were much divided in the district.

Wolverhampton and its chapelries was divided between the Deanery Manor, the seven prebendal manors and the two secular lords of the manor of Stow Heath. There were many small manors held by gentlemen whose resources were hardly greater than those of the most substantial yeomen.

The most influential of the Lords of the Manors were the Earls of Dudley who held many manors and exploited mineral resources. However, this family went through a period of great poverty 1530-1644 and the manor was leased out. Later lords of Dudley exercised great economic influence, but this was through investment in coal, iron and clay mining. Apart from some slight involvement in the unsuccessful attempt to regulate the industry in the period 1600-1621, they did not concern themselves with the hardware trade.

Administrative boundaries in the area were extremely confused and there were many places which were extra parochial and others which were detached from their parent county. There was thus no strong dominating influence in the district, either of personality or of organisation.



Aston University

Illustration removed for copyright restrictions



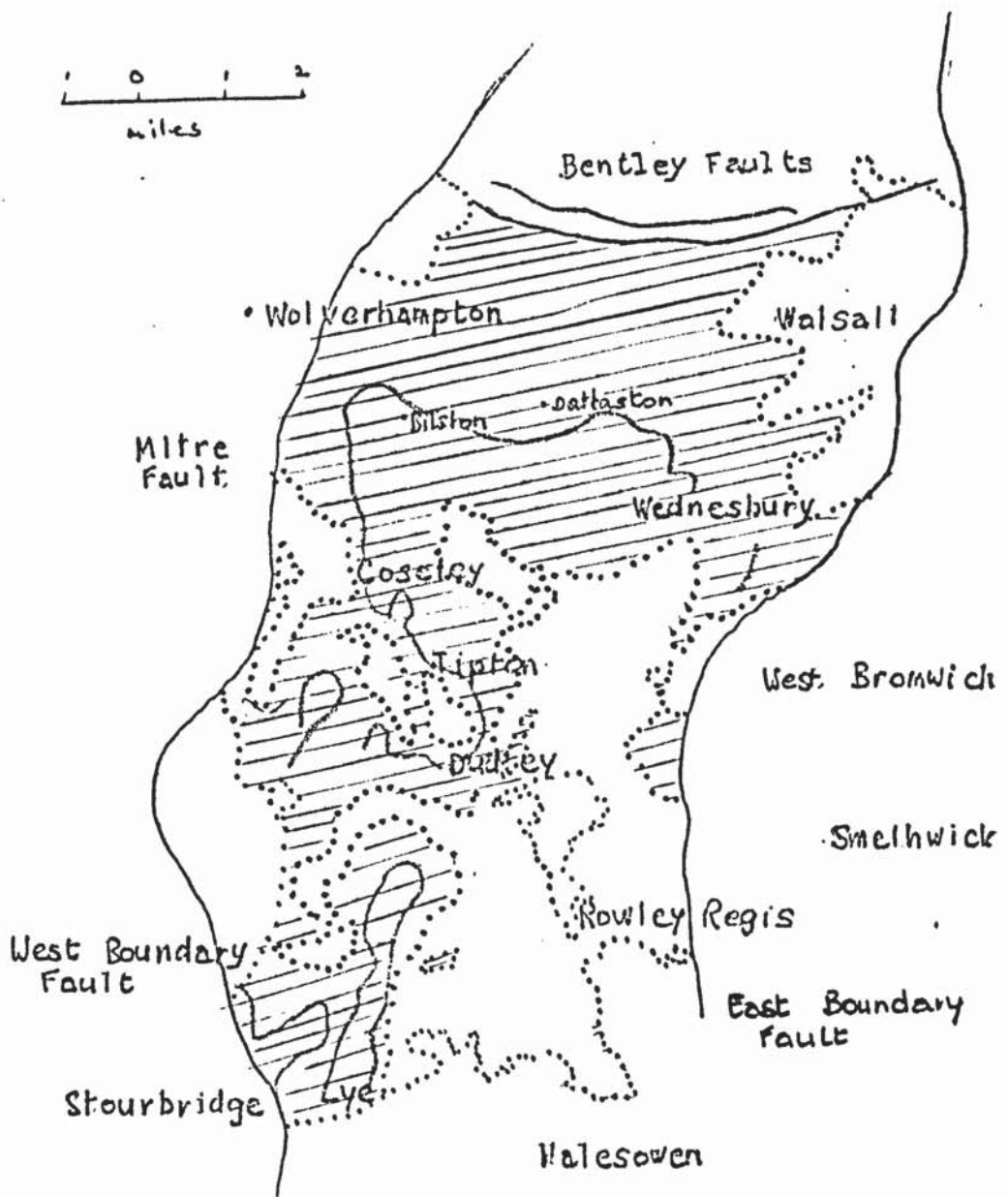
18

The Midland region thus demonstrated many of the features which have been established as characteristic of regions with a dual economy in the sixteenth and early seventeenth century - namely a large population in pastoral areas not suited to corn growing, and with little manorial influence. Of another feature found elsewhere - partible inheritance, - there is no evidence in the Midlands.<sup>1</sup> All these features are negative factors, discouraging to agriculture, putting the regions concerned at a "comparative disadvantage" to better arable areas. However, the Midlands also provided some positive encouragements which operated from a very early period to stimulate men to find their "comparative advantage" in partial industrialisation. These advantages were rich supplies of raw materials and the attraction of ready markets for simple metal goods. It may be that these factors were more important in encouraging rural industry than the negative factors discouraging arable farming.<sup>2</sup>

1. Thirsk J. 'Industries in the countryside' in Fisher E. ed. Essays in Tudor and Stuart Economic and Social History. p.72-3  
Jones E. Agriculture and industrialisation. Past and Present. 1968  
Vol.XI pp.59-71.
2. Conditions were very similar in the developing rural metalworking districts of Normandy and other parts of France. There too poor soil, large population and available raw materials were found in combination. Vidalenc J. La petite Métallurgie Rurale en Haute Normandie (1946) p. 19.

3. Raw Materials for the hardware trades.

Dr. Thirsk herself points out that "in the mineral yielding areas industry and agriculture were ancient bedfellows ... there is therefore no need for predisposing social and economic circumstances to account for the rise of industry". Raw materials in this area could be obtained with the utmost ease. Coal outcropped in many places. In some parishes the ten yard seam was so near the surface that it could be dug in the open fields or in the tofts and backsides.



Map of the South Staffordshire Coalfield  
 showing the middle coal measures and  
 the outcrop of the ten yard seam.

At Halesowen in 1281 the carriage and render of sea coal was one of the payments due to the lord of the manor.<sup>1</sup> At Wednesbury in the fourteenth century copyholders were in conflict with their lord concerning their right to mine sea coal on their holdings.<sup>2</sup> At Sedgley and Darlaston there were two classes of copyholders - those with the right to mine and those who had to pay a small fine to do so.<sup>3</sup> By the 17th century it was accepted that while the property in coal belonged to the lord the possession was in the copyholder.<sup>4</sup> Where coal could be dug so readily it was difficult for the lords of the manors to maintain a monopoly of mineral rights.

The copyholders' mining rights were of considerable importance to the iron industry. Coal was used by the end of the sixteenth century at least by all the smiths in their forges. They purchased it very cheaply,<sup>5</sup> in small quantities, and fetched it away daily.

Alongside the coal were strata of ironstone. The best "tough" iron could be made from the high grade ores of Walsall and Rushall. Limestone was also available.<sup>6</sup> The large outcrops at Castle Hill, Wrens Nest and Beacon Hill were easily worked.

Iron making had been practised in the area from at least the 13th century. There were mediaeval bloomeries at Sedgley,<sup>7</sup> Bescot (Walsall) <sup>Rushall</sup> and Bilston. At Bourne Pool, Aldridge there was a water powered iron mill producing very high quality iron for some time before 1495.<sup>8</sup>

Stringers and hammer-men appear in the sixteenth century registers of Womborne, Sedgley and West Bromwich.

1. Somers F and K. Hales Hales Halesowen (1932) p. 17
2. Ede J. History of Wednesbury (1962) p. 106
3. Underhill E.A. The ancient manor of Sedgley (1940) p. 131.
4. Victoria County History Staffordshire Vol. II p. 95
5. 8d a skip of 500 lbs. in 1759. Both 'sekole' and charcoal are found in the scythesmiths' inventories.
6. Pelham R. in Wise. M.J. ed. Birmingham and its regional setting (1950)
7. The earliest reference is in the I.P.M. of Roger de Somery Lord of the Manor of Sedgley. 1273. Underhill Ancient Manor of Sedgley (1940) p. 131.
8. Gould J. Excavations of the 15th Century Iron Mill at Bourne Pool Aldridge. Staffs. Transactions of the South Staffordshire Archaeological and Historical Society 1969-70. Vol. XI p. 58-60.

Between 1560 and 1640 there was a very considerable increase in the availability of raw materials. Water powered furnaces were introduced into the Midlands about 1560. The old bloomeries had provided as little as twenty tons of bar iron per year. The blast furnaces produced as much as 200 tons a year and water powered fineries and chaferies were set up to process the pig iron thus produced. The most important development as far as the Midlands were concerned was the introduction of the slitting mill. This process had formerly been carried out laboriously by hand by the "slytters of iron". The slitting mills not only produced more rod more speedily but also provided a more uniform product.

Many of the early mills were erected by landowners such as Sir Thomas Paget, Sir Thomas Middleton or Lord Dudley. Such men made considerable investment and organised production on a more permanent footing than had probably been the case. This too was to the advantage of the trade since it increased the certainty and regularity of supplies. By the early seventeenth century networks of such mills were being established. Richard Foley, for example, held furnaces at West Bromwich, Himley and Whitnal and forges at Bromwich, Bromford, and "Cooks forge". He also had a slitting mill at the Hyde Kinver.<sup>1</sup>

1. Victoria County History of Staffordshire Vol.II p.109-115

Wise M.J. Ed. Birmingham and its regional setting. p.154-5.

Pelham R.A. Establishment of the Willoughby Ironworks in North Warwickshire. University of Birmingham Historical Journal Vol. iv p.18.

Schubert H.R. History of the Iron and Steel Industry before 1800 (1957) pp.346-356.

Blast furnaces in Staffs. Worcs. and Warwicks.

1561 - 1610. 12.

1610 - 1660. 17.

1660 - 1710. 14.

Field work and documentary work are at present adding to the numbers of known iron mills in the Midlands and Schubert's figures are probably in need of upward revision.

Other iron making groups and partnerships were being established in North Staffordshire and in Shropshire, which also supplied the Midlands.

Thus by 1660 the Midlands hardware district was surrounded by numerous furnaces, forges and processing mills supplying it with iron from a considerable area which stretched from the Forest of Dean to Cheshire.

4. Markets for Midlands hardware.

The Midlands lay within reasonable distance of some of the most developed markets in the country outside London. The districts where market towns and chartered markets were most numerous in proportion to area were presumably those in which trading was most vigorous. The distribution of these market towns was most dense in the area across England from the West Country, along the Bristol Channel across the Cotswolds to Oxfordshire, East Anglia and the South East.<sup>1</sup>

In these parts of England there were more people, more animals, more houses. Consequently they needed more nails and locks, more bits, stirrups and spurs, and more scythes bills and reaping hooks than they could obtain from the all purpose village smith. Goods from the Midlands were already reaching these markets by the sixteenth century. Birmingham traders are found at Kings Lynn and East Anglian merchants visited the Midlands.<sup>2</sup>

1. Map in Everitt A. Marketing of Agricultural produce Thirsk J. (ed) Agrarian History of England and Wales Vol. iv p.498
2. Pelham R. Trade Relations of Birmingham during the later Middle Ages Birmingham Archeological Society Transactions Vol.lxiii (1943)
- Pelham T.R. The cloth markets of Warwickshire during the later Middle Ages. Birmingham Archeological Society Transactions Vol.lxvi (1945)

The sixteenth century scythesmiths of Belbroughton, Hagley and Chaddesley Corbett were despatching scythes to Buckinghamshire, Oxfordshire, Nottinghamshire and Northamptonshire. The heads of the scythemaking families themselves visited the markets and fairs at Eton, Stow, Chipping Camden, Evesham, Cambridge and Stratford-on-Avon. Occasionally they made bargains with chapmen in those places.<sup>1</sup> Even further afield the edgetools of Nicolas Coke of Aston were being sold in London, Bristol and Norwich.<sup>2</sup>

1. J.S. Roper. Early North Worcestershire scythesmiths (1967)  
Trade debts were owing to Richard Coles scythesmith of Stourbridge (3rd Oct, 1552) due from chapmen and others in Evesham, Hopadway, Stowe, Oxfordshire.  
Roper J. Stourbridge Probate Records. (1966)
2. R. Pelham. (in) Birmingham and its regional setting ed. M.J.Wise (1950) p.152.



Between 1560 and 1660 the demand for Midland products increased. The rapid spread of brick buildings large and small created a demand for nails for flooring, and for the roof laths. The increase of domestic furnishing strengthened the demand for locks and hinges. The growth of internal trade and travel increased the demand for metal parts for harness. The rise of the shipping industry increased the demand for spike nails, deck nails and sheathing nails. <sup>1</sup>

These developments were reflected in the changing trade of the River Severn. In the sixteenth century the downstream trows carried raw materials to the Bristol craftsmen, and the upstream trows brought luxury goods such as oil and wine to Worcester and other Severn ports. From the early seventeenth century the trade changed. The ships going south were taking manufactured goods including scythes and nails. These goods were not being shipped by the merchants of the old corporate towns along the river. The trade of ironmonger in such towns was declining, and the number of smiths in Worcester for example "fell away sharply". The new trade on the Severn was in the products of the rural Midland smiths and of the unregulated ironmongers who organised the marketing of their products. <sup>2</sup>

1. Davis R. The Rise of the English Shipping industry (1962) pp.45-7
2. Dyer A.D. 'The early Trade of Worcester' University of Birmingham Historical Journal Vol. X (1959) p.121-131.

The chapmen and ironmongers - before 1660

The function of the chapman or wholesale ironmonger was to specialise in marketing products at a distance.<sup>1</sup> The earliest evidence concerning their activities in the Midlands dates only from the sixteenth century but there seems no reason to doubt that their methods and proceedings were derived from the usual mediaeval model of the middleman who both marketed the product and supplied the makers of goods with raw material.

What may be the earliest reference to the practice in the Midlands occurs in the probate inventory of Roger Whyt nailer of Dudley. He was owed at his death by Thomas Russell<sup>2</sup> 2s.0d. for di. m. (half thousand) of tenpennie nayls sav(e) quarter of Iren".

A fragment of accounts from Abbots Bromley forge (N. Staffs) for the year 1584/5 shows men buying iron at the forge in quantities which suggest that they were distributing it to a considerable number of smiths.

1. The ironmonger was originally a wholesaler - often given the alternative title of chapman. The term is used in this sense in this study. The retail ironmonger developed in market towns as retailing in general developed. Where a retail ironmonger is meant he will be particularised as such. The ironmaster was always a man who organised the manufacture of iron pig and bar.
2. Roper J.S. Dudley Probate Inventories (1965) p.7.

The forge accounts show three main customers (surnames only are given) to whom iron was delivered regularly every four weeks. These were Kyng who took 91 tons, Smallbrook 52 tons, Colemore 49 tons. Kyng is identified as a Birmingham ironmonger, Smallbrook and Colemore are also Birmingham men usually characterised as mercers. Another Birmingham name appearing among the 13 purchasers of iron is Genyng - possibly William Jennings 'faryer'. He was at this time still of Wednesbury though shortly afterwards the family moved to Birmingham and made great wealth as ironmongers. <sup>1</sup> Two facts are striking about this list of purchasers of iron. The first is the quantity bought, large even by comparison with known ironmongers of importance of later date. The second is the appearance of family names which are to figure consistently in lists of ironmongers for the next two hundred years.

The growth of demand and the changes in the sources of supply of iron favoured the rise of men who could operate on a large scale. By 1603 their activities were giving rise to complaint.

1. R. Pelham. Migration of the Birmingham iron industry.  
Birmingham Archeological Society Transactions Vol.LXVI (1945/6)  
 p.144.

For Jennings see below p. 32.

The "nailers bitmakers and locksmiths of the Midlands" petitioned Quarter Sessions complaining among other matters, of those persons "who, brought up to these trades have now given over the said making of ware; and buying wares of others that do make them, to sell to other countreyes. By which means some 20 or 30 persons using the said oppressive kind of trading are exclusively of late enriched". The petition is a lengthy one and a variety of grievances were brought forward but the main animus was against the ironmonger or chapman, and the remedy proposed was that no chapman should buy up any manufactured goods to sell again to whole-sale. The implication is that this is a new and recent development in the trade. There were those, however, who valued the services of the ironmonger and a counter petition from "your worships' poor craftsmen" stressed the advantages to the craftsmen of the ironmongers activities "for the better utterance of our said wares"... "readily wrought and resting upon us"... "specially at such times of year as in the winter season when our wares rest most upon us unuttered". The fourteen signatories to this appeal included at least one lorrimer and two nailers.

1. Staffordshire Quarter Sessions Trinity Term 1603. Item 37  
 See Appendix 2. p 307 below

Evidently the rise of the ironmongers was a matter of controversy. The petitions of 1605 are part of the protracted though ineffective agitation for "regulation" of the iron trades which went on intermittently from 1580-1630. However, both the economic tide and the Staffordshire magistrates supported the ironmongers. Three cases were taken up, those of John Hall of Caldmore (Walsall), John Turton of West Bromwich and Henry Stone of Walsall. They themselves offered to refrain from "ingrossing iron" for three months and then afterwards they "shall be at liberty as now they do for that the justices found them very reasonable in their answers to the said petition".

The three chapmen named all continued to prosper as ironmongers and to establish families of ironmongers. What is known of their backgrounds confirms the contention of the petitioners that they "had given over the trades wherein they were brought up" to enrich themselves as wholesalers. John Hall's father was probably a smith, John Turton's father a yeoman. Henry Stone's family was well known in Walsall where his predecessors had been burgesses for generations, but there is no evidence that they had been ironmongers.<sup>1</sup>

Both those who supported the "new" chapmen and those who opposed them referred to them carrying goods to London. This is perhaps the element of novelty. The Clerk of Ordnance in 1515 had toured the Midland counties to buy ironware. Now the Midland ironmongers went to London. London was the centre for both the expanding home market and for the overseas market. Only if they could establish themselves in London could Midland ironmongers move from the regional to the national market.

1. Appendix. 2. p 324 below

The Penetration of the London Markets.

The Worshipful London Company of Ironmongers had become alarmed at the numbers of "country larrimen and cutlers and nailers that lie at Blossoms and Maidenhead and other Inns and retail their wares in this city of foreigners"<sup>1</sup>. Various attempts were made to confine the trade to Leadenhall and stop both foreign smiths and foreign ironmongers trading elsewhere in the City. They were unsuccessful for foreign ironmongers kept a warehouse in Leadenhall but continued to trade in other places. Among those against whom action was taken was John Turton presumably of the West Bromwich family. There were further complaints in 1645 against the great abuse of foreigners in bringing their wares of nails, locks and ironware of several sorts to London and the suburbs thereof to sell them there to other foreigners"<sup>2</sup>. The complaints were repeated in 1650 and 1664, but after this the London ironmongers appear to have accepted the situation.<sup>\*</sup>

In spite of the complaints of the London ironmongers the connection between the London market and the Midlands was well established by 1650 when an informed observer said that "all or most of the London ironmongers buy all or most of their nails and petty ironwork either from Birmingham almost an hundred miles from London or at London as brought from thence to be sold there .... all England .. supplied from a single market"<sup>3</sup>.

1. John Nichol Worshipful company of ironmongers (1928) p.201
2. R.E. Leader, Company of cutlers p.20 (1925) London cutlers seized Sheffield and Birmingham knives in 1624.
3. Navy Record Society John Hollond Discourses of the Navy (1896) p.242.

Something of the manner in which these links were established can be seen from the cases of certain Midland ironmongers who had established themselves there before 1660.

Among the earliest to do so was Ambrose Jennings, brother of John Jennings of Birmingham, ironmonger, who from about 1616 "drove a trade of thousands of pounds in divers several sorts of ironware and hand irons which John Jennens bought in the country and sent to Ambrose in London whereby the said Ambrose gained a great estate." So incidentally did John Jennens. When Ambrose died in 1626 a new partnership was entered into between John Jennens and a cousin, Roger Norton.

Each partner put in £1,000 stock and the articles of agreement were revised and renewed at seven yearly intervals.<sup>1</sup>

Francis Symcox of West Bromwich moved to London about 1668 and employed his cousin Richard Turton of the Mill House, West Bromwich as his agent for getting nails made in the Midlands and sending them up to London. Richard Turton got 10s in every ton of iron so made up. The agreement continued for fifteen years. Then Francis Symcox died and the agreement was renewed by his son and successor John Symcox. It only came to an end seven years later because of disagreements between the new broom and the old hand.<sup>2</sup>

1. Harrison W. and Willis G. The Great Jennens case. Sheffield 1879 p.43.  
Ede J. History of Wednesbury p.127
2. Public Record Office C/8/568/107

By 1661 the largest single "plum" in the ironware trade had fallen to the share of a Midland ironmonger. Until the Restoration the Ordnance and Naval supply contracts had been controlled by the London Ironmongers. From 1661 the principal contractor for nails, locks and scrapers needed by the Royal Navy was Robert Foley of Stourbridge, ironmonger.<sup>1</sup> He and his son and successor held these contracts until about 1690 when Robert Foley<sup>2</sup> was displaced by Ambrose Crowley.

Robert Foley remained a Midland Ironmonger. He lived at Stourbridge and conducted his business from his house there as did his son. Like other Midland ironmongers, he maintained the closest possible links with the centres of production. He established a responsible agent in London and himself spent much of his time in Stourbridge and Bristol.<sup>2</sup> The Midland Ironmongers made use of brothers, cousins and in-laws in the Midlands to create a network of committed and financially involved partners and agents. There is no evidence to suggest that these men came to London as a result of marriages and partnerships with London citizens, nor did they seek such alliances when there. It was the London market which drew them rather than London capital.

1. Cal. S.P.D. 1659-60 p.511

2. Palfrey H.E., Foley's of Stourbridge. Transactions of the Worcestershire Archeological Society xxi (1945) See below p.



By 1660 the Midlands had all the features of a fully developed economy based on rural industry. The balance of advantage was seen by contemporaries to be decidedly in favour of the industrial Midlands as opposed to even rich agricultural areas. Yarranton described the flow of raw materials into the Midlands district "where iron is manufactured with ease, cheapness and advantage" and noted that "at Dudley and ten miles round there are more people, and more money returned<sup>than</sup> in all these counties (i.e. Warwickshire, Leicestershire, Northamptonshire and Oxfordshire).<sup>1</sup>

The dual economy of the Midlands was not the attempt of a poor district to eke out an inadequate living by by<sup>y</sup> employments, but the response of a community rich in industrial resources to expanding opportunities for profit.

9

1. Yarranton A. England's Advantage by sea and land (1677) pp.44-5.

From Morden's map of Staffordshire 1695.



Illustration removed for copyright restrictions

From Morden's map of Worcestershire 1695.

Part Two.

The metalworkers. 1660 - 1710.

The smiths. 1660 - 1710

The traditional picture of the life of the domestic worker in the Midlands metal industries is a grim one. It is derived in the main from family memories of the industry in the nineteenth and early twentieth centuries and from the evidence of nineteenth century commissions of enquiry. For the period before 1760 most accounts rely upon a tract of 1713 entitled "An essay to enable the necessitous poor to pay taxes" in which the author declared that the nailers had to work from 4 o'clock on Monday to late on Saturday night to earn three shillings a week.

Taken by itself this is grossly misleading. There is nothing to show whether the author had any knowledge of the trade at first hand and what little is known of his highly speculative proposals to tax the poor does not inspire confidence.

1. No original copy of this work can be found. All modern references are derived from a quotation from it in Bevan, G.P.H. British Manufacturing Industries (1876) Vol. iii p. 31. Search has been made in the British Museum, the Bodleian, the Library of Congress, in local Midland collections.

Richard Baxter, as a minister at Dudley and at Kidderminster, did know the district and people. He saw the life and work of the smiths as at least better than that of the husbandman. He wrote in 1691 "Though the labour of the smiths be hard it is in a dry house and but by short fits; and little in comparison with threshing and reaping, but as nothing in comparison with mowing which constantly pulls forth a man's whole strength. The same I may say of others that work in iron, the nailers and spurriers and sithesmiths and sword makers and all the rest about Dudley and Stourbridge and Brummigam and Walsall and Wednesbury and Wolverhampton and all the country. They live in poverty but not in the husbandman's case. They know their work and pay and have but little further care".<sup>1</sup>

In order to examine the truth of these assertions, and to establish a fuller understanding of the life and work of the smiths at the end of the seventeenth century it is necessary to make use of the only substantial body of evidence relating to domestic life of the workers of the period - namely the probate inventories.<sup>2</sup>

1. Quoted in Court, W.H.B. The Rise of the Midland industries p.67
2. A total of 2,256 inventories and other probate records for the period 1660-1710 have been examined from the twenty parishes of the hardware region. The nature and limitations of this evidence is discussed in appendix.3. p. 312

1. Distribution of the trades within the hardware district.

Analysis of the trades of the men whose estates were registered for probate (Figure 1) shows that 61%<sup>1</sup> were tradesmen, men engaged in manufacture or commerce or in the provision of services.

4. i. e. 61% of the total number of men from the 20 parishes whose occupation is known. About 25% of the total number of probate records do not provide sufficient data to be included in the calculations.

~~39A~~

39A.



FIGURE I.

Distribution of Occupations from Probate Records 1660 - 1710

	Total Examined	No Trade	Total Known	METAL	AGRIC.	GENT.	OTHER.	METAL	AGRIC.	GENT.	OTHER.	% of Total Known.
Aldridge	97	33	64	11	42	2	9	17	65	3	14	
Darlaston	64	13	51	30	6	1	14	58	11	1	27	
Harborne	22	8	14	7	2	4	2	42	14	28	14	
Handsworth	68	14	54	9	32	5	10	12	59	9	18	
Himley	37	10	27	10	11	1	5	37	40	3	18	
Kingswinford	140	41	99	43	36	6	14	43	36	6	14	
Sedgley (Episcopal)	48	18	30	12	9	1	8	39	29	3	26	
Sedgley (Manorial)	67	8	59	33	21	0	5	56	36	0	8	
Tipton	48	7	41	27	9	2	3	66	22	5	7	
Walsall	337	89	248	89	39	18	102	36	16	7	41	
Wednesbury	92	13	79	26	19	4	30	33	24	5	38	
West Bromwich	161	47	114	47	44	6	17	41	39	5	15	
Wolverhampton 2	111	17	94	21	19	11	43	41	20	12	46	
Wolverhampton 2	7	-	7	3	-	2	2	22	20	12	46	
Bilston	14	4	10	2	4	3	1	39	37	9	15	
Wednesfield 2	11	1	10	2	-	3	2	16	40	5	39	
Willenhall 2	11	1	10	3	-	3	2	18	61	9	12	
Belbroughton	37	4	33	13	12	3	5	39	40	9	18	
Bromsgrove	245	76	169	26	68	9	66	18	61	9	12	
Chaddesley Corbett	40	7	33	6	20	3	4	35	38	3	18	
Clent	45	11	34	12	13	3	6	45	33	3	19	
Rowley Regis	89	11	78	35	26	2	15	22	34	6	38	
Dudley	122	27	95	21	32	6	36	21	58	5	16	
Hagley	21	2	19	4	11	1	3	36	46	4	14	
Halesowen	162	43	119	43	55	4	17	39	20	8	33	
Oldswinford	92	43	49	19	10	4	16	39	39	3	44	
Stourbridge	79	18	61	22	10	2	27	36	17	3	44	
	2256	565	1691	576	550	103	462					

Total Metal 576  
 Total Agric. 550  
 Total Gent. 103  
 Total Other 462

(Yeomen, husbandmen, lab. etc.)  
 (All trades not metal)

Total known 1691  
 Total not known 565  
 Overall Total 2256

1. From 1660 - 1699
2. Complete from 1700 - 1710 only.

The great majority of the tradesmen were metal workers. This group accounts for 34% of the total known, the largest single group, marginally even larger than the group engaged in agriculture - yeomen, husbandmen and labourers.

These figures probably reflect fairly accurately in general terms the balance of activities within the community as a whole. Evidence from the Prerogative Court of Canterbury shows that the wealthier part of the community also included a preponderance of men in the metal trades. Although the proportion of gentlemen and wealthy yeomen was larger as is to be expected there was nevertheless a notable proportion of substantial men who were ironmongers and smiths.<sup>1</sup>

1660 - 1700 P.C.C.

Gentlemen and esquires	48	
Agricultural	41	
Professional and other trades	35	
Metal trades	40	of whom 23 were ironmongers.
No trade or status given	<u>30</u>	
		<u>194</u>

This is in marked contrast with the City of Lichfield where metalworkers and ironmongers formed only 3% of the probate records 1660-1688.<sup>2</sup>

1. Based on Index Library. British Record Society Volumes 67,71,77 & 80. (lists of P.C.C. Wills 1671-1700) and J.H. Morris on P.C.C. Wills 1660-1671.

This summary does not include Birmingham where there lived a number of ironmongers operating in the district under discussion.

2. Vaisey D.G. Lichfield inventories Staffordshire Historical Collection Fourth series Vol. 3.

In Worcestershire as a whole the metal workers and ironmongers only accounted for .2%, although the tradesmen and specialists in general were numerous making up 31% of the whole.<sup>1</sup>

The only other provincial area with a comparable concentration of metalworkers was Hallamshire, which included Sheffield. Metalwork provided 43% of a sample of 243 probate inventories from 1695-1729. The proportion was considerably larger in the town of Sheffield in comparison with the surrounding villages.<sup>2</sup>

Some of the Midland villages showed as heavy a concentration as the towns; Tipton and Darlaston in particular showing a higher proportion than Dudley, Stourbridge, or even Walsall. This was mainly due to the large numbers of nailers in those villages, whereas the towns had more skilled metalworkers and also a wider range of other crafts and services.

1. Johnstone W. A study of 1,000 probate records for Worcestershire 1702-1708. Unpublished paper.
2. Hey D. Sheffield and its region 1660-1800 1972. Paper read to the Urban History Conference 1972.

Only four parishes in this group were predominantly agricultural - namely, Aldridge in the north east, Handsworth in the east and Chaddesley Corbett and Hagley in the south west.

The numbers of cases from the individual parishes are sufficient to demonstrate the close association between metalworking and the ten yard seam of coal. The most industrial districts were those where coal was easily obtained, cheaply, and in small quantities as required. The iron increasingly came from a distance and was provided by the ironmongers - the coal the smiths had to provide for themselves.

This connection would be even more apparent if it were possible to distinguish the domicile of metalworkers within those parishes which lay partly on and partly off the exploited part of the coalfield. The only opportunity for making this distinction is for the parish of Sedgley where the parish registers give occupations and hamlets throughout. These show the nailers and locksmiths most common in Coseley, Ettinshall and the Gornals. The scythesmiths on the other hand were all in the south west of the parish.

Figure 2 shows the distribution of the specialisms within the district. Nailers were found throughout the parishes and indeed beyond them although in much lesser numbers. Parishes such as Womborne, Frankley, Bushbury, Kings Norton, Yardley and Northfield which surrounded the principal hardware parishes always had a few nailers. The locksmiths appear in these records as generally spread through the area, but this is misleading. Were the records of Wolverhampton and its chapelries fully available the known preponderance of the trade in that parish would doubtless appear.

Clent had six lockmakers, a large number for a small parish indicating that the trade was also of importance there.

The blacksmiths included a number of country craftsmen. Eighteen of the examples were clearly supplying the needs of agriculture, mending ploughs, making sheephooks and shoeing horses. Four men described as blacksmiths on the other hand were making locks or nails. The remaining cases leave open to doubt whether the blacksmith was an industrial or an agricultural worker.

Two of the trades show a high degree of localisation. The scythesmiths were to be found in the southern part of the area closest to the felden parishes of Worcestershire and Warwickshire and nearest to their principal markets. They were also nearer to the small swift running streams used by the scythe-grinders. The makers of other types of edgetools on the other hand were to be found in the parishes of the Tame valley in the north of the region. Here too, there were many blade mills, though it is probable that many of the edgetool makers used hand powered grindstones.

Handwritten notes or scribbles in the top left corner.



The most localised industry of all was that of the lorrimers or saddlers ironmongers. The making of spurs, bits, saddlery, buckles and other metal articles for harness was almost entirely concentrated in the Borough of Walsall and its Foreign. Only one such worker from outside the Borough and Foreign has been found - a terret maker at Aldridge, and he may not have been producing terrets for harness.<sup>1</sup> This concentration is not only indicative of large scale production for distant markets; it is also indicative of the strength of tradition in determining the location of special trades. The high grade iron ores of Rushall, the availability of coal and early emergence of chapmen and carriers in a Borough, all no doubt played their part in establishing this localised industry in the later Middle Ages. Yet

there does not seem to be any good technical or commercial reason why the trade should be so concentrated at the end of the 17th century. There was, as far as is known, no regulation or urban monopoly of the trade, and the skills involved were basically the same as in other branches such as lockmaking.

Walsall was also the location of the brass and copper trade. Nine probate inventories of brass and copper workers are from Walsall. Two are from Wolverhampton - a figure which might well have been higher were the records of Wolverhampton before 1700 complete.

1. Lichfield Record Office. John Turner. Aldridge April 4th 1699  
(Consistory)



In addition to the main categories of workers - nailers, locksmiths, scythemakers, lorriners and blacksmiths, there were a small number of edgetool makers - almost all in those parishes through which ran the headwaters of the River Tame. Some of these men had blade mills at which they ground "all kinds of tools in the manner of a whitesmith"<sup>1</sup>. Such blade mills were also to be found in the predominantly agricultural parishes which bordered on the hardware region, Bushbury for example.

Only 24 of the probate records belonged to metalworkers producing other types of metal goods. This feature is of considerable significance in view of the great proliferation of specialism which was to develop shortly after 1700.

1. Lichfield Record Office. Thomas Dudley. Tipton.

2. The principal trades - their techniques, tools and organisation.

The manufacturers of iron and other metal goods were by no means an homogeneous group. They produced a wide range of goods involving a wide range of skills. The amount of skill and labour required for particular commodities varied greatly and so did the degree of specialisation and standardisation. These factors in turn influenced the social and economic position of the workmen. They influenced the rewards he could expect, the extent of his independence, and the pattern of social relationships in which he lived and worked.

## Nailing.

Nailing was the least skilled of the iron trades. Basically the smith simply had to cut and heat a length of rod iron, hammering it to the required shape and thickness; point the end; and make the head with a few swift blows of the hammer. The process was endlessly repeated to mass produce a standard article. There was a great variety of types of nails - brads, tacks, spriggs, spikes, dog eared frost nails, sheath nails, sparrables and many more. Each had specifications recognised in the trade. A bundle of rod weighed 60 lbs - that is half a long hundredweight. The rods were 4'6" long and square in section. The nails were described in the trade according to the ratio of the number produced to the weight of iron. Thus a long thousand 1200 nails weighing 4 lbs. were known as four penny or four pundy nails, this type cost 1s 5d per 1,000 to make. The larger nails were called hundred work and were priced by the hundred.

The larger nails were more profitable to the workman than small nails. There was less waste of iron, and fewer blows of the hammer were necessary to work through the bundle of rod. In the nineteenth century the making of large nails continued to be sufficiently profitable to survive as a hand trade while the small nail trade declined much more quickly in the face of machine competition.<sup>1</sup>

However, whether he was making large or small nails the nailer was engaged in work that was mechanical, mindless and repetitious. The handles of some nailers' hammers which survive are evidence of this. The impression of the fingers and thumb is worn so deep into the handle that barely half an inch of wood remains after a lifetime of use - as William Hutton also noticed. The nailer's hammer he recorded "is worn

1. Davies, R.L. History of the handmade nail trade. Unpublished thesis University of Birmingham (1933)  
The trade names for the types of nail go back at least to the early sixteenth century.

into deep hollows fitting the fingers of a dark and plump hand as hard as the Timber it wears".<sup>1</sup>

Nailmaking was a seasonal occupation. Dealers spoke of difficulties in getting nails at harvest time when the nailers were busy with the crops.<sup>2</sup> The agent of William Spencer, writing of the nailers in Yorkshire, described their routine. From March to August clasp nails were made for London, August was harvest time and nails were made. From Autumn to Martinmas flatpoints were made for Virginia and from Martinmas to March sharp points for the Leeward Isles. In March industrial work again stopped as it was ploughing time. There is no reason to suppose that the Midland nailers' annual programme was fundamentally different though the types of nails varied.

1. Hutton. W. History of Birmingham (1780) p.117  
In the metal trades there was no conflict between the "hard hand" of agriculture and the "soft hand" of industry.
2. Sheffield Record Office.  
Spencer Stanhope Mss. 60514. 60.  
10th May 1739 John Darby to W. Spencer.  
8th Oct 1740 Murgatroyd to Spencer 60505. 1.  
also: G.G. Hopkinson The Charcoal Iron Industry in the Sheffield Region 1550 - 1775.  
Hunter Archeological Society Transactions Vol.VIII (1963)p.150

Of all the metal trades the making of nails offered least scope for individual initiative or skill. It is significant that in a number of Midland Parishes nailing was the trade chosen to set the poor on to work in cottage or workhouse.<sup>1</sup>

Nailers bought their iron either from the mills or from the chapmen - at least in theory. In practice the majority of nailers had not sufficient ready money to pay for the iron which was advanced to them. They returned the nails - there were standard allowances for waste - and were paid for their work.

1. As for example at West Bromwich (Lissimore transcripts Poor Law Records West Bromwich Public Library) Warley, Oldswinford (Poor Law Papers W.R.O)

The nailers' workshops were of the simplest. The most important feature was the hearth.

"The hearth or fireplace is a massive <sup>(sic)</sup> of brick, about 2'6" high; the back of the forge is built upright to the ceiling and is enclosed over the fireplace with a hovel which leads into a chimney to carry away the smoke. In the back of the forge against the fireplace is a thick iron plate with a taper pipe fixed therein about 5" long called the tewel into which the nose of the pipe of the bellows is received. ... Right before the hearth back at about 2' distance is the trough filled with water to wet the coals in and thereby increase their force; as also to quench the iron in. Behind the back of the forge is placed the bellows one of whose boards is fixed so that it moves not either upwards or downwards and to the other is fitted a rope or chain or even rod; which rising perpendicularly is fixed to a cross piece called the rocker, which moving on a kind of fulcrum near the middle serves as a handles".<sup>1</sup>

The bellows described were of the more elaborate type called in the inventories a "bellows and rock". Simple hand controlled bellows were more usual. They were valued at about 10s.

The smiths' anvil might be made of either stone or cast iron. The nailers' anvil usually consisted of a circular lump of the local stone.<sup>2</sup> Cast iron anvils were made at the iron mills.<sup>3</sup> They were expensive and probably not in common use.<sup>4</sup>

1. Chambers Cyclopaedia 2nd edition 1741 (original article 1727)  
This type of hearth was common to all the trades.

2. From surviving examples.

3. Hereford Record Office D.E.f. 1-13.

4. Thomas Wilkinson of Dudley, locksmith had "a cast anvil and a steel anvil." Worcestershire Record Office probate Thomas Wilkinson  
30th October 1679.  
There were two anvil makers at Stourbridge.  
Worcestershire Record Office probate Daniel Crowley 3rd July 1701  
John Viccaris 11th June 1701.

In addition to the basic forge, bellows and anvil the nailers had only hammers, bickorn and hardy and shop tools. The shop tools including the bellows were usually valued at only £1. The largest valuation of nailshop tools found is that of James Collier of Tipton whose praisers set down his tools at £5. 1s. 6d.<sup>1</sup> Twenty-six nailers had rod iron in their shops valued as their own property.

The quantities were generally small - half a bundle, one bundle, one quarter, valued at 8s or 9s. The largest quantity recorded was worth £10 but this is exceptional. One nailer willed a bundle of rod iron to his apprentice.<sup>1</sup>

In ten cases nails are also listed as the property of the deceased. Sparrables, tacks are types specifically mentioned. The quantities are small.

1. Lichfield Record Office Probate Consistory James Collier.  
Tipton. Aug. 18th 1685.

### Lockmaking.

Lockmaking, in contrast with nailmaking, enabled at least some of the smiths to exercise great skill and acquire corresponding rewards. The technical principles of the warded lock had been fully developed in the Middle Ages and there was no basic change in the method of manufacture until the end of the eighteenth century when the lever lock was introduced.<sup>1</sup>

There was a great change of types and locks were made of brass as well as iron. Simple padlocks and chest locks were manufactured in quantity and sold in bags of a hundred to the ironmongers who supplied them to the London markets or the Navy. All country retail ironmongers sold small locks for household use costing at most about 6d each, retail. Willenhall was the centre for such "common locks".

However, at the other end of the scale "the greatest excellency of the locksmith's profession" according to Dr. Plot in 1686 "was in the making of locks for doors, wherein the artisans of Wolverhampton are to be preferred above all others". The master-locksmiths made extremely ingenious and elaborate locks, not only in iron but also in brass. These commanded a high price from the lords of large households with plate and goods to protect and numerous servants to control. Plot saw one with chimes in it which was valued at £20.

1. Price G. Fire and Thief proof repositories (1858) p. 195.

Chambers Cyclopaedia 1747 emphasises the "art and delicacy required in the contriving and varying the wards and springs and bolts etc. the spring lock being the most considerable for its frequency and the artistry of its structure".



He was also told by the master workmen of even greater mechanical wonders which they were prepared to perform if the money were forthcoming.<sup>1</sup>

The workmen who produced these elaborately made and finished articles dealt directly with the customers or according as they were "bespoken" by the chapmen. They were prepared to treat with their customers, meet special requirements and return the money or remake the article if the customer were not satisfied.<sup>2</sup> Individual masters achieved a fame which outlived them for the quality and ingenuity of their products.<sup>3</sup> Doubtless some of the claims have lost nothing in the telling. Even so it is evident<sup>that</sup> these men were in a very different position from that of even the most successful nailer. In later years, after the status of the locksmith had deteriorated, the tradition persisted of these master locksmiths who never "doffed the apron" even to go to church, who dealt with their customers direct and who astounded the public with their skills.<sup>4</sup>

1. Plot. R. Staffordshire (1686) p. 375-6.
2. Sheffield Record Office. Spencer Stanhope Mss. 60514.  
Spencer to Murgatroyd April 23rd 1732. 27th June 1733.
3. As for example James Lees of Willehall, Mark Scalliot of Willenhall  
John Wilkes of Birmingham.
4. Price G. Fire and thief proof repositories pp. 878-9  
Timmins S. (ed) Birmingham and the Midland Hardware Trades (1866)  
pp. 80-83, 86-88.

The workshops of the locksmiths contained more numerous and more elaborate tools. Although the ordinary padlock or stocklock required little skill the elaborate ornamental lock could be a valuable addition to a stately home. The variety of skills is reflected in the locksmiths' shops. Some inventories show a workshop not very different from the nailers' with the addition of a vice, file bores and punches. In such cases the valuation is about £2. Others with a larger variety of equipment including tinning pans might total as much as £11 in value. Locks finished and unfinished are found in four inventories. The inventory of William Banes of Sedgley is particularly informative. He had a dozen and a half of chest locks, 6 dozen of bar locks, four dozen and a half of small gate locks, 124 lbs of iron locks not finished, one and half dozen locks stricken off, and 7lbs of wards for locks. His tools included files, sheers, hammers, stamps, bolsters, tongs and scovens, 3 vices 6 bickorns, 2 anvils, a piece of cast iron and 2 pairs of double bellows. In the shop he also had a pair of scales, and stocks, troughs and benches.<sup>1</sup>

1. Roper J.S. Sedgley Inventories. p.45. Inventory of William Banes of Sedgley, locksmith Apr. 1st 1667.

Scythemaking.

Scythemaking was the most complex of all the trades. Special types of scythes were made for different purposes and variants for use in different regions. Reaping hooks, axes, hatchets and bills were also made "to each of which they give their iron a different heat and temper".<sup>1</sup> The scythesmiths were divided into platers and steelers who each in their turn hammered out the blades and welded together layers of iron and steel. Great skill and experience was required to achieve the right balance, weight and proportion in the finished article.<sup>2</sup>

1. Plot R. Staffordshire (1686) p.375

2. Rolt L.T.C. Worcestershire (1949) pp.256-286

Roper J.S. Early North Worcestershire Scythesmiths West  
 Midland Regional Studies Vol.3. 1969.

The unfinished scythes were sent to grinders who worked on a commission basis, grinding the scythes at one shilling per dozen. The grindstones were located in blade mills which were usually waterpowered.<sup>1</sup> They were situated on the small fast flowing streams which abounded in the parishes of Himley and Swindon and "on all the little waters thereabouts".<sup>2</sup> Occasionally the same family owned both scythemaking forge and grinding mill.

The scythesmiths required bar iron and steel. They obtained their iron direct from the ironmasters ordering in quantities of up to 7 tons a year. They obtained their steel from a variety of sources. Flemish steel could be obtained from the London importers and their Midland agents, or from the Foley warehouse at Bewdley.<sup>3</sup> By 1710 there were three "sellers of steel" in Birmingham, "Bates, Tranter and Lyndon".<sup>4</sup> There were also small steel producing furnaces in the neighbourhood. Plot described a cementation furnace at Bromley, Kingswinford in 1686.<sup>5</sup> Ambrose Crowley II had a steel furnace at Stourbridge by at least 1682. This was producing "broad, narrow and rod steel".<sup>6</sup>

The scythe grinders required "~~corks~~" which they obtained from ~~Stratford Fair~~<sup>7</sup> and grindstones which were quarried locally or brought

1. Horse blade mills are mentioned at Cradley (P.R.O. Chancery Hamilton 482/64) and Tipton (Birmingham Reference Library 337226)
2. Plot R. Staffordshire 1686 p. 374
3. Hereford Record Office Foley Mss. D.E.f.
4. Lloyd Mss. Wooton-under-Edge. B57/20. Mr. Kettle was also selling steel for "ready money and finding a good trade" at White Hall Lane, Birmingham.
5. Plot R. Staffordshire 1686 p. 374
6. Birmingham Reference Library 335723 L.  
Lloyd Mss. Wooton-under-Edge. B65/15 (dated 1712)  
Schubert H.S. History of the iron and steel industry p. 326
7. Roper J.S. Early North Worcestershire Scythesmiths West Midland Regional Studies Vol. 3. 1969.

from Derbyshire via Burton-on-Trent.

The scythesmiths' workshops were larger than those of other metalworkers, sometimes containing as many as 8 anvils and 6 bellows. The shop tools were usually valued at about £2 but in one case were put down as worth £35.<sup>1</sup>

The inventories show large numbers of scythes finished and unfinished in the workshops. John Hill of Cradley had 440 score worth £450.<sup>2</sup> When the same workshop was again inventories three years later there were 315 dozen and 7 worth £295, 614 dozen scythes ground and 150 dozen unground worth £649 and 47 dozen "strings" (blanks) worth £28.<sup>3</sup>

The scythesmiths controlled the marketing of their product, their inventories show considerable sums outstanding for "scythes left last year in the country"<sup>4</sup> - the largest such debt being the £204 owing to Nicholas Wheeler of Oldswinford.<sup>5</sup> One of the scythesmiths explained in his will that "the greater part of my estate consists of money in the hands of several chapmen in the country where I have traded and it is somewhat uncertain what part of the same will be recovered".<sup>6</sup>

One parcel of scythes which was made over to the ironmasters by a scythesmith in lieu of a debt he owed them can be traced from Gornal where they were made, being sent to Bewdley and thence by water partly to Bristol and partly to London. The London consignment was warehoused at the Saracens' Head, and sold off in small lots. The Bristol consignment was exported to the new world.<sup>7</sup> The scythes~~was~~<sup>were</sup> more usually sold to the retail ironmongers in the market towns or to the merchant exporters.

1. Richard Raybould of Sedgley. Roper J.S. Sedgley Probate Inventories p. 55.
2. John Hill Cradley Halesowen 12th Feb. 1703/4. Worcester Rec. Office
3. Anne Hill Cradley Halesowen 3rd April 1706. "
4. John Lea Coman Hill Halesowen 29th May 1711."
5. Nicholas Wheeler Oldswinford 5th September 1681. "
6. Michael Raybould 20th Dec. 1694. Kingswinford (£129. 8.) Lich. Rec. Off.
7. Hereford Record Office Foley Mss. D.f.f. 2. D.E.f. 1-13

The making of scythes required much more skill and capital than other trades both in the collection of raw materials and in the production of the goods. It did not therefore lend itself to a "putting out" system. The scythemakers retained all the stages of production in their own hands, and they also marketed the finished product themselves.

Lorrimers and Bucklemakers.

Another group whose special skills provided them with a marketable commodity not readily available elsewhere were the makers of iron parts for harness - bits, stirrups, snaffles, and buckles. The most remarkable feature of this trade - or group of trades - was the extreme degree of specialisation in the stages of production. A spur or snaffle was a more complex article than a nail and the various parts were made by different workmen. Dr. Plot described in detail how four specialists concurred in the making of a spur, and there were in addition many different types of spurs for ladies and gentlemen, for workhorses and pleasure riding. There were at least 7 different types of snaffle - each of which might be turned out with any one of 6 variant types of ends and sides, "which are commonly all made too by different persons though sometimes the same man may make them all himself". Saddle circles and saddle bars were made by the same workmen but saddle plates by another. Plot lists thirteen different types of buckles belonging to pack saddles and hackney saddles all or most of them made by different tradesmen. This by no means exhausts the variety of products and there were in addition 12 further types of buckle "made promiscuously among them". They worked in copper and brass as well as iron and were familiar with a variety of tinning processes to finish different articles.<sup>1</sup>

The extreme specialisation, and also the fact that the trade was almost entirely confined to Walsall and its immediate area argues that they were making their products in huge quantities for a very large market. Like the nailers they were mass producing standard articles.

1. Plot. R. Staffordshire (1686) p. 375-6.

In addition to the bucklemakers making buckles for saddlers' ironmongers there were a few bucklemakers in other parishes, probably making buckles for personal wear.

Both lorrimers and bucklemakers used the same basic tools as the other smiths, although their workshop inventories included files, and were usually valued at £2-£3 rather higher than the workshops of the nailers. In some cases there was in addition to the tools a "tinning pan and tin" to the value of about 10s.



Braziers and Coppersmiths.

One further group of metalworkers needs to be particularised for although their numbers were small before 1700 they were to play a significant role in subsequent years. These were the braziers and coppersmiths.

They were to be found in Walsall and to a less extent in Wolverhampton. Three of the braziers' inventories belonged to members of the Ebb family. A fourth member of this family was a brazier in the North Staffordshire market town of Uttoxeter.<sup>1</sup> Almost all the 14 inventories from this group of workers show them as substantial men with houses of 6 or 7 rooms and with inventories ranging from £30-£163.

They were all occupied in the manufacture of pots and pans and vats and in other articles of domestic use such as chamber pots, candlesticks, and warming pans.

Their inventories do not give details of their tools and equipment except to mention bellows, scales, and "working tools". The braziers and coppersmiths forge was said to be "much less and nothing is burnt on it but charcoal".<sup>2</sup> Materials in the workshops' inventories included "hard and soft brass" copper and copper "scruff" warming pan steels and saucepan handles.<sup>3</sup>

There is no indication of how they obtained the copper and brass. The supposition must be that they obtained it from London merchants. They certainly sold ware in London as well as "in the country". Several also sold goods retail in their own shops.

1. Lichfield Record Office John Ebb Wolverhampton Jan 16 1667/8  
William Ebb Walsall June 27 1684.  
John Ebb Walsall Brazier Oct 2 1709  
Robert Ebb Uttoxeter April 17 1701.
2. Chambers Cyclopaedia 1741 (1727)  
There is no reference to fuel in the inventories.
3. Lichfield Record Office. John Bayley n. d. Wolverhampton 1693.

The goods were mainly produced by casting in moulds. At Walsall the men who cast iron, copper and brass vats were accustomed to "use a great deal of tin which they superinduce over them (the products) to give a better lustre and preserve some of them from rusting, and prevent others of them from giving a taste of the metals to the things boyled in them". Ironwares were cleaned with whey heated and dipped in a mixture of molten tin and yellow rosin. Small brass goods were placed in earthern pots, and heated. Tin and sal ammoniac were then shaken over the objects, which were then immediately dipped in water to clean and preserve the colour. Larger brass vessels were tinned by heating the vessel and then spinkling sal ammoniac in dust over them. Tin was then applied cold, the rod of tin being drawn over the surface of the vessel. In tinning copper the same methods were used but black rosin was used in place of sal ammoniac.<sup>1</sup>

Tinning was also practised by the lorrimers and the locksmiths who laid/<sup>leaf</sup> tin on to the heated articles using rosin and tow or hemp to rub it on and make it adhere to the surface.

1. Plot R. Staffordshire 1686 pp. 378-380

As a Fellow of the Royal Society, Plot was extremely interested in the processes described and attempted to explain the theory of the process. He himself comments that the workmen's knowledge was entirely empiricā. "The matter of fact of which operations viz that the matters are so all the workmen know; but why these materials rather than any other should perform these feats? is a question that has scarce yet been proposed, much less determined". He also noticed that they stored the finished goods and protected them from rust either by using litharge mixed with "oil of spirits" or by burying them in powdered lime.

Only two of the metalworkers' inventories show any kind of machinery other than the bellows rock and the grinding lathe. Thomas Archard, pin maker had separate "working shops and heading shop". In the heading shop he had a "mill block, a drawing block and a heading treddle". These were presumably used for drawing out the wire which formed the pin and fastening round it the tiny twist of wire which formed the head of a seventeenth century pin.<sup>1</sup>

One other item of equipment is suggested by the presence of two "whirlers". Their shop inventories are unhelpful, but their trade was to make "washbowls dishes and plates by using a vertical spindle".<sup>2</sup>

The technical knowledge among the metalworkers at the end of the seventeenth century was evidently basically the same as that handed down from the Middle Ages. On the other hand the range of technical skills among some of the lorrimers, the bucklemakers and the lockmakers included, in addition to skill of hand in forging and filing, skill of judgement in the use of simple chemicals, and artistic skill in the application of decorative lustres, engravings and inlaying.

1. Lichfield Record Office (Peculiar) Thomas Archer Wolverhampton  
Feb, 24th 1707/8

2. Oxford English Dictionary (1825)

Some at least of the skilled workers in these trades were dealing directly with the customers. This must have involved exercising judgments and taking initiatives in such matters as suiting product to customer, arranging prices, collecting debts and anticipating demand in fact exercising entrepreneurial skills even though on the smallest possible scale.

At the same time other smiths - the nailers, the makers of cheap locks and hinges for example - were massproducing for bulk markets. Their raw materials were simple, cheap and few in number. Mass production was rendered possible by the repetitious nature of the processes. Marketing was left entirely in the hands of the ironmonger.

In general in the metal trades the simpler the skills and the fewer the raw materials the greater the separation of the functions of production and marketing.

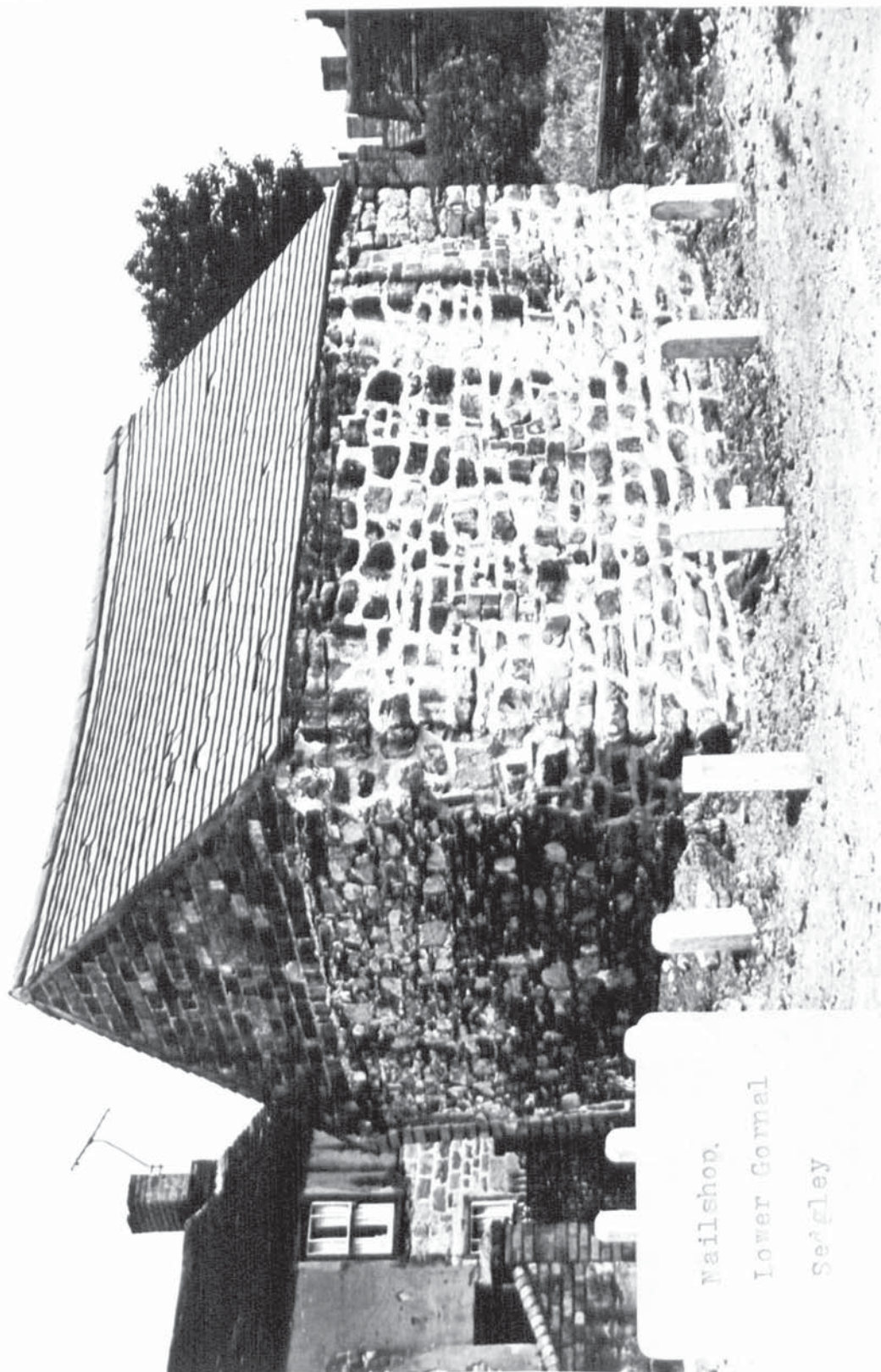
1. e.g. Ambrose Crowley (III) ordered from "Isaac Hill of Camp Hill ..... 12 pair of screw hinges as good as he can ..... 4 pair at 4 shillings per pair for 6 pair, 5 shillings per pair for the other six pair" for his new house in Greenwich.  
Apr. 14th 1704.  
 Lloyd Mss. Wooton-under-Edge. F/15.

Most workshops descended with the cottage from father to eldest son. It was possible to rent workshops. John Adams of Walsall, nailer, for example, paid £1.10s.0d a year for his cottage rent and 10s to a different landlord for his workshop.<sup>1</sup>

Tools, especially bellows, were usually inherited either by the eldest son or in shares between several sons. Bellows could be hired from other smiths who no longer needed them or who had inherited more than they required. Two nailers had bellows hired out at 10s per annum and 6s. 8d respectively.<sup>2</sup> Humphrey Smith, a lorrimer of Walsall went even further. He had five cottages and shops and 18 bellows rented out - the rent from all together being £20 a year.<sup>3</sup> This enterprise is unique in the probate records but may well have been more common than appears.

The family thus provided the capital investment necessary to production without imposing an excessive strain upon its resources. A young man could start in the trade as an independent operator with little or no personal expenditure.

- 1. Lichfield Record Office John Adams. Walsall 1676 (Consistory)
- 2. Lichfield Record Office John Crowley. Handsworth Sept. 27 1699  
(Consistory)
- Lichfield Record Office Richard Tranter. Darlaston June 18 1706  
(Consistory)
- 3. Lichfield Record Office Humphrey Smith Walsall 26 Sept. 1660  
(Consistory)



Nailshop.

Lower Gornal

Sealeley

The simplicity of the units of production gave the industry great flexibility in relation to fluctuations of demand. Any increase in the demand for goods could be met readily except in the busiest agricultural seasons. There must have been in every family a reserve of partly employed women and children who had sufficient knowledge of the simpler processes to be brought in when there was a prospect of selling more goods. Equally tools could lie idle at slack times without deteriorating whilst other sources of income were pursued.

When a smith wished to increase his production on a more permanent footing there was a tendency to build more workshops rather than to increase the size of the existing workshop.<sup>1</sup> Even within families this was true. Wills show father and several adult sons working in contiguous workshops in the same street. The "old" and the "new workshop" standing side by side at the end of the garden.

1. e.g. Worcester Record Office. Richard Shimmell. Dudley. Oct. 16. 1660

The family contribution to prosperity.

The importance of the family unit in the industry was not simply as a unit of production. The solidarity and continuity of the family provided stability and resources which enabled the metalworkers to prosper when opportunity arose, and cushioned the workers to some extent against bad times.

The family provided for continuous recruitment, educated new generations in empirical skills, and dignified labour with a sense of purpose and pride. In 1552 Richard Coles of Stourbridge, a scythemaker, making his will left his "best anvil to the child that is in my wife's womb if it be a boy" .. and "all my takens to rear up my children".<sup>1</sup> It was taken for granted that sons would grow up in their fathers' trades and take over the tools in due course.

The parish registers of Sedgley which give occupations almost continuously from the sixteenth to the nineteenth centuries demonstrate the continuity of families in scythemaking, lockmaking and nailing. Even when a new name intrudes in the lists, it often, upon examination, turns out to be that of a son-in-law or cousin.<sup>2</sup> Members of families are more likely to change their place of residence than their trade.

- 1.. Roper J.S. Stourbridge probate inventories. 1541-1558 (1966)  
Will of Richard Coles Scythemaker. 1552.
2. From transcripts and information from W.S. Barnett who is at present engaged on a reconstitution study of Sedgley Parish register for the Cambridge group for Population History.



The importance of the family in building up the family business and ensuring its continuity is most strikingly demonstrated by the local dynasties of scythesmiths. The Rayboulds of Lower Gornal the Dansers, the Waldrons of Clent, the Hill-Lea family of Bloomers End, Cradley and Badgers of Kingswinford and others constantly recur. They appear in the sixteenth century probate inventories, can be traced as customers of the Foleys partnership of ironmasters in the 17th century, and the Knights ironmaster partnership in the 18th century. In more than one case the head of the family suffered bankruptcy. In other cases the head of the family died prematurely leaving the widow to carry on the business in the interests of her sons. None of these setbacks, however, prevented the businesses from continuing in the same premises, so far as can be determined, and with no apparent loss of prosperity as far as this can be judged from such incidentals as house and land purchase.

Similar family histories can be built up for locksmiths such as the Bullas family of Stourbridge and the Brockhouse family of Oldswinford, or for nailers such as the Raby family of Stourbridge.

Family income and investment.

Manor court rolls and deeds show these families owning small parcels of land on a great variety of tenures, copyhold, leasehold and freehold. The copyhold lands in particular provided a stable tenure and source of income, however small. It was not uncommon for the father to surrender the estate for the use of his eldest son well before his death - especially on the marriage of the young man.<sup>1</sup> There was much buying and selling of small parcels of land by the metalworkers and income from even the smallest holdings was often set aside to make some provision for dependants.

The majority of the inventories show that the metalworkers were engaged to a greater or lesser extent in working this land themselves. There were men described as metalworkers who, nevertheless, evidently worked a substantial farm with numerous cattle, sheep and crops. There were on the other hand those who had only one cow kept on the common and a little hay.

In this the metalworkers of the Midlands were similar to their counterparts in Hallamshire. There "the dual occupation was the norm. The probate inventories of 29 cutlers and 14 nailers from Ecclesfield parish have a median average of 40% of their personal estate invested in farming ....similarly .... the Norton scythesmiths and Stannington cutlers and grinders .... Few of them were without any farmstock at all and many were able to rise to yeoman level".<sup>2</sup>

1. As for example the case of the Nock family, Whitesmiths of Tipton. In 1684 Thomas Nock granted his lands in Spon Lane, West Bromwich to his son. In return his son arranged an annuity of £11 for his father chargeable on these lands. Thomas died 4 years later.  
2. Hey David. Sheffield and its region 1660-1800 Paper read to the Urban History conference 1972. p.7.

There are noticeable <sup>u</sup> variations between the trades.

Trade	total no inventories	husbandry	no husbandry
nailers	298	184	114
locksmiths	42	15	27
bucklemakers	10	7	3
lorrimers	20	2	18
scythesmiths	26	19	7
scythe-grinders	17	9	8
blacksmiths.	21	9	12
	434	245	189

The inventories of the majority of the scythesmiths show them possessing numbers of cattle of all kinds and engaged in arable farming on a considerable scale. This was also the case with the scythe-grinders. The making of scythes was concentrated in those parts of the hardware district, where agriculture was more profitable in itself and where there was readiest access to agricultural markets.

Similarly the nailers in the villages and hamlets usually practised husbandry, though on a much more modest scale than the scythesmiths. It was unusual to find a nailer with more than a few cattle and sheep.

The inventories tend to under record agricultural activities especially those connected with arable. No inventory recorded how much a man made from gardening, labouring and harvest work. A man who had a trade tended to be called by it in official documents however little he practised it. Thus the figures given above showing metalworkers with no husbandry certainly exaggerate the proportions of landless men. Many of the inventories with no husbandry are low in total value. Some are obviously or even explicitly the inventories of "men very stricken in years" old men keeping their tools, perhaps

using them occasionally. However, there were men who had little or no land, notably the lorrimers of Walsall. Only two of their inventories gave any indication of husbandry and it seems probable that in this Borough the number of persons obtaining their living entirely from metalworking may have been greater than in the countryside.<sup>1</sup> Many of the locksmiths' inventories record no husbandry. These, too, were mainly living in the towns, though some of the locksmiths of Wednesfield and the open land between Wolverhampton and Willenhall had substantial property in cattle and crops.

For those with even a little land in the family there was increasing opportunity for mortgaging it and greater security for the mortgagee.<sup>2</sup> Thomas Flavell of Walsall, bucklemaker, raised a mortgage of £20 from his brother-in-law on one cottage and garden and four days work of land in the leet fields of Darlaston. In his will he urged his sons to work together to pay off the mortgage so that they could inherit the land free of incumbrance.<sup>3</sup>

1. The Borough of Walsall was only 95 acres and in 1666 returned 645 houses taxed and untaxed for Hearth money.
2. Anderson B.L. Provincial aspects of the financial revolution. Business History Vol XI No. 1. Jan 1969 p. 14.
3. Lichfield Record Office. Thomas Flavell Darlaston Feb. 13 1688/9.

Between 1700 and 1702 the Brockhouse family of Stourbridge, locksmiths, were able to raise £218 in three separate mortgages on a tenement consisting of a messuage and lands which they held in fee simple, and on two houses converted into shops in the main street of Stourbridge. At least one of these mortgages was obtained by "applying to Edward Dyson, attorney at Stourbridge" who arranged the mortgage for them.<sup>1</sup>

Numerous examples could be cited from local collections of deeds of title of nailers and other metalworkers raising mortgages of £50 or less upon small holdings of land, upon houses and shops.

1. Worcestershire Record Office. Probate. John Brockhouse  
10th March 1702/3  
Public Record Office Chancery Mitford 366/13  
Hamilton 653/74.

It was not uncommon for Midland metalworkers to derive additional income from renting out cottages and workshops. The probate records show twenty-two such cases. Four of them were nailers, seven lorrimers of Walsall.

Roger Clewley of Walsall, spurrier, rented out 6 houses - the largest number found - at Walsall all with "shops and backsides". Roger Clewley was not a poor man - he had a house of 6 hearths himself and had been Mayor of Walsall in 1662.<sup>1</sup>

The renting out of cottages was not confined to the wealthier metalworkers. Both John Lucas of Walsall and John Winchurst of Dudley had personal estates well under £3 yet each had a second cottage rented out. Such assets may well have been acquired by inheritance.<sup>2</sup>

The tenants of such cottages were often relatives of the owner especially sons and sons-in-law. The wills show many cases of the rents from such properties being set aside to provide for the widow or daughters. In every generation the family provided the resources from which the capital required for carrying on trade could be found. What resources there were were kept within the family. The overwhelming majority of bequests were to members of the deceased's family. It is very rare to find bequests to charity among the

1. Lichfield Record Office. Roger Clewley. Walsall 1671 (Consistory) Homeshaw. E.J. Corporation and Borough of Walsall (1960) pp. 45,46,53.  
Historical Collections for Staffordshire. 1923. p.142.  
2. Lichfield Record Office. ~~John Lucas. He was removed from office for refusing the Oath of Allegiance and Supremacy.~~  
John Lucas. Walsall. 1675 (Consistory).  
Worcestershire Record Office. John Winchurst. Dudley 29 May 1701.

metalworkers' wills. There are a handful of examples of metalworkers leaving 40 shillings or so to the poor of their parish.<sup>1</sup>

When the family did manage to accumulate a little surplus from its varied resources they did not allow it to remain unproductive.

1. e. g. Worcestershire Record Office. Thomas Pitt. Dudley  
20 shillings to the poor.  
Staffordshire Record Office. Richard Hawkes of Wednesbury  
40 shillings to the poor.  
John Richards. Wednesbury. 10 shillings to the poor of  
Wednesbury ' to be distributed 12d a day after morning  
prayer' and 5 shillings to the minister for a sermon.  
March 30th 1705.

Money and Investment.

Very little money was kept in the houses in cash. The praisers usually listed clothes and money together at a single figure. Of 149 metalworkers with cash 134 had less than £5 and of these 68 had less than £2. One nailer had £120, and a locksmith had £40 (but large sums are very uncommon). The locksmiths showed slightly larger amounts than the nailers a larger proportion of them showing clothes and cash valued between £2 and £5.<sup>1</sup> At the manorial court of Sedgley 16 out of 17 nailers had money and clothes the total value being £29.9.4d. Of the remaining 50 inventories 34 show sums for money and clothes amounting to a total of £137.7.4d.<sup>2</sup>

Money was kept in circulation and there was a complex and elaborate network of credit among neighbours and relatives. This was not a recent development but the inevitable outcome in tightly knit small communities where there was often a shortage of coin.

1. Only 24 inventories show more than £5 and 7 of these were scythesmiths or scythe-grinders.
2. Roper J. Sedgley Probate Inventories. (1953) *passim*. At Wednesbury A.J. Bartley allowed 30 shillings for clothes. A nailer's hat cost 5s. Another nailer had "dimity drawers" for best wear. When separate valuations for clothes were given they tended to be given in round figures of £2 or £2.10.0d. Large sums are found in the inventories of some scythesmiths e.g. Richard Raybould of Sedgley (Roper *op.cit.* p. 55)



At Wednesbury "spare cash was almost invariably lent out in the few cases where a large amount of money was left in the house most of it may have been recently repaid by borrowers".<sup>1</sup>

The moneys owing to the deceased were not usually particularised in detail. In this respect practice seems to have differed from that of the 16th century to judge from published inventories from various parts of the country. The inventories of the metalworkers give only the totals with at most a few qualifying words. Even in the rare cases where names of the debtors are given there is in indication of where they lived.

About one third of the metalworkers' inventories record debts owing to the deceased and these formed a considerable proportion of the total valuations.<sup>2</sup>

1. Bartley A.J. Social and Economic Development of Wednesbury.  
(London 1967) op.cit. p.269.
2. "Debts" in the inventories almost invariably meant debts owing to the deceased. In the few cases where the deceased's debts to others are mentioned they are headed "what he oweth" or with some similar phrase. Any doubtful cases have been omitted from the calculations which follow.

	No.	Debts in Invs.	%	Tot. val. of Invs.	Value of "Debts" of all sorts.	%	Without "Debts"
Nailers	298	89	29	£4701. 0. 0	£1746. 1. 5.	37	209
Locksmiths	42	11	23	774. 15. 3.	241. 5. 0.	31	31
Lorrimers	20	7	35	156. 3. 1.	56. 12. 10.	36	3
Bucklenakers	10	3	30	122. 19. 1.	61. 3. 10.	49	7
Blacksmiths	21	11	52	1466. 17. 8.	679. 1. 8.	46	10
Scythesmiths	26	15	57	4309. 1. 10.	2504. 12. 5.	58	11
Scythe-grinders.	17	5	39	185. 15. 6.	60. 14. 10.	32	12
<b>TOTALS</b>	<b>434</b>	<b>141</b>	<b>32</b>	<b>11716. 12. 5.</b>	<b>5349. 12. 0.</b>	<b>45</b>	<b>283</b>

The amount outstanding owing to the testators amounted to 45% of their combined estates - a percentage which represents a high level of investment even when account is taken of the uncertainty of recovery of some of the debts.

The Sheffield region shows a similar pattern. The proportion owing to 14 Ecclesfield cutlers was 45% that owing to the 7 nailers 62%.<sup>1</sup>

1. This latter very high figure does not include the one extraordinary case of a nailer with nearly £2,000 of personal estate, of which "debts" amounted to £1,740.  
Hey D. Sheffield and its Region 1660-1800 Paper read to the Urban History Conference 1972.

The debts took many forms and by no means all the debts recorded represented investment of money for profit.

The scythemakers had large debts outstanding which were payments due for scythes delivered - £204 in one case.<sup>1</sup> Some of the blacksmiths who were also dealing directly with the public had debts recorded in their shop book for repairs, shoeing and other services performed. Some of the debts were unpaid legacies. Some were outstanding payments for work done on the land or for fodder.

The only really detailed list of debts among the metalworkers' inventories was that of John Tunkes of Wednesbury a nailer.<sup>2</sup> 73 persons owed him a total of £89.10.3d. His total inventory was valued at £139.6.9d. The list was under two headings "odd debts" and "book debts". He had the large sum of £8.10.0d in his purse.

The sums lent ranged from 8d to £12.19.0d. 69 of these sums were lent to men and women who can with reasonable confidence be identified as neighbours, nailers and others from Wednesbury and West Bromwich, but no addresses are given so that there can be no certainty how far his activities spread.<sup>3</sup> These lendings of small irregular sums suggest that these were sums owing for work done, goods supplied or temporary accommodation to meet a neighbour's specific need.

1. Worcestershire Record Office. Nicholas Wheeler. Oldswinford  
5th Sept. 1681.
2. Lichfield Record Office. John Tunkes Wednesbury 1st May 1674.
3. Two other inventories giving the addresses of the persons owing the deceased money show that all of them lived in Dudley, Birmingham, Sedgley etc.  
Lichfield Record Office. Thomas Skett Gornal 1695.  
Roper J.S. Sedgley Inventories p.96 Thomas Hartill. Gornal Sedgley.

The Midland metalworkers were increasingly able to find ways of investing their small stock of money. Direct lendings and borrowings on a purely personal basis of trust were very common, but in addition borrowing on "speciality" was readily available. The legal forms of the different types of speciality were set out for chapmen and tradesmen to copy in the cheapest of circulating chapbooks.<sup>1</sup>

1. British Museum. Chapbooks from about 1660 especially Swallow's Almanack and Fly's Almanack.

It is probable that Midland metalworkers were more likely to have "debts" on speciality bills and bonds than other tradesmen. The figures for Worcestershire are as follows:-<sup>1</sup>

	Total	With Investments	%	% Invested
Gentry	58	18	31	21
Yeomen	301	66	22	17
Husbandmen	100	26	26	16
Labourers	25	6	24	18
Specialists <sup>2.</sup>	312	43	14	14
Widows	168	42	27	27
Spinsters.	36	12	33	35
	<u>1000</u>	<u>213</u>	<u>21</u>	

The proportion of Midlands metalworkers with bills, bonds and specialities is difficult to determine since in many inventories all such assets are added to other types of outstanding monies under some such heading as "debts with and without speciality" etc. In the case of twenty Midland nailers for whom bills, bonds and specialities are clearly distinguished the proportion of their personal estate invested in this way is very high namely 42%. The values of individual bills and bonds vary from £2 to £83.<sup>3</sup>

1. Based on figures communicated by Dr. W. Johnstone. He included bills, bonds, notes of credits and mortgages in this analysis of 1000 Worcestershire inventories of 1702-8.
2. i.e. tradesmen, retailers and service occupations. One retail ironmonger and 22 metalworkers are included.
3. Total personal estate £1,018.19.7d, total in bills and bonds etc. £403. 2. 10d.

At Wednesbury "21% of the yeomen's inventories was used or available for money lending purposes, but the percentage of the trading and industrial inventory holders was 48%. Yeomen tended to invest their savings in their farm stock, whereas others let out their excess wealth."<sup>1</sup>

1. Bartley A.J. Social and Economic History of Wednesbury London M.A. Thesis 1967. p.272.

The use of at least one bond for a specifically industrial purpose is particularised in the will of Thomas Payton. Among other obligations John Payton the elder was required to build a nail shop on the testator's land, carry the stone and straw for making it and pay for the materials. In return he was to receive a certain bond then in the hands of the testator's son-in-law, for whom the nail shop was to be built.<sup>1</sup>

Some of the money was invested in mortgages. These were much less frequently mentioned than bills and bonds and it is possible that the metal workers more frequently found themselves in the position of mortgagee rather than mortgagor.

1. Worcester Record Office. Thomas Payton Senior. Dudley 5th May 1670.

### 3. Standard of Domestic Comfort.

It is evident that some at least of the metalworkers had considerable resources, and a variety of opportunities of increasing them. It remains to be seen how successful they were as a group and how the resources were diffused through the group. Probate inventories do not provide information concerning the "wealth" of testators but they do indicate something of the standard of comfort in which they lived.

The average value of the inventories of the 149 men of all ranks and occupations from North Worcestershire parishes whose estates were proved 1669-1775 was £84. 3. 6d.<sup>1</sup>

By the first decade of the eighteenth century the average valuation from Worcestershire as a whole was much higher than this - approximately £170. These two figures provide a background against which the metalworkers can be evaluated.

1. These averages include the estates of 33 persons with inventories over £100 there are 17 yeomen, 4 husbandmen, a wheelwright and a baker in this category as well as a nailer and two locksmiths. The two largest inventories included in this group amounted to £745 and £502, both those of gentlemen.



The average of all the 434 metalworkers' inventories between 1660 and 1710 was approximately £68 thus showing them to be not markedly inferior to their neighbours in personal estate. This figure, however, conceals wide variations between the trades.

The averages of the total valuations of the metalworkers' inventories are as follows:

	<u>No. of Cases</u>	<u>£. s. d.</u>
Nailers	298	38. 12. 5.
Locksmiths	42	46. 19. 1.
Lorrimers	20	28. 7. 3.
Bucklemakers	10	25. 19. 1.
Blacksmiths	20	80. 10. 0.
Scythesmiths	26	212. 4. 3.
Scythe-grinders	17	49. 6. 1.

The scythesmiths were evidently a group apart with personal estate more highly valued than any other class of metalworker. They were closely comparable to the yeomen and overlapping many of the lesser gentry.<sup>1</sup> The scythesmith's large valuations arise partly from considerable sums set down for stock in trade and trade debts outstanding and partly to their higher valuations for agricultural goods.

Tradesmen who worked mainly in towns such as locksmiths and lorrimers had lower valuations without necessarily having a lower standard of living.<sup>2</sup>

1. Yeomen. 301 inventories (1702-1708) average value £180. 3. 3d.
2. Similarly the average valuation at Lichfield was only £79 despite the large numbers of gentry, clergy and professional men and retailers in this provincial centre of culture. Vaisey D.G. Lichfield Wills and Inventories Staffordshire Historical Collections 4th Series Volume 5.

Figures for the metalworkers of the Hallamshire district show men of much the same value of personal estate. 13 nailers of Ecclesfield had goods valued on average £34.0.4d and 29 cutlers from the same industrial parish averaged £35.12.0d. In both Hallamshire and the Midlands the metalworkers' inventories came between those of the labourers and the husbandmen.<sup>1</sup>

1. Hey D.C. A dual economy in South Yorkshire Agricultural History Review Vol. xvii 1969 p.108.
- Johnstone W. 25 labourers (1702-8) average £19.18.5d.  
100 husbandmen (1702-8) average £86.11.10d.
- Hey D.C. husbandmen 1650-1750 average £91.19.6d.

More significant than the average size of inventory was the range of valuations found among men of similar trades. G.M. Kenyon, in his study of a Sussex market town, has emphasised this and also drawn attention to the great range of valuations of the properties of husbandmen and yeomen, and shown how these categories overlapped. The same was true of the metalworkers.

	Nailers	Locks	Buckles	Lorrimers	S.Sm.	Ss.G.	Blks.	Total
£10 & under	41	8	1	5	1	-	1	57
£20 & under	76	9	4	7	4	1	4	105
£30 & under	55	6	2	3	1	4	2	73
£40 & ynder	39	3	2	1	1	5	3	54
£50 & under	30	3	-	2	-	3	-	38
£100 & under	47	7	1	1	5	2	4	67
£200 & under	10	6	-	1	4	2	5	28
£300 & under	-	-	-	-	2	-	-	2
£300 plus	-	-	-	-	8	-	-	8
Totals	298	42	10	20	26	17	19	432

The smallest valuation/<sup>is that</sup> given for 19 shillings for a Dudley nailer. However, it was the bucklemakers and the saddlers' ironmongers of Walsall who were most likely to show only a small valuation. At the other extreme, leaving aside the scythemakers, it was very unusual for a metalworker to have property worth more than £100 listed. The great majority in all trades fell into the category between £10 and £50.<sup>1</sup>

1. The range of valuations for Ecclesfield Yorkshire are as follows:  
 Nailers £14. 16. 6d. to £1,925.0.0d.  
 Cutlers 2. 2. 6d. to 278.6.10d.  
 Hey D.G. op. cit. p.116.

In this they were closely comparable to their neighbours in the area.

At Wednesbury the general pattern was as follows:

under £10	3 yeomen	3 colliers	5 nailers	2 retailers	12 others.
under £50	12 yeomen	6 colliers	17 nailers	7 retailers	24 others.
under £100	8 yeomen	1 collier	2 nailers	2 retailers	4 others
over £100	10 yeomen		4 nailers	4 retailers <sup>1</sup>	4 others

The surviving inventories of nailers are sufficiently numerous to analyse by parish, and there is some indication that there was a regional variation in the wealth of nailers within the area.

1. A.J. Bartley. Social and Economic Development of Wednesbury 1650-1750. M.A. London Thesis 1967.

Valuations of Nailers' Goods.

<u>Parish</u>	<u>Numbers of Inventories.</u>	<u>average value</u>		
		<u>£.</u>	<u>s.</u>	<u>d.</u>
Kingswinford	21	62.	5.	10
Aldridge	6	53.	0.	5
Sedgley	25	53.	10.	3
Tipton	19	50.	2.	10
Wednesbury	15	43.	19.	3
Halesowen	31	42.	17.	6
Rowley Regis	41	37.	15.	3
Himley	3	37.	12.	3
Handsworth	4	37.	8.	5
Darlaston	20	37.	0.	0
Harborne	2	31.	17.	5
Bromsgrove	12	30.	12.	8
West Bromwich	36	30.	18.	5
Oldswinford	12	26.	7.	8
Dudley	25	26.	11.	8
Walsall	14	21.	7.	6
Bilston	1	20.	1.	6
Stourbridge	3	16.	9.	1
Hagley	1	16.	1.	3
Belbroughton	4	13.	10.	0
Clent	1	13.	17.	11
Willenhall	2	7.	17.	6

Generally speaking the largest valuations for nailers were in the more rural areas where they combined nailing with more agriculture. They are also associated with the parishes where coal was most readily obtainable. The emergent towns on the whole contained fewer and poorer nailers.<sup>1</sup> The valuations of estates offer at best a very uncertain guide to a man's prosperity. The details given in the inventories concerning their houses and furniture, while equally uncertain as statistics, do make it possible to reconstruct something of the metalworkers' standard of comfort.

1. The Walsall and Dudley totals are inflated by nailers in the Foreign - e.g. at Harden, Shelfield and Bloxwich. However, Dudley town did retain nailing longer than other towns since the type of nail specialised in there was the large spike nail.

4. Houses.

The metalworkers' houses do not appear to have been different from the usual Midland house in the seventeenth century<sup>1</sup> - certainly not inferior in any marked degree. The houses were usually two storeys with two rooms "over". Stairs were mentioned sufficiently often, although there was no particular reason why praisers should include them.

The storeyed porch or entry appeared occasionally as it had done in the Midlands since the early seventeenth century. The Midlands was by the end of the seventeenth century a little old fashioned in that many parlours still continued to be used as bedrooms, and in this and in the continuing use of the term "hall house" the metalworkers followed the pattern of the north of England rather than that of the south.

The buttery was frequently included as a living room either instead of, or in addition to, the kitchen or the hall house. Other service rooms such as the dairies and cheese chambers were not in any sense living rooms and have not been counted as such.

The great majority of the houses were of four or 5 rooms. At Sedgley Manor the average for all trades and occupations is 5 rooms and

1. M. Barley. English Farm house and cottage (1961) pp.153-7 and 203-245.
- Skipp V.H. Forest of Arden 1530-1649 Land Church and People. ed. J. Thirsk pp.102.
- Peters J.E.C. Development of Farm Buildings in West Staffordshire. (1969) pp.3-9

for the metalworkers 4 to 5 rooms.<sup>1</sup> At Wednesbury 62% of the houses for which rooms are listed had four rooms or less, 26% had 5 or 6 rooms, 12% had 7 rooms or over.<sup>2</sup> This is slightly lower than Steers figures for Essex 1553-1749 where he found that most people lived in houses of 6-8 rooms.<sup>3</sup> At Petworth the most usual size of house was 6 to 8 rooms.<sup>4</sup>

The metalworkers' houses were thus only slightly smaller than the general average for the period.<sup>5</sup> It is however, noticeable that there are very few large houses; only 4 having above 8 rooms. The number of houses with 2 rooms or less would no doubt have been much increased had it been possible to include the homes of those who were too poor to have inventories. Walsall houses tended to be slightly smaller and more urban in type.

1. Inventories transcribed by J.S. Roper Probate Inventories of Sedgley.
2. A.J. Bartley Social and Economic Development of Wednesbury 1650-1750  
M.A. London Thesis 1967 p.230-233.
3. F. Steer. Farm and Cottage Inventories of Mid Essex (1950) p.8-9
4. G.H. Kenyon. Petworth Town and trades Sussex Archeological Society  
Vol.96 p.54. 55% of the tradesmen of Petworth had 5 or 6 rooms.
5. The average for all classes in the Forest of Arden was 4.9  
(1530-69) 5.5 (1570-1609) and 6.7 (1609-1649)  
V.H. Skipp. Forest of Arden 1530-1649 Land Church and People  
ed. J. Thirsk pp.102-4.

Most of the houses appear to have been "whole houses". The repeatedly mentioned pattern of Hall-house, Parlour, Kitchen or Buttery Chamber over Hall, Chamber over Parlour suggests a compact dwelling. The fuller inventories show the barn, outhouses and gardens. The workshops were usually separate from the house in the garden at the back. There are only 6 references to a "chamber over the shop" 2 in Walsall, 2 in Bromsgrove, 1 in Stourbridge and 1 in Chaddesley Corbett. The wills occasionally made quite explicit reference to the shop as separate from the house, and the inventories imply that it was an outhouse by listing its contents separately and after both the rooms and the generalised items of domestic goods (lines, pewter and plate) had been dealt with. Cellars were rare.

The question still arises how many people lived in these houses. There were usually beds in every room except the kitchen and hall-house. Two beds in a room occurred fairly frequently but more were extremely unusual. Unequivocal references to multioccupancy are very few indeed. In four wills the testator directed that his house was to be divided at his death. Six inventories suggest a divided house. Two testators were themselves lodgers. These scattered references are in contrast with the evidence of multioccupancy in Lichfield, where the citizens shared large rambling houses.<sup>1</sup>

1. D.G. Vaisey. Probate Records of Lichfield Historical Collections for Staffs. Fourth series. Volume 5 p.23-4.



The domestic furnishing of the metalworkers' houses did not differ in any significant manner from houses of comparable persons in other parts of the country.<sup>1</sup> They were comfortably and fully furnished, but the newer luxury items were appearing only slowly. Looking glasses, pictures and maps are found. Domestic crockery was coming into use Burslem ware, the local Wednesbury ware, the new whiteware. Clocks were still a rarity though one nailer had a sideline in mending them.

1. A.J. Bartlett Economic and Social Development of Wednesbury  
op. cit. pp.
- D.G. Vaisey Lichfield Inventories op. cit. pp. 26-36.
- F.W. Steer. Farm and Cottage Inventories of Mid Essex (1950)  
pp. 8-31.
- M. Barley English Farm house and cottage (1961) pp. 283-287

The evidence reveals the metalworkers as a group of people of many different levels of skill and of many different levels of social success. While no doubt the probate records concern the more prosperous among the tradesmen they do emphasise that a considerable degree of comfort and a margin of profit were attainable.

Many of these men were extremely alert to take advantage of the increasing demand for their products. Very little capital was needed, money could be raised from friends and neighbours, failure in one direction could be compensated for by success in another. There was a reserve of partly employed labour always available. The nailers, lock-makers and others could not have reached their markets without the commercial capitalist but enterprise and initiative were not confined to the ironmongers. The manufacturers too could show enterprise by investing in cottages and workshops, hiring out his bellows when not in use, undertaking tiny mortgages, investing in bills and bonds, not all of which were "varry desperate".

Although changes were in progress the metalworkers still lived in basically rural societies. The towns of Walsall, Dudley, Bromsgrove, Stourbridge and Wolverhampton were taking on the aspect of industrial towns with small houses and workshops beginning to compete for space, but the overwhelming majority of the ironworkers lived in close relationship with agriculture both in their own daily lives, and in terms of the economic balance of their communities.

A large measure of social independence and prosperity could exist side by side with a high degree of economic dependence on the merchant ironmongers. An endless variety of social circumstances could obtain when men drew their income from so many different sources. They owned their tools and their homes and they regulated their days' work. That many were straitened from time to time when work was slack there is no doubt. That many who do not appear in these records lived permanently on the edge of want is beyond question. This we have always known. The

probate inventories enable us to add the other side to the picture, and to show not only a few leaders, but a whole range of people responding to the profit motive.

Part Three.

The supply of iron to the Midlands.

1660 - 1760.

The supply of iron to the Midlands hardware trade.

In 1737 Abraham Spooner, a Birmingham ironmonger and ironmaster was called upon to give evidence to the House of Commons concerning the state of the iron trade. Among other matters, he gave his opinion that 9,000 tons of iron was being consumed annually in the region ten miles round Birmingham. Of this he declared that 6,900 tons were of English iron and the remainder imported iron.<sup>1</sup> Clearly this is mere subjective guesswork. However, in the absence of more objective evidence it is not without interest and deserves consideration.

It is clear from the context that although trade was bad in 1737 Abraham Spooner was speaking about normal trade years. Secondly, his estimates do not appear to be excessively high. A correspondent of Aris Birmingham Gazette in 1756 declared that "little less then one third part of all the iron that is made and imported into England is worked up within the compass of six miles of Dudley".<sup>2</sup> This would be considerably larger than Spooner's estimate. The latter, however, receives some confirmation from the estimate made in 1787 by the antiquary Thomas Nash who spoke in general terms of 10,000 tons being consumed annually in the area by that date.<sup>3</sup>

1. House of Commons Journals. Vol.xxii p.851.
2. Aris Birmingham Gazette. December 23rd 1754.
3. Nash T. History of Worcestershire (1787) Vol.II  
Corrections and additions p.5.

1. The supply of home produced iron.

A comparison of these vague contemporary generalisations with the evidence from some of the ironworks themselves suggests that contemporaries did not over-estimate the total amount consumed.

This is clear even from the admittedly incomplete and unsatisfactory lists of furnaces and forges. The 41 forges listed in 1717 (list A) in the four counties nearest to the hardware district Shropshire, Staffordshire, Warwickshire and Worcestershire was given as 5,930 tons. In the 1750 "list C" the number of forges has been reduced to 28 but the total output has increased to 6,910 tons.<sup>1</sup> Dr. R. Pelham, working also from the forge lists, took an area 25 miles on either side of the River Severn which he denominated the West Midlands area and showed that this district, closely associated with the Midland hardware district, was producing 67% of the total pig iron production in England and Wales and 69% of the total production of bar iron.<sup>2</sup>

The ironworks accounts of the Foley family make it possible to establish much more directly and conclusively the links between the Midland smiths and the forges of the Severn Valley.

1. Hulme. E.W. Statistical History of the iron trade Trans. Newcomen E.W. Society vol.9. 1928 - 9 p.323.

	1717 LIST A		1750 LIST C	
	FORGES	OUTPUT	FORGES	OUTPUT
Shropshire	15	2090	12	2260
Staffordshire	13	1700	10	1990
Warwickshire	5	520	1	300
Worcestershire	8	1620	5	2360
TOTAL	41	5930	28	6910

2. Pelham R. The West Midland iron industry and the American market in the 18th century University of Birmingham Historical Journal Vol. II no. 2. p.150.

A Worcestershire ironmaster described how "the greatest part of the Forest of Dean sow iron is sent up Severn to the forges in Worcestershire, Shropshire, Staffordshire, Warwickshire and Cheshire and there it is made into bar iron, and because of its kind and gentle nature to work it is now at Stourbridge, Dudley, Wolverhampton, Sedgley, Walsall, and Birmingham bent, wrought, and manufactured, into all small commodities and diffused all England over and thereby a great trade made of it, and when manufactured into most parts of the world."<sup>1</sup>

By 1672 Paul Foley,<sup>2</sup> had built up a network of furnaces and forges in the Forest of Dean which was by then producing more than 1,500 tons of pig iron a year, two thirds of which was being sent to his brother Philip Foley for the Stour Valley works namely 2 furnaces 9 forges and a slitting mill. This represented 40% of the total consumption of pig iron in the Stour mills. The remaining 60% was produced at the Midland furnaces or bought in from other producers.

1. Yarranton A. England's Improvement by sea and land 1677. p.44-5, 57
2. As there will be frequent occasion to refer to members of the Foley family in ensuing chapters the following summary is given:
 

Richard Foley	1588-1657	founder of family, holder of numerous ironworks including Hyde slitting mill.
Thomas Foley	1617-1677	much extended the network of mills supplied cannon to the Navy. <i>son of Richard.</i>
Robert Foley	1627-1677	brother of Thomas. Ironmonger of Stourbridge.
Paul Foley	1650-1699	son of Thomas. Ironmaster. Partner of Ironworks at their fullest extension. Speaker of the House of Commons. Of Stoke Edith Herefordshire.
Philip Foley	1653-1716	brother of Paul, partner in ironworks. Of Prestwood, Staffordshire.



Illustration removed for copyright restrictions

*Movement of iron into the Midlands.  
(after D. L. C. Johnson.)*

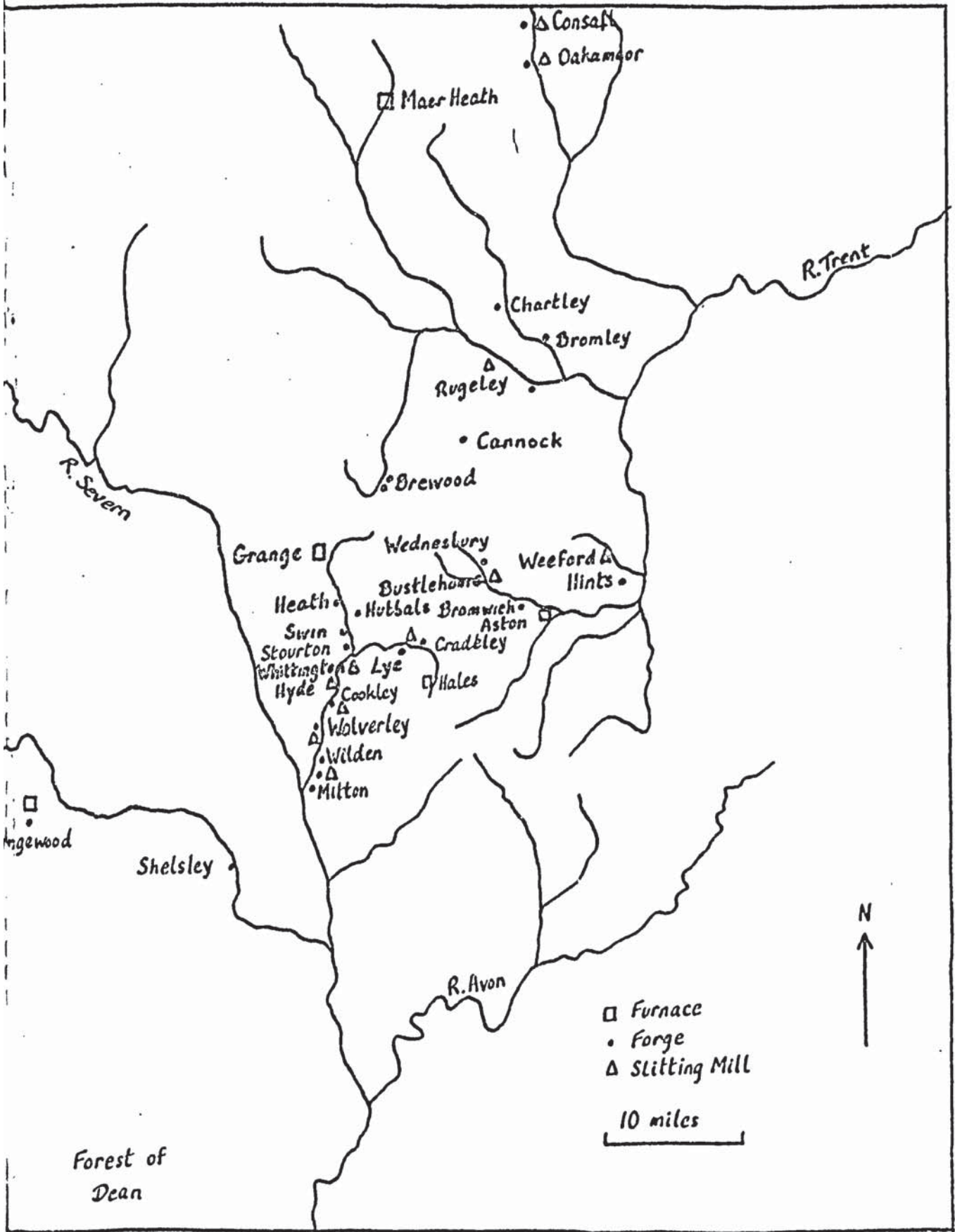


Between 1672 and 1692 there was a period of rivalry between the brothers Paul and Philip Foley in which they contended for the rich prize of the midland market. After a long series of experiments in organisation they succeeded in establishing an integrated network of management controlling mills from Tintern on the Lower Wye to Maer Heath in North Staffordshire. This was based on the interlocking partnerships called the "Ironworks in Partnership" and "The Staffordshire Works".<sup>1</sup>

1. Shafer. R.G. "Genesis and structure of the Foley ironworks in partnership of 1692" Business History Vol xiii No.1. Jan 1971. p.19-39.

The main output of all the forges and furnaces of the two partnerships was moving towards the Midland manufacturing district. The forges and slitting mills of the Stour valley relied heavily on imports of pig iron from the Forest of Dean in addition to using the output of pig iron from the two Midland furnaces of the partnership. Similarly bar and rod iron manufacture in North Staffordshire and Cheshire was sent south to Bewdley and to Rugeley for the Midlands iron manufacture. Iron in the process of manufacture was carried very considerable distances and the various mills specialised in the various stages of manufacture. Some iron was sold to other ironmasters for completion. Some independent mills carried out work for the partnerships.<sup>1</sup>

1. Johnson B.C.C. The iron industry at the end of the Charcoal Era Economic History Review Vol IV (1952) p.322  
Stour Valley iron industry Transactions of the  
Worcestershire Archeological Society 1950-1951 pp 35-46  
The Charcoal Iron industry in the early  
eighteenth century. Geographical Journal  
Vol CXVII. (1951)



Midland Iron Furnaces, Forges and Slitting Mills.

c. 1700

The significant figures are those for iron actually delivered to customers and these have now been examined for the mills most closely associated with the Midland hardware trade.

1. The Stour Valley Slitting Mills. Four slitting mills in the Stour Valley Wildon (1692-1705, Cookley 1692-1705, Stourton 1694-1705 and Wolverley 1692-1697) slit bar from the Stour Valley forges and the Forest of Dean. Separate accounts were kept for each mill. In all 219 customers bought rod from these four slitting mills, almost all of whom can be identified as Midland ironmongers. The total amounts bought was about 7,500 tons, an average of nearly 600 tons a year.<sup>1</sup>
2. Rugeley This mill in central Staffordshire slit bar sent south from the North Staffordshire forges of Consall, Cannock, Abbots Bromley and Oakamoor and it accounted for 90% of the total output of the North Staffordshire Partnership. In all 111 customers bought rod from Rugeley between 1694 and 1710. The great majority can be identified as Midland ironmongers. Between them they bought 9,600 tons - an average of about 600 tons a year.<sup>2</sup>
3. The Stour Valley Forges. Stourton and Cookley forges produced mainly "mill bar" for "forge uses" but Wolverley, Whittington and Wildon produced some "merchant bar" which was sold directly to customers. The total sold in this way was 1,900 tons - about 148 tons a year. The customers included ironmongers, scythesmiths and a few locksmiths.<sup>3</sup>

1.	Hereford Record Office	Foley Mss. D.E.f 1-13.
2.	Hereford Record Office	Foley Mss. G.A.f 15-31.
3.	Hereford Record Office	Foley Mss. D.E.f 1-13.

Sales of rod and bar to the Midlands at a later date can be studied from the accounts of the Knight Family Partnership in Ironworks. The accounts of this partnership run from 1727 to the late nineteenth century.

The partnership worked mills in the Stour Valley, Shropshire and the Forest of Dean. They operated fewer mills than the Foleys had done, but drew on far wider sources of supply for their pig iron. They processed pig iron from Yorkshire, Wales, Scotland, Ireland, Russia and America. Until 1746 they held no slitting mills of their own but put out their slitting to the Stour Valley mills.

Three accounts have been examined in detail as most directly relevant to the Midlands hardware trade.

1. The "General Sale of Rods and Bars". This account summarised the sales from Wolverley, Whittington and Upper and Lower Mitton, mills which were all situated on the River Stour. Upper and Lower Mitton began to contribute to the totals from 1734 and Cookley from 1737.

Between 1727 and 1750, 238 customers' purchases are listed. Almost all can be identified as Midland ironmongers. The total amount of iron bought was almost 25,000 tons an average of over 1,000 tons a year.

2. The "Sales of Bringewood Bar at Bewdley". This account listed sales of bar iron from Shropshire at the Bewdley warehouse. The account opens in 1733 and between 1733 and 1750, 129 customers are listed. Most of them were Midland scythesmiths and ironmongers. A few locksmiths and other manufacturing smiths can be identified but their purchases were not large or numerous. Between them the 129 customers bought nearly 3,500 tons between 1733 and 1750, an average of about 200 tons a year.

1. R.A. Lewis Two partnerships of the Knight family in the 18th century iron industry. Unpubl. Thesis Birmingham University 1949.
2. Edward Knight in 1738 said that he supplied 1,000 tons of rod iron a year to the nailers ironmongers. House of Commons Journals. Vol. xxiii p.111.
3. Kidderminster Public Library Knight Mss. 141,142,243,245,246.

3. Bromford and Nechells Park. In 1746 the Knight partnership took over Aston Furnace Bromford Forge and built Nechells Park slitting mill. Almost all the bar from Bromford went to Nechells Park to be slit together with bar from

Between 1747 and 1760 a total of 6,900 tons of rod iron was sold mainly to Birmingham customers - an average of almost 500 tons a year.

Between 1750 and 1760 the amounts of bar and rod being supplied by the Knights to the Midlands can be summarised as follows:

	<u>Total</u>		<u>Average</u>	
	<u>Tons</u>	<u>Cwt.</u>	<u>Tons</u>	<u>Cwt.</u>
Bringewood Bar at Bewdley	1,563	: 8	156	: 6
Stour rod and bar	16,220	: 13	1,622	: 1
<u>Nechells Park rod.</u>	<u>5,268</u>	<u>: 7</u>	<u>526</u>	<u>: 16</u>
<u>TOTAL</u>	<u>23,052</u>	<u>: 8</u>	<u>2,305</u>	<u>: 4.</u>

These figures tend to underestimate the amount of rod and bar being sold by the partnerships to the Midland customers, especially in the case of the Foley accounts, since iron from the Forest of Dean and from Shropshire was reaching the Midlands through the Bewdley warehouses both those in association with the partnerships, and those in independent hands.

There remains the problem of how much the independent forges supplied to the Midlands. In 1750 the listed production of the 28 forges of the four counties contiguous to the Midlands was 7,000 tons. The total, omitting the forges in the Knight partnership, was 5,190 tons.<sup>1</sup>

Some of this was sold directly to customers by the owners or lessees of these forges. George Rock and Stephen Onions for example held Brewood forge. They themselves contacted customers at Walsall and Wolverhampton, organised the delivery of iron and went over to meet customers and agree accounts.<sup>2</sup>

Much of the output must have gone to the local slitting mills but the amount and even the number of mills must remain uncertain since there is no comprehensive list of slitting mills for the period comparable to the forge lists. However, at least ten are known to have been operating in connection with the Midlands hardware district between 1623 and 1700 and at least six more are known to have been established in the eighteenth century. As most of them are known only from incidental references it is not possible to establish how long or how continuously they operated. Their number and concentration however, is sufficiently indicated.<sup>3</sup>

1. Hulme E.W. Statistical history of the iron trade. Transactions of the Newcomen Society Vol 9 (1927-29) pp.33-34.
2. Public Records Office. Chancery C 8/459/21 (Rock v Seney 1697)
3. i.e. 1623 - 1700. Bustlehome, Cradeley (1694), Rugeley, Oakamoor (to 1694) Consall, Hyde, Hints, Cookley, Wilden, Wolverley, Stourton (1694)  
 1700 - 1760. Lloyds Mill, Birmingham (c1722) (to 1722)  
 Nechells Park (1746)  
 Bradwaters (Kidderminster 1753) Witton (1735)  
 Weeford (1735).

By combining the known figures of sales to Midland customers with the approximate figures estimated from Midland forges a figure of 7,000 tons can be tentatively suggested for the annual consumption of home produced iron in the Midlands. While these figures are manifestly not statistically satisfactory, they do confirm in general terms Spooner's estimates for home produced iron, and thereby give confidence in his estimates of foreign iron consumed in the Midlands.



2. The search for new supplies. Britain.

For some time it had been evident that the ironmasters were hard pressed to meet the demands of the ironmongers in the Midlands. It was unusual for the accounts of the forges and rod mills to show more than a few hundredweight of iron left unsold when the accounts were made up - often less than a hundredweight remained. At Brewood Forge in 1674 the iron was said to be "sent away as soon as made".<sup>1</sup> The ironmongers and smiths bought from a variety of mills meeting their requirements by buying wherever and whenever they could.

Occasionally Midland ironmongers went some distance for their iron despite the high cost of transport.

<sup>2</sup> John Finch of Dudley and his partner Thomas Pemberton bought rod from Derbyshire in 1667.<sup>3</sup> Bayley Brett of West Bromwich and Samuel Fidoe of Wednesbury bought rod iron in Derbyshire in 1697-8.<sup>4</sup> Iron from Welsh forges was reaching the Midlands at least occasionally. It was brought down the River Severn to Bewdley. John Kelsall, clerk from Dolobran, regularly visited Stourbridge to arrange sales of iron to John Finch of Dudley, John Fidoe of Birmingham and others.<sup>5</sup>

1. Hereford Record Office. Foley Mss. Misc. Main series.
3. Sitwell G. Picture of the Iron Trade Derbyshire Archeological Society 1888 Vol.X. p.28.
4. Hereford Record Office. Foley Mss. G.B.f. 2 and 3.  
This may be connected with the reorganisation of Foley Mills in that year and may have been exceptional.
5. Friends House, Euston. Kelsall Diary. Transcript Vol iii - vii (1722-1735) especially Vol iii p.63-5.  
Vol iv p.13-15 Vol v. p.124.

Thomas Mechin of Birmingham ironmonger went to Llanvellig to meet Kelsall to purchase iron. Sampson Lloyd of Birmingham occasionally took iron from Dolobran to oblige his brother.<sup>1</sup>

In 1737 the Birmingham ironmongers complained that the iron produced in England was not half sufficient for their needs. Clearly in view of transport costs it was important that as many of the finishing processes at least should be sited as near to the manufacture as possible, thus passing the problems of transport of iron to the ironmasters. Between 1720 and 1760 there was a proliferation of new and converted mills in the Midlands. This was not necessarily an expensive undertaking. At different times and different seasons mills could be used for many purposes - corn milling, fulling, linseed oil grinding, and paper making. A number of them continued to fulfil one or other of these functions even when their principal use was iron processing. The cost of converting Stourton in 1694 was £583.<sup>2</sup> The erection of Nechells slitting mill in 1746 cost £1,212.9.0½d.<sup>3</sup>

1. Flinn.M. 'Lloids in the Early Iron industry.' Business History  
Vol II pp.28-9.
2. Hereford Record Office. Foley Mss. Stour Accounts. D.E.f.
3. Kidderminster Public Library. Knight Mss. 142.

Some Midland ironmongers became impatient with their dependence upon the ironmasters and slitting mills and sought to establish their own supplies of rod.

Ambrose Crowley wrote to his brother-in-law Sampson Lloyd concerning the difficulties he had encountered at Hyde, Wolverley and Cradeley mills.

"I have found Brindley, Downing and R. Wheeler all to R... us and have acted without honour justice or confidence. And they have continued so long in their roguery that you may as well make the Blackamoor white as make them honest. A mill of my own I must have". He proposed to convert Clatterbatch forge "if the lower mill will make a mill to cut 500 iron a year".<sup>1</sup>

Another ironmonger who set up his own slitting mill was James Farmer of Birmingham. He converted the "Town Mill" on the River Rea about 1720. This later became Sampson Lloyd's "slitting and corn mill". Similarly the Stantons another Birmingham ironmonger family had a mill on the River Tame between 1728-59.<sup>2</sup>

1. Lloyd. Mss. (Wootton-under-Edge) F.16. & F.13.
2. Victoria County History Warwickshire Vol vii pp.263-8.

All these attempts to increase the supply of iron to the Midlands were concerned with increasing the number of mills processing charcoal iron. Meanwhile the search of a means of making iron with sea coal was proceeding and this too was closely linked with the Midlands hardware trade.

Dud Dudley's experiments (patents 1621 & 1638) were intended to produce iron for the Midland smiths.<sup>1</sup> Blewstone's abortive coal furnace was built in Wednesbury in 1675.<sup>2</sup> The Darbys had many Midland customers for their cast goods made from sea coal especially in Wolverhampton.<sup>3</sup> William Wood the projector who took out a number of patents for using coal in iron manufacture was originally an ironmonger of Wolverhampton. His son Richard was also a patentee.<sup>4</sup>

In 1720 Richard Baddeley and Joseph Farmer, both ironmongers of Birmingham formed a partnership with a Staffordshire ironmaster and a Wolverhampton coal master to rebuild Rushall Furnace near Walsall. The intention was to "blow with coal" at least experimentally. The agreement, however, recognised this might not be successful and anticipated that charcoal would in that event be used.<sup>5</sup>

1. Dudley D. Metallum Martis (1665)
2. Ede J. Wednesbury (1962) p.129
3. Shropshire Record Office Coalbrookdale Mss. Labouchere 1988/Accounts.
4. Flinn M. *William Wood and the Coke smelting process. Transactions of the Newcomen Society* Vol XXIV (1961-2) p 53  
White M. Notes of the Wood family. T.S. and communications from Mr. White a descendant.
5. Birmingham Reference Library. Galton Mss. 84.  
The lease cites an earlier agreement of 1717 in which Richard Baddeley was associated with Charles Osborne the Wolverhampton ironmonger and toy manufacturer, and with William Wood.

None of these attempts had any economic importance in the Midlands trade before 1757, but they do show that Midland ironmongers as well as ironmasters were taking active steps to increase the supply of iron by any means which, however remotely, promised success.

Imported iron and the Midlands hardware trade.

In competition with iron from overseas English iron always lay under the disadvantage of being more expensive. Not only were production costs abroad lower than in England but freight rates across the Baltic were much lower than land carriage rates in England. Some foreign iron was imported as ballast. In 1690 duties were imposed on foreign iron imported at rates of "£2.1.6½d a ton if in English ships and £2.10.10¾d if in foreign ships."<sup>1</sup> In 1695, at a time when the demand for iron was stimulated by war, the Irish privilege of sending iron and iron goods to England duty free was removed and a duty of 19s.11d a ton imposed.<sup>2</sup>

These measures certainly helped to make English iron more competitive with foreign iron, but even where duty was paid the foreign iron still often had the advantage. This was especially the case when cheap Russian iron was introduced from 1715. From 1717 American iron was being imported and this only paid duty of 3s.9½d per ton of pig iron and £2.1.6¼d per ton of bar iron.<sup>3</sup>

In view of all this the great demand for English iron and the development of the production during this period is the more remarkable. Philip Foley the ironmaster in notes for a speech supporting the import duty on foreign iron, declared that it was evident that "English iron is far better than any foreign iron ... by the greater price that is given for it where both sorts may be had".<sup>4</sup>

1. 2 William and Mary c 4.  
2. 7 and 8 William and Mary c 17.  
3. Scrivenor H. History of the iron trade. p.328, p.333.  
4. Hereford Record Office Foley Mss. Miscellany main series.

This may be dismissed as the special pleading of an interested party. Nonetheless it was true then, and remained true throughout the eighteenth century, that Midland ironmongers and smiths were buying as much iron as the ironmasters could produce. Even in difficult years such as 1737-45 what evidence there is suggests that there was only a slight fall in sales, and that recovery and expansion were rapid by 1741.

In spite of all the activity it was agreed that English iron could not supply half the needs of the manufacturing industry and that at least as much again had to be imported from overseas. Midlands ironmongers were therefore very interested in developing the import of iron not only from the traditional sources of supply - Spain and Sweden - but also from Russia and America. Indeed import of Russian and American iron had for them the positive advantage over the Baltic iron that it was considerably cheaper, and that it was more suitable for the making of nails and locks. In addition American iron could be imported directly into the Midlands by way of the Severn.

### Russian Iron.

Thirty tons of Russian iron entered England in 1715 and from that year until 1749 the amount increased rapidly reaching a peak of almost 15,000 tons.<sup>1</sup> Abraham Spooner ironmonger, ironmaster and iron importer of Birmingham started using it about 1730. He experimented with the better quality "Government Siberian" and "Merchant Siberian" and also imported the Brinsco or Tuley iron and the Moscow or Mullers' iron. Both these latter were similar to English coldshort, suitable for making nails and they were very much cheaper than English iron. They sold at £11 - £13 a ton when comparable English rod iron was fetching £18 a ton.<sup>2</sup>

Edward Knight was importing Mullers or Moscow iron by 1739. He bought 170 to 267 tons a year and had it slit at Hyde, Stourton, Gothersley and Wolverley slitting mills. From 1746 he acted in partnership with the Crowley firm, importing jointly with them through London. After 1746 the Mullers iron he imported was sent to the newly erected Nechells Park mill for slitting and sale in the Birmingham area.<sup>3</sup>

The very cheapness of Russian iron caused some concern. As early as 1731 Edward Knight was expressing to Sampson Lloyd the fear that the low price might undercut English iron to the point where the English industry would "decay".<sup>4</sup> These fears were again expressed by several witnesses before the House of Commons committee in 1737-8 and was one of the reasons put forward for preferring the slightly more expensive American iron.<sup>5</sup>

1. Scrivenor H. History of <sup>the</sup> Iron Trade (1841) p.325-339.
2. House of Commons Journals xxxii p.853.
3. Knight Mss. Stour accounts 141 and 142.
4. Lloyds Mss. Wooton under Edge. c.86.
5. House of Commons Journals xxii p.851.



### American Iron.

The first American bar iron reached England from Nevis and St. Christopher in 1717. By 1728-9 substantial quantities of pig iron from Pennsylvania, Maryland and Virginia and Carolina were imported into England amounting in all to 1,127 tons.<sup>1</sup> By that time the Midland ironmongers had contacts of long standing with the colonists. As they said in 1718 the "greatest consumption of our iron manufactures is that now sent abroad to the Plantations".<sup>2</sup> They had close family and trade connections with the Bristol merchants. Traders exporting to the American plantations were in need of return cargoes. Above all there was the "conveniency of the Severn for exportation."<sup>3</sup>

The iron trade in the Plantations was suitable for their manufactures. William Jevon experimented with Philadelphia iron at Birmingham and the artificers found that "it answered all purposes save that of making steel".<sup>4</sup> John Farmer gave evidence to the House of Commons in 1737 that he had found Maryland iron could make steel for all purposes including the manufacture of guns, and that Potomak iron and Philadelphia iron were fit for many uses though not for making steel.<sup>5</sup> In regard to American iron the Sheffield and Hallamshire smiths and cutlers were in a very different situation from their counterparts in the Midlands. The Yorkshire manufacture was sent eastwards through Bawtry and Hull for export. They needed the high quality steel making iron from Sweden for the manufacture of cutlery.

1. Scrivenor H. History of the Iron Trade (1841) p.328-9,331.
2. House of Commons Journals Vol.xviii p.733.
3. House of Commons Journals Vol.xviii p.776.
4. House of Commons Journals Vol.xviii p.853.
5. House of Commons Journals Vol.xviii p.853.

The Crowleys on the other hand were interested in American pig iron from about 1730. They bought trial lots of pig iron from the Principio works in Maryland and before long were said to be buying most of the Principio iron sent to England. They contracted in 1735 with the Baltimore Company for the delivery of 1,200 tons at £6.5s.0d a ton. Half of the cost of the iron was to be paid for in ironware at the "ready money price".<sup>1</sup>

This manner of trading recommended itself to Midland ironmongers and merchants from an equally early date.

1. Flinn.M. Men of Iron (1962) pp.102-3

Edward Knight himself described to the House of Commons committee how the iron was imported. It passed from the factor beyond the seas to the importer who sold it to the bar ironmonger who lived near the manufactory. He sold it to the manufacturer who employed the workmen. When the iron was manufactured it was sent to London to the ironmonger who sold it to the exporting merchant. He sent the finished products to America, where a factor disposed of the goods.<sup>1</sup>

In fact the men from whom Edward Knight himself bought his American pig iron for his forges were in a number of cases the same individuals to whom he sold the rod and merchant bar to be manufactured into goods. John Turton of West Bromwich, William Seney of Walsall and William Jevon of Tipton all supplied him with Philadelphia iron. Richard Molineux of Willenhall imported pig iron from Potuxerant. Knight also used Maryland iron supplied by various Bristol importers - Lionel Lyde, Cooper, and Gordon - all of whom also bought rod and bar iron from him for manufacture. Virginian iron was imported by the Bristol firm of Donne and Co. from their two furnaces in Virginia.<sup>2</sup>

No contracts such as that of Crowley with the Baltimore company have survived for the Midlands but it is evident that the import of American pig was in the hands of those exporting iron ware to American settlers, and it seems reasonable to suppose that some such barter arrangements were in force as that agreed to by John Crowley.

1. House of Commons Journals Vol.xxiii p.109.
2. Kidderminster Public Library Knight Mss. 141,142,243,245.  
(Lyde was also connected with Rapahannok iron works in King George County 1721, C McInnes Bristol, Gateway of Empire p.257)
3. Flinn.M. Men of Iron (1962) p.103

In some cases Midland ironmongers became even more directly involved with American pig iron production. In 1619 when the first attempt had been made to manufacture iron in Virginia 150 persons went out to the settlement: 110 from Warwickshire and Staffordshire and 40 from Sussex. In 1643 Thomas Foley master of the Stour Valley ironworks became a member of the Undertakers company who were starting ironworks on the Saugus.<sup>1</sup>

Joseph Farmer of Birmingham, variously described as ironmonger, gunsmith and manufacturer of steel wares, was one of the first ironmongers to realise the possibilities. In 1717 he visited the Plantations "with a view of trying the iron ore there".<sup>2</sup> Subsequently he was connected with the development of ironworks in Baltimore County. About 1731 the Russell family of Birmingham were shareholders in the Principio and Potomak ironworks in New England. Much Principio iron was sold to the Knight ironworks, and also to the Crowley ironworks in the middle of the eighteenth century.<sup>3</sup>

1. Bishop.G. History of American Manufactures (1868) p.469; p.471.
2. House of Commons Journals Vol.xvii p.853. At that time there were no forges or furnaces in America only two bloomeries in Virginia.  
B. Smith. The Galtons of Birmingham and the gun trade. Business History vol.1X 2. July 1940 p.67.
3. Birmingham Reference Library. 418822, 418827.  
May E.C. Principio to Wheelings.  
Flinn M. Men of Iron (1962) p.102.

Edward Knight was using American pig iron at his Stour Valley forges regularly from 1730. These were brisk years in the iron trade and his own furnace at Bringewood was in any case far from providing all the pig iron his forges needed. The amount of American pig iron he used varied greatly from year to year.

PIG IRON USED IN THE STOUR VALLEY FORGES

	AMERICAN PIG		BRITISH PIG	
	TONS	CWT	TONS	CWT
1730-31	14	: 12	1276	: 11
1731-32	65	: 1	895	: 14
1732-33	130	: 5	780	: 0
1733-34	250	: 0	403	: 8
1734-35	276	: 16	1395	: 0
1735-36	308	: 8	748	: 07
1736-37	416	: 2	756	: 12
1737-38	739	: 4	1594	: 13
1738-39	472	: 12	1076	: 16
1739-40	539	: 1	854	: 5
1740-41	540	: 7	2664	: 2
1741-42	427	: 17	2119	: 16
1742-43	636	: 15	2611	: 18
1743-44	291	: 7	2275	: 16
1744-45	60	: 18	2489	: 11

After this the total amount of American iron used at the Stour forges declined sharply and Edward Knight came to depend more upon English, Welsh and Scotch iron.<sup>1</sup> The reasons for the relative failure of the American iron import after 1750 are not entirely clear.<sup>2</sup>

1. Kidderminster Public Library Knight Mss. 141,142,243,244.

2. Flinn M. Men of Iron (1962)p. 116-7.

A similar problem exists in regard to the Crowley works use of American iron.

Especially in view of the great hopes which had been expressed concerning the future of American iron in the English iron trade.

Between 1717 and 1757 there was much discussion in the Press and in Parliament concerning the advisability of encouraging the American colonists to manufacture pig and bar iron to be consumed in England. After considerable pressure legislation permitting the import of American iron duty free was eventually secured. The Midland ironmongers played a leading part in the agitation. Between 1717 and 1757 they submitted 11 petitions to Parliament. These came not only from the Birmingham ironmongers but also at various times from Walsall, Bilston, Stourbridge and Wolverhampton.<sup>1</sup> They successfully opposed the ironmasters and the gentlemen of the woodland counties, both of which groups would have preferred the prohibition of the American manufacture.<sup>2</sup>

1. House of Commons Journals Vol. xviii pp.733,745,746,753.  
 House of Commons Journals Vol. xxi p.312.  
 House of Commons Journals Vol. xxii p.772, 766, 810.  
 House of Commons Journals Vol. xxiii p. 113 and 110.  
 House of Commons Journals Vol.xxv p. 1038. p. 10467.  
 House of Commons Journals Vol.xxvii pp. 707. p.804.  
 23. George 11 c 29
2. An account of the agitation is given by Pelham R. West Midland Iron Industry and the American Market University of Birmingham Historical Journal Vol.2. No.2. p.141 (1950)

The legislation which had taken so long to pass did not fully justify its promoters. American pig and bar by no means fully established itself as the answer to Swedish supplies,<sup>1</sup> and the opening of the American production of pig and bar was speedily followed by the growth of a domestic manufacture of iron goods in the colonies.<sup>2</sup> It has been said that the "part played by American iron in the economy of Great Britain in the 18th century was slight".<sup>3</sup> Yet its importance in the Midlands is not wholly negligible. It supplemented the inadequate supplies of home produced and imported iron, and so enabled the manufacturers to continue to respond to the demand for their manufactured goods. It provided a small group of Midlands ironmongers with new opportunities for profit and extended their range of operations, thus enhancing their importance relative to other interests in the community.

1. Flinn M. Men of Iron (1962) p.117
2. see below p. 239
3. A.C. Bining British regulation of the colonial iron trade (1933) p. 85.

Part Four.

The ironmongers. 1660 - 1760.



The Midland Ironmongers 1660 - 1760

The ironmongers were engaged in a specialised and wholesale business. They were occupied entirely with the purchase and distribution of raw materials and the sale of the finished goods. They did not as far as can be discovered combine this with other trades. If there was a family farm or estate its management devolved on members of the family not engaged in "driving the trade of ironmonger". If the wealthier of them took shares in iron mills it was with a view to securing their supplies of raw materials and as a venture supplementary to their main business.

In order to examine the manner in which they carried on that business it is necessary to gather together fragments of evidence from many sources.

There are no known account books and hardly any correspondence before 1760. Any account of their proceedings must therefore be based on individual cases and oblique references. No statistical or analytical appraisal is possible - the best that can be hoped for is an incomplete patchwork of detail.

1. The ironmonger as customer.

By analysing the ironmasters' accounts of sales of rod and bar it is possible to discover something of the number of ironmongers and the size of their concerns. It is also possible to establish, to some extent, who were the leading ironmongers, and to see how their enterprises compared with those of the smaller entrepreneurs.

1. An exception is the small collection relating to Tobias Bellaers Birmingham Reference Library 386, 746. There are also fragments of correspondence of Sampson Lloyd in the Lloyd family papers. These are at present in the hands of Mr. H. Lloyd of Wootton-under-Edge, who kindly allowed me to use them.

Several lists of customers for rod at Bustlehome mill can be pieced together to provide information concerning purchases 1669-1674.<sup>1</sup> These lists show two kinds of customers - "wholesale chapmen" and "petty chapmen". Two thirds of the 80 customers were "petty chapmen" but those bought between them only about 70 tons a year out of the mill's total output of 400 tons.

The greater part of the rod produced at Bustlehome was bought by the twenty "wholesale chapmen", whose purchases made regularly, ranged from 5 to 70 tons in the year. They belonged to families living in the vicinity of the mill - at Walsall, West Bromwich, Amblecote, Tipton and Birmingham. Among them was Henry Stone, ~~two~~<sup>one</sup> of the families complained about in the handicraftsmen's petition of 1605.<sup>2</sup> All but three of the remaining "wholesale chapmen" bore names which were to be conspicuous among Midland ironmongers for the next four generations at least - Parkes, Fidoe, Careless, Jevons, Hopkins, Russell, Gibbons.

1. Hereford Records Office Foley papers. Kbf 2 Kbf 5 Kbf 15.
2. Homeshaw E.J. Borough and Corporation of Walsall (1960) Appendix A. page 152.

Between 1693 and 1705, 219 customers bought rod iron from the Foley mills in the Stour Valley, Wolverley, Wildon, Stourton and Cookley.<sup>1</sup> The great majority of these customers appear in the lists only once or twice - casual purchases by yeomen, gentry and craftsmen who required rod iron presumably for building or estate purposes. However, although these customers were very numerous - 109 in all - their purchases were not an important element in the sales. 125 customers took less than 10 tons each in the thirteen years of the accounts. The important customers were the 16 purchasers who took more than 100 tons each during the period. One third of the total rod sold was taken by the ten largest customers. One tenth of the total number of purchasers were taking one half of the total sold.

The pattern is even more marked when the rod sales for the North Staffordshire works are examined.<sup>2</sup> In this case two thirds of the total rod sold was going to one tenth of the total number of customers.

1. Herefordshire Record Office. Foley Mss. Def. 1-13  
- See Appendix. 4 p. 316
2. Foley Mss. F V1 M.A. F 1-31.

The lists of customers for bar iron bought at Bewdley and the Stour forges are rather different from those for rod iron. The overall totals of iron bought and the average purchases by individual customers are notably less. Between 1692 and 1710 256 customers bought between them 2,516 tons of bar. The ten chief customers took rather less than a third of the total. Only 37 customers took more than 5 tons in any one year.

The largest customers for bar iron included a number of ironmongers who bought rod. However, a substantial amount was taken by the scythesmiths buying on their own behalf. James Raybould of Sedgley took 60 tons of bar in 7 years. Wildsmith Badger of Oldswinford took 50 tons in 5 years. Nineteen scythesmiths can be identified among the Bewdley customers, and there were probably others who have escaped identification. The Bullas family of Stourbridge, locksmiths, were also independent customers of the Foleys.

The scythesmiths were recognised as an important and separate group of customers by the ironmasters. They may have bought as much as 15% of the total sales of bar iron.

By combining the three available sources of information - sales of rod from the Stour accounts, sales of rod from the Staffordshire partnership, and sales of bar from Bewdley a list can be compiled which gives a guide to the principal purchasers of iron in the Midlands.

If the customers are ranged in order according to the size of their total purchases certain points emerge. In the first place the regular purchasers are almost entirely Midland men. Identification is most complete and certain among the larger purchasers. Of those buying 2 tons and over identifications have been made as follows:

100 largest customers	83 identified	846 tons to 30 tons.
100 next largest customers	65 identified	30 tons to 5 tons.
48 remaining who bought over 2 tons	20 identified	5 tons to 2 tons
<u>165 bought 2 tons or less</u>	<u>39 identified</u>	<u>2 tons and less.</u>
TOTAL	<u>413</u>	<u>207 identified</u>

Of the very small scale and casual purchasers many bear recognisably local names, and a number can be identified as local gentlemen and yeomen. Some of these bought as little as two hundredweight in all. The distribution of the parishes of the identified purchasers of more than two tons is as follows:

1. Appendix 6 p. 321

Birmingham	43	Willenhall	5	
Wolverhampton	19	Bromsgrove	5	
Sedgley	13	Wednesbury	4	
Halesowen	13	Bewdley	4	
Dudley	11	Kidderminster	4	
Oldswinford	11	Wychbold	3	
Clent	9	Rowley Regis	3	
Stourbridge	9	Kings Norton	2	
Kinver	8	Worcester	2	15 parishes are represented by a single purchaser. <sup>1</sup>
Bristol	8	Walsall	2	
Kingswinford	6	Maer Heath	2	
West Bromwich	6			

A few special customers bought from a distance - notably Ambrose Crowley junior of London and Newcastle, who, however, employed large numbers in the Midlands. The iron purchased from the Foleys may well have been for their use.

1. Barr, Wednesfield, Cannock, Pedmore, Hagley, Bilston, Tenbury, Oldbury, "Dean" Shrewsbury, Stone, Gloucester, Penn, Hartlebury, and Crowley of London and Newcastle.

A Thomas Newcomen appears briefly as a customer in 1694 who must surely be "of Dartmouth ironmonger". If so this may explain in part his connection with the Midlands at a slightly later date. The managing partner in the Staffordshire partnership of the Foley family - Obadiah Lane bought iron from time to time and he was of Normacote Grange, Stoke-on-Trent. Apart from these, a customer from Gloucester and another from Whittington Warwickshire were the furthest afield with the exception of the Bristol merchants who bought Foley rod and bar, presumably for export. A number of these Bristol merchants - William French, William Turton and Thomas Guest, for example, had close family ties with the Midlands. Even on the improbable assumption that the unidentified small-scale purchasers were men from a distance the relationship between the Stour mills and the Midland customers is more than established.

Secondly, the amounts purchased in any year by even the largest customers are not large.

The quantities here recorded clearly omit much. At the end of the eighteenth century when work was more full time it was assumed that a ton of iron occupied a nailer and his family for a year. Even if this is halved to allow for part-time and seasonal working in a dual economy the quantities bought are insufficient to account for the recorded nailers and other metal workers. The ironmongers must have been buying iron from other local forges which have no recorded accounts. The Foleys themselves sold Forest iron to Midlanders at Bewdley in addition to the sales analysed above. The independent slitting mills were another source of supply.

Even making all these allowances it is still clear that there were a large group of men engaged in the business of ironmongering, that even the largest of them was trading on a modest scale, and that there was room in the trade for a considerable number of middling and "little" men who cannot have been dealing with more than a handful of smiths.

Before examining the implications of this evidence it is convenient to examine a similar series of accounts for the middle of the eighteenth century.

A similar analysis has been made of the customers' accounts with the Knight family partnership.<sup>1</sup>

The Knight papers provide two sets of accounts. Between 1727 and 1750, 238 customers bought almost 25,000 tons of rod and bar from the Stour forges - Wolverley, Whittington, Cookley and Upper and Lower Mitton. Sixty-three of these customers purchased in one year only and a further sixty-five purchased only in two or three years. The ten chief customers bought between them just over half the total sold. The largest single purchaser from this account over the 23 years was Thomas Phillips of Nether Gornal who bought 1,771 tons.

Bar iron sales showed a similar pattern although the quantities purchased were smaller. The Bringewood account for bar sold at Bewdley 1733-50 shows 129 customers buying between them nearly 3,500 tons. Forty-two of them bought only once and a further 24 in only two or three years. The ten largest customers took just over half the total of bar. The single largest customer was Sampson Lloyd who bought 614 tons of bar in 17 years.

Sixteen of the customers can be identified as scythesmiths buying between one and ten tons a year. The "iron slitters" from the independent mills took some bar iron. Apart from these the regular customers are predominantly ironmongers.

1. Kidderminster Public Library Knight Mss. 141, 142, 243, 245, See Appendix. 5, p. 319



The total number of customers from the combined accounts was 208  
 Of these it has proved possible to identify 132. As before  
 identification is easiest in respect of the more important customers.

50 largest customers	46 identified	1,488 tons to 99 tons
50 next largest customers	33 identified	99 tons to 28 tons
67 remaining who bought over 2 tons	36 identified	28 tons to 2 tons
41 bought less than 2 tons	17 identified	2 tons and less
<u>TOTAL 208</u>	<u>132 identified</u>	

The provenance of the 167 identified customers buying more than two  
 tons is as follows:

Birmingham	17	Sedgley	4	
Wolverhampton	20	Kidderminster	2	
Dudley	5	Wolverley	2	
Stourbridge	5	Willenhall	2	
Cradeley	5	Wednesbury	2	Twelve parishes are represented by <sup>1</sup> a single purchaser.
Oldswinford	5	Bilston	2	
Walsall	4	Tipton	2	
Bromsgrove	3	Halesowen	2	

The pattern is very similar to that of forty years previously. There are the special connections - William Finch of Cambridge and the Crowley Company of London and Newcastle. There are the occasional large purchases by other ironmasters (Sitwell and Co. bought 80 tons in 1749-50) or by the slitting mills, Cookley, Hyde, Wolverley and Mitton.

Otherwise the majority of the regular customers are ironmongers in Birmingham or in the manufacturing region. There is little to suggest that direct purchases were being made by retail ironmongers. Only two such can be identified, Daniel Clarke of Wolverhampton and Nathan Harvey of Evesham.<sup>2</sup>

1. London 1, Coalbrookdale 1, Bristol 1, Hyde 1, Mitton 1, Cambridge 1, Halesowen 1, West Bromwich 1, Kinver 1, Worcester 1, Chaddesley Corbett 1, Yorkshire 1.
2. Both bought rod and bar from the Knights, and cast goods from Coalbrookdale. They also stocked manufactured articles on a large scale. Daniel Clarke undertook business in the new "brass and toy way" and in Manchester goods.  
Aris Birmingham Gazette '28 Jan. 1754.  
Worcester Postman March 1741/2  
Shropshire Record Office, Coalbrookdale Mss. Labouchere 1988/Accts.

The average quantities bought by even the largest customers were not great. This is the more remarkable since it may be assumed that the partnerships, from whose accounts the evidence is drawn, were attracting the largest and most commercial of the customers. A partnership was better able to ensure a regular supply of iron and to meet agreements about deliveries than the small family mills. Yet even those who bought most from the partnerships were taking only a small share of the trade as a whole.

Direct statistical comparison between the two sets of accounts is impossible since the number of mills and the source of supply in each case is so different. The Foley accounts included the important Rugeley rod iron account. The Knight accounts were only concerned with the Stour mills. This disparity, however, only underlines the fact that the average quantities being bought by the largest scale customers were, as one would expect, in an expanding market, becoming larger, and the range of purchases between small and large operator was extending. But although this process was certainly proceeding, it was proceeding only very slowly before 1760. There is nothing to suggest that the "middling" purchaser of rod iron was being squeezed out by large scale entrepreneurs.

A list of ironmongers who do not appear in the partnership accounts has been compiled from deeds, advertisements etc. Their numbers only reinforce the conclusion that the numbers participating in the trade were large, and their individual shares of the trade fairly small.

1. Appendix 7 p 340

The family background of the ironmongers.

The family backgrounds of the ironmongers were exceedingly various. A number of them are known to have been working smiths. Ambrose Crowley<sup>2</sup> was the son of a typical Stourbridge nailer<sup>1</sup>. Joseph Allen was the son of a Birmingham bucklemaker<sup>2</sup>. Samuel and Henry Fidoe of Wednesbury were almost certainly the sons of John Fidoe of Wednesbury who though described as an ironmonger had a working shop in Wednesbury and another in West Bromwich.<sup>3</sup> All these achieved great wealth and prominence as ironmongers. Among the lesser ironmongers there were those who were clearly on the border line between manufacturer and ironmonger. They were described in the probate records as nailer, spurrier etc., but their shops contained no working tools. Instead there was a store of iron and nails, and weighbeam scales and table.<sup>4</sup>

1. Flinn M. Men of Iron (1962) p.9.
2. Birmingham Reference Library Hearth Tax transcripts. 42868.
3. Probate records in Lichfield Record Office and information from Mr. H. Lloyd a descendant.
4. e.g. Lichfield Record Office Humphrey Smith Walsall lorrimer  
26th September 1660.  
Lichfield Record Office Henry Hodgkinson Walsall lorrimer  
31st December 1680.  
Worcester Record Office William Chambers Bromsgrove  
ironmonger February 2nd 1702/3  
Worcester Record Office Thomas Wall Bromsgrove nailer  
1674.

Some ironmongers first appear as clerks and servants. John Russell was agent for Robert Foley in Bristol in 1654.<sup>1</sup> Benjamin Banner was in his turn a servant to John Russell.<sup>2</sup> Francis Homfray started as a clerk to the Crowleys before becoming an ironmonger.<sup>3</sup> Others had commercial connections. The Pembertons originated as Birmingham goldsmiths.<sup>4</sup> The Jesson family of West Bromwich were a yeoman family with mercers and grocers in the family as well as ironmongers.<sup>5</sup> More frequently the background was explicitly agricultural. Sampson Lloyd was a farmer in Herefordshire before he came to Birmingham.<sup>6</sup> George Bissel of Yardley apparently made his living from the land but one of his sons became an ironmonger and another a mercer.<sup>7</sup> Richard Bradley of Dudley came from a yeoman family.<sup>8</sup>

1. Bristol Record Office Depositions Book 1657-61 16th October 1658
2. Warwickshire Quarter Sessions Papers (1683-1690) ed. J. Willis Bund  
Warwickshire Historical Society Vol VII p.240
3. Flinn M. Men of Iron (1962) p.234
4. Victoria County History Warwickshire Vol VII p.88
5. West Bromwich Reference Library. Jesson Papers.
6. Flinn M. The Lloyds in the early iron industry. Business History  
Vol. 11 No.1. Dec.1959 p.21.
7. Birmingham Reference Library 350219, 350220, 424857.
8. Dudley Public Library Archives of the Earl of Dudley. 14/4.

Some entered the trade by way of apprenticeship. In 1763 it was said that apprenticeship to an ironmonger would cost between £70 and £120, a figure well beyond the reach of most smiths.<sup>1</sup>

By far the commonest way of learning the trade was for a son to assist his father. John Gibbons of Gornal sent his son Thomas to Bristol where he acted as agent for his father and learned the trade. Later he returned to the Midlands and set up for himself in a very large way of business.<sup>2</sup>

1. Benton E. Bilston Enamellers Transactions of the English Ceramic Circle Vol IV no 3 p.186 Appendix III  
Public Record Office P.C.C. Will of John Turton of West Bromwich.  
11th Dec. 1686
2. Perkins M. Dudley Bankers Banks and Bank Notes (1905)

Another Turton - Joseph Turton of Wolverhampton, described in 1710 how he was brought up to the trade of ironmonger. His father was an ironmonger who taught him the trade of taking in nails in the country and selling them in London "which trade as in other country offices the deponent being the second son of his father was brought up". The implication seems to be that this was standard practice. He continued "to serve his said father" until he was thirty years of age. On his marriage he was given a wage of £30 a year. This figure is much the same as the amount usually paid to such confidential and skilled men as the clerks at an iron mill. "For several years he did go frequently to London and did chiefly manage the said trade for his father who for the most part stayed at home and looked after his husbandry and other affairs". In 1700 six years after his marriage Joseph's father left off trade altogether and made over the business assets consisting of iron, nails and book debts to his son. The total value of the business was computed to be £1,547.15.2. though this was later disputed. At the time, however, Joseph Turton felt sufficiently secure of his prospects to purchase an estate consisting of land, tenements and a "copyhold of inheritance" for £200, thus setting the seal on his long training in the business and marking his independence.<sup>1</sup>

1. Public Record Office Chancery/Mitford 621/9

Not all came into the trade in such an orthodox and respectable manner. Between 1683 and 1690, 9 persons were prosecuted at Warwick Assizes for practising the trade of ironmonger not having been apprenticed to it. They included a stirrup maker, a rowel maker, a spurmaker, and a tallow chandler from Nuneaton. Two more were from Willenhall and two more from Birmingham. The ninth was Richard Turner of Willenhall a relative or agent of the Molineux family.<sup>1</sup>

At first sight the religious grouping of the ironmongers looks significant. To name the Lloyds, Parkes and Fidoes and Pembertons as Quakers is to repeat what is well known; but to these can be added many less prominent ironmongers - Hunyatt, Hopkins and Horton for example.<sup>2</sup> There was also a group of ironmongers with strong Presbyterian sympathies - the Bretts, Jessons and Finches of West Bromwich and Dudley.<sup>3</sup> Many of the ironmongers were certainly Nonconformists. But Nonconformists at this period in the Midlands are much easier to trace than members of the established church. Parish registers of places such as Wolverhampton and Birmingham were already so voluminous and withal so incomplete that they have so far defied publication and analysis. Nevertheless a good number of ironmongers can be discovered making a contribution to the development of the Church of England in the Midlands. Together with

1. Warwickshire Quarter Sessions Papers (1683-1690) ed. Willis Bund Vol. viii pp 32,33,37,57,72, 81.
2. Rollason, A. Non-Parochial Registers of Dudley 1899 Friends House Euston. Registers of Meetings of Bromsgrove Dudley etc.
3. Dudley Public Library Earl of Dudley Papers 24/11 Hackwood F.W. History of West Bromwich ( 1900 )
4. ~~Staffordshire Record Office. Wolverhampton Parish Registers and Churchwardens Accounts.~~
5. ~~Birmingham Reference Library. Registers of St. Mark's Birmingham Registers of Harborne.~~



the local gentry and the coalmasters, ironmongers co-operated in maintaining and restoring many churches. They helped to establish new chapels in Smethwick,<sup>1</sup> Wednesfield<sup>2</sup> and Oldbury.<sup>3</sup> Four ironmongers and a japanner were among the trustees of the new St, Johns Chapel in Wolverhampton.<sup>4</sup> Two subscribed to a new Altar at the old Parish Church of St. Peters in the same town.<sup>5</sup> Others again were active churchwardens at Wolverhampton,<sup>6</sup> Halesowen,<sup>7</sup> Bilston,<sup>8</sup> Stourbridge and in other parishes.

1. Birmingham Reference Library 454302  
Hackwood F.W. History of Smethwick (1896)
2. Wolverhampton Reference Library. Act for erection of Wednesfield Chapel. 1747
3. Hackwood F.W. Oldbury and Roundabout ( 1915)
4. Mander G. and Tildesley N. History of Wolverhampton (1960) p.120.  
Aris Birmingham Gazette 23rd June 1755.
5. Staffordshire Record Office Wolverhampton Churchwardens Accounts.
6. Somers A. and A.K. Halas Hales Halesowen (1938)
7. Bilston Public Library Transcript of Churchwardens Accounts (Lawley)
8. Scott W. Stourbridge and its vicinity.(1830)

What almost all the ironmongers did have in common was a close network of ties assiduously cultivated whether they were based on family, marriage, religion or simply neighbourhood.

With only a few exceptions these families can be traced in the neighbourhood from the sixteenth century. Even the "incomers" proved the rule since all were brought by marriage into the network. The famous William Wood first appears as "Molineux and son in law Wood". Bayley Brett married into the Jesson family. Sampson Lloyd married into the Crowley and Pemberton group. This pattern was not the prerogative of a few well known Quaker families. It can be traced among ironmongers small and great. The Turtons, Symcoxes and Woodhouses form one group; Bradburne, Spooner and Blackham another. Thomas Cox of Cradeley was a small scale ironmonger, linked by marriage to the Lea, Tibbats and Robins families of scythesmiths.

The recruitment of capital.

It was almost certainly by making use of family links that the capital required for the business of ironmonger was built up. Robert Foley of Stourbridge was a man of "great trade and dealing, and having often occasion for great sums of money" borrowed a number of sums which were listed as outstanding at his death in 1677. All the creditors were either relatives or local gentry neighbours in Stourbridge and Oldswinford.<sup>1</sup>

1. "Money lent him to drive the trade of ironmonger"

John Paston	£300
Mary Hickman	200
George Cooper	150
Richard Amphlett	600
Humphrey Jeston	100
Elizabeth Bird	100
Nicholas Addenbrook	150

Money was also lent him for the same purpose by his brother Philip Foley but the amounts are not specified.

Public Record Office Chancery C8/251/18 and 20.

Many of the ironmongers had land in various manors and parishes which had accumulated through inheritance and family connections. Much of this property was in small scattered parcels - copyhold, freehold and leasehold, in leet fields and in closes. It is very rare to find reference to property outside the manufacturing parishes and their immediate environs. The only exception to this was the possession by a few ironmongers of a house, or inn in Bristol, or a small property in London. Many ironmongers were buying land - but in small parcels in the manufacturing districts. This was much facilitated by the break up of various old lordships at this time - the Sheltons of Wednesbury for example, and the Levesons of Wolverhampton and Willenhall. Much of Lord Gower's property in Wolverhampton and district was on long 99 year leases from the Deanery manor and these properties also came on the market in the middle of the eighteenth century.<sup>1</sup>

1. Manor court rolls of Sedgley, Kingswinford, Rowley Regis, Wolverhampton Stow Heath and Wolverhampton Deanery. S. Shaw Staffordshire (1798) Vol 2.p.163 Ede J. Wednesbury (1962) p.88

Inherited and acquired local properties lent themselves to the raising of mortgages. The advance of the property was often provided in small amounts of less than £100 at a time, by the more prosperous of the local gentry, by fellow tradesmen, but most often by relatives and neighbours. Other properties provided convenient marriage portions for ironmongers' daughters, when as so often happened, they married into another ironmonger's family.

The available evidence suggests that Midland ironmongers were not seeking to invest in land in agricultural areas, nor were they raising mortgages from persons far outside the region itself.<sup>1</sup>

Similarly there is no evidence before 1760 that Midland ironmongers were forming partnerships other than those which were secured in family relationships. In this they differed from many of their contemporaries. The structure of the Foley partnership in ironworks at the end of the seventeenth century has been seen as "the prototype of the modern board of directors".<sup>2</sup> The Knight ironmaster partnership of the eighteenth century has also been studied as a contribution to the evolution of modern management techniques.<sup>3</sup> Midland attorneys were required to develop forms of agreement for coal masters, for potters, and for other manufacturers, and standard practices and patterns were beginning to emerge well before 1760.<sup>4</sup>

1. Birmingham Reference Library. Chubbs Calendar of Deeds.  
Dudley Reference Library. Earl of Dudley's Papers.  
Worcester Record Office. Palfrey Mss. Abell Jackson Mss.
2. Shafer R.G. Genesis and structure of the Foley ironworks in partnership of 1692. Business History Vol.xiii No.1.  
Jan.1971 p.21.
3. Downes R.L. The Stour Partnership 1726-36 Economic History Review  
2nd series Vol.iii 1950.
4. Notebook of Richard Parrott. Newcastle-under-Lyme Museum. This book of precedents compiled by a young attorney during his training gives numerous examples of these apparently copied from real cases.  
Staffordshire Record Office. Aqualate Mss. Hand Morgan Mss.

The ironmongers continued to trade on a family basis. Even when the expression "and co." occurs it refers to a son or brother-in-law. The earliest references to partnerships of ironmongers based on purely business connections date from the period 1760-70.

The ironmongers at work.

1. Purchase of iron.

The ironmongers placed their orders with the ironmasters' clerks at the mills. They could also contact them at the ironmasters' monthly meeting at the Talbot in Stourbridge. The clerk of Dolobran ironworks not only visited the monthly meeting but also visited the ironmongers in their homes or met them at St. Martin's Coffee House, Birmingham.<sup>1</sup>

The Foley partnership warehoused iron at Stourbridge at the Talbot, at the "Cloth House" opposite Redstone Ferry, and at Wildon. Bewdley was the most important of its warehouses. From these warehouses or directly from the mills the iron was sent by road to the ironmongers or to recognised collecting centres in Birmingham, Wolverhampton and Stourbridge. The Hand Inn in Cock Street, Wolverhampton was one of six such centres maintained by the Foleys for the distribution of Rugeley rod. The Innkeeper, Thomas Loxdale, was responsible to the partnership for delivering iron to the ironmongers in small consignments of a ton or less. The rod was sent off every few days, by packhorse or wagon, it was wrapped in layers of straw or cloth to reduce rusting. Loxdale was paid a "salary" of 3s 4d. per ton delivered.<sup>2</sup>

The ironmongers could also obtain iron from a number of independent warehouses and agents. There were a number of these at Bewdley and Wribbenhall receiving iron sent up or down the Severn. The best documented and probably the most important of the agents was Samuel Milner of Bewdley who supplied and distributed bar iron, pig iron, copper and manufactured goods. He was agent at various times for the Darbys of

1. Friends House Library Euston. Diary of John Kelsall.  
Transcript Vol iii p.63-6. Vol iv p.13-15. Vol iv p.193-8  
Vol v p.104-5.
2. Hereford Record Office. Foley Mss. Miscellaneous Main Series.

Coalbrookdale, the Spencers of Yorkshire, and the Rawlinsons of Furness. He had close connections with the ironmasters and with Bristol.<sup>1</sup>

There were others of more modest activities. John Southwell of Wribbenhall was an "ironkeeper". He lived in a small and simply furnished house of four rooms and a shop on the street front. He had only £3 in money and £3 in debts when he died in 1703. His daughter married into another family of warehousekeepers, the Cartwrights of Bewdley.<sup>2</sup>

1. Raistrick A. Quakers in Science and Industry (1968)  
pp 99, 100, 104-5, 113, 126.  
The Milner family had large warehouses at Wribbenhall.
2. Worcester Record Office..Probate. John Southwell Wribbenhall  
8th April 1703.



A Chancery case of 1662 demonstrates the manner in which the ironmongers dealt with ironmaster. John Symcox of West Bromwich, gentleman, agreed with Robert Slaney ironmaster in 1656 for the delivery of 10 tons of rod iron "to wit 5 tons of good tuff iron called blend iron and 5 tons of colshere iron", at the rate of £18.5.0d a ton. The total cost was to be £182.10.0d of which £100 was to be paid immediately and the remainder when all the iron had been delivered. The iron was to be delivered directly to two smiths in Wolverhampton. The price agreed was to be concealed lest it prejudice the ironmaster with his other chapmen.<sup>1</sup>

1. Public Record Office. Chancery C 7/452/88

The ironmongers became skilled at using the clumsy system of credit to their advantage. John Gibbons of Gornal, ironmonger, wrote on October 4th 1750 to his son who was acting for him in Bristol. He asked him to procure 3 tons of iron for him "but as soon as Messrs. Frankard and Galton's iron comes in thee will be able to get some discount for money - go to their clerk and know if thou canst when he expects it". He had second thoughts and added in a postscript "if thou canst, buy ten ton of iron at £13.10.0d with the discount of  $2\frac{1}{2}$  or  $3\%$  for bills a month after date, do, for iron will be scarce .....

Perkins M. Dudley bankers and banknotes (1905) p.135.

There is no reason to doubt the authenticity of this letter, although it is only known by this transcription. There are, however, several holdings of Gibbons papers still in private hands, to which Perkins would probably have had access.

Thomas Gibbons, the son addressed, later became a wealthy ironmonger in Kingswinford.

The price of iron to the ironmongers was fixed by agreement among the ironmasters. In this connection a letter of Edward Knight ironmaster to Sampson Lloyd ironmonger is worth quoting at length since it clearly demonstrates the practice of the trade.

The letter is dated November 2nd 1731 and after discussing problems of delivery and matters concerning the use of American pig, he continues, "The ironmasters do not seem to doubt of keeping up the advance of 20s per ton in the Rod iron, provided that there doth not come a greater quantity of foreign iron into the Markett that we are yet apprised of. As to what is in your last. There is nobody suspects your selling it under the markt. You may remember I gave notice soon after Midsummer of 10s per ton advance in the best iron to begin from Michaelmas, and the advance now proposed we shall not expect till after Christmas, which is agreed to be 20s per ton above the underwritten price and if it will not bear(?) I must be ready to sell as others do".

He then gives the prices for the various types of rod and bar "at Birmingham" and adds "This is the price to constant customers at three months credit. To uncertain customers the advance begins Nov.13".<sup>1</sup>

1. Lloyd Mss. (Wootton under Edge) C.86. (Nov.2nd 1731)

John Knight esquire, the grandson of the writer of the letter quoted above, was said to have such influence in the iron trade that "that he usually fixed the prices of bar iron at the periodical meetings at Stourbridge, Birmingham and Wolverhampton".<sup>1</sup>

As early as 1592 Sir Thomas Middleton was able to send a clerk to discover "the usual prices of iron about Birmingham" when planning his new iron producing undertakings.<sup>2</sup> The Spencers in Yorkshire kept an eye on Midland prices. In January 1739/40 William Spencer's clerk reported that "I was at Bromwicham on Christmas Eve and they talk of advancing iron 20 shillings per ton. This frost will undoubtedly make iron scarce and give them a favourable opportunity for doing it". Or again in February 1742/3 the "Staffs and Worcs ironmasters have lowered the price for iron".<sup>3</sup>

The overall effect of the price fixing by the ironmasters was to hold the prices for bar and rod fairly steady despite seasonal, political and commercial fluctuations and disturbances in the trade.

1. Scott W. Stourbridge and its Vicinity (1832) p. quoting G. Brewer Introduction to the Beauties of England and Wales (1808)
2. Pelham R.A. Establishment of the Willoughby Ironworks in North Warwickshire in the 16th Century. University of Birmingham Historical Journal Vol.iv p.18.
3. Sheffield Record Office. Spencer Mss. 60514 Jan 10 1739/40 and 61053 Feb 14 1742.

From the original...

## 2. Credit and Exchange

The payments by the ironmongers were entered in the ironmasters' accounts annually and the clerks did not usually give any indication whether the payments were made in cash or by bills.

In the early Foley accounts for the years 1667-75 there are incomplete fragments of accounts which show large sums being received in the "country cash book" the "B-ham cash book"<sup>1</sup> and "Cash paid in London" this last amounting in 1671 to over £8,000,<sup>1</sup> due for iron from the Stour mills Bustlehome and Wednesbury. An abatement in the price was made for "ready money".

Many payments were a combination of cash and bills of exchange and many of the credit transactions took place in London. The Foley partnership, in addition to consolidating the cash and sales account in the hands of a single agent John Wheeler (1692-1708) also employed a salaried clerk in London to keep the books. Thomas Pooler held this post at £30 a year in 1697.<sup>2</sup> Much use was made of London goldsmiths and bankers. Thus when George Sitwell of Yorkshire, ironmaster, wished to obtain the £600 which John Finch of Dudley ironmonger owed to him, he instructed his "cosen Francis in London" to "go into Paul's churchyard and to one Mr. Joseph Sheldon who lives at the Golden Key there and tell him from me you have an order from me to have so much paid to him for my cosen ~~John~~ Roger Allestreys' ..... (account?)"<sup>3</sup>

1. Hereford Record Office. Foley Mss. Miscellany Main Series.
2. Foley Mss. D.e.f. 1 - 13. John Wheeler Cash Account.
3. Sitwell G. Picture of the Iron Trade Derbyshire Archaeological Soc. Vol.10. 1889/9 p.8.

The complexities of payment for iron are further illustrated by Sir Thomas Middleton's accounts with the ironmonger Robert Foley of Stourbridge for rod iron from Wolverley mill 1641-48. The clerk's notes show that "Mr. Foley left money for me at Mrs. Smiths' in Bridgnorth and Mr. Mitton took it home with him to pay Sir Thomas Middleton."<sup>1</sup> Three weeks later he "Reckoned with Mr. Foley there at his house and he told me that he had paid to Sir Thomas Middleton in London in June or July". Again rather more formally "Sent a bill of exchange from Mr. Robert Foley to the Old Eagle 19 Jan 1648 to receive of his brother Mr. Richard Foley £100 in London of July postea. He was to have had the same delivered to him at our slitting mill".<sup>1</sup>

1. Edwards I Shropshire Iron Partnership. Shropshire Arch Soc 1956/7

Throughout the period regional fairs continued to be important occasions for the settling of accounts - in particular Bristol March and September fairs.<sup>1</sup>

The Welsh ironmaster also settled accounts at this fair and all the people of the district were called to discharge their shop debts.<sup>2</sup>

"A Bristol book" of cash and debts was kept by the Foleys as early as 1667.<sup>3</sup> A note in the Bustlehome account shows the process in action ....

"Thomas Pemberton (of Birmingham) hath orders in London so he sayeth £146 and £66 and will pay £100 at Bristol fair and £100 at Ladyday and for what he still oweth he will give bond for with interest to pay at three months". The total sum owed was £715.<sup>4</sup>

The Foley's manager John Wheeler made frequent journeys to Bristol as well as to London to collect payment in cash and bills.<sup>5</sup> Abraham Darby and his successors visited Bristol, Chester and Stourbridge fairs to settle accounts with the Midland ironmongers.<sup>6</sup> The Birmingham ironmonger Tobias Bellaers arranged his business journeys to coincide with fairs at Stanford, St. Ives and Lincoln.<sup>7</sup> In 1765 a North Staffordshire coalmaster wrote "I have to pay my blacksmith on Tuesday for my engine work and cole pit work, as I pay him onst a year against Namptwich Fayre and then he pays off his ironmaster".<sup>8</sup>

d

1. Minchington W.E. Bristol. Metropolis of the West. Transactions of the Royal Historical Society 5th Series Vol. IV 1954. Until 1731 the fairs were in January and July.
2. A.H. John. Economic Development of S. Wales (1950) p. 14
3. Hereford Record Office Foley Mss. F. b. f. 1.
4. Hereford Record Office Foley Misc. Main Series.
5. Hereford Record Office Foley Mss. D. e. f. 1-12 John Wheeler Cash Acct.
6. Raistrick A. Dynasty of Ironfounders (1953) p. 7, 9, 14.
7. Birmingham Reference Library 386746.
8. University of Keele Sneyd Mss. Box 66.

Stourbridge was a centre for settling accounts in 1667-75 and there are references in the mid-eighteenth century to payments being made "at Stourbridge". However, Birmingham was probably already a much more important centre of credit. Substantial payments for iron were recorded in the "Birmingham book" amounting to over £4,800 on October 12th 1676.<sup>1</sup>

There was a marked tendency for the more successful ironmongers to move to Birmingham in the decade after 1700. Among the many who did so were the Fidoe, Parkes, Male, Kettle, Fulwood, Lane, Hopkins and Bradburne families. By 1760 "every tenth trader was a banker or a retailer of cash at the head of which were the whole train of drapers and grocers".<sup>2</sup>

1. Hereford Record Office, Foley papers Miscellany. K.b.f.1.
2. Hutton W. History of Birmingham (1809) p.129



Local ironmongers had the usual difficulties in finding sufficient retailers and inn keepers in the Midlands to make returns to London on their bills. John Wheeler made frequent returns of cash to London in the last decade of the seventeenth century.<sup>1</sup>

The agents of Lloyd and Crowley had to write hastily to their principals cancelling arrangements made only two days before, because an unexpected demand for £400 had upset the delicate balance - and this in one of the biggest businesses of the Midlands.<sup>2</sup> Correspondents who were behind with their payments detailed their searches for discounting retailers in Lichfield, Stafford and Burton-on-Trent by way of apology.<sup>3</sup>

There were some facilities. By 1718 Mr. Randolph of Ledbury was advertising in the Worcester Postman that he was willing to undertake the return of bills to or from London, "upon moderate charge".<sup>4</sup>

Edward Sneyd mercer of Stafford was accepting bills drawn on Rotterdam in 1721.<sup>5</sup>

1. Hereford Record Office Foley Mss. D.e.f. 1-13 Wheelers Cash Account.
2. Lloyd Mss (Wooton under Edge) B 55/15 October 22 1702.
3. William Salt Library. Hand Morgan Sneyd 47/6/6 54/15.
4. Worcester Postman No.449 Jan 1717/18.
5. William Salt Library. Sneyd Mss. Hand Morgan Sneyd, 37/36, 24/1.

On June 7th 1748 Aris Birmingham Gazette advertised the sale of the business of John Jones of Walsall and Wribbenhall 'Broker' and on June 16th 1760 that of Christopher Higgins of Loynton (near Newport) 'money scrivener'.

Ambrose Crowley's "tally sticks" and "current notes" were circulating in the Midlands. His brother-in-law Sampson Lloyd also acted on his behalf and made cash available for bills drawn on Crowley in the Midlands to the value of £150 to £200 a week.<sup>1</sup>

Many of the ironmongers held land and were able to exchange bills of credit against payments of rents in the country. Richard Turton of West Bromwich for example "received sums of money of several persons in the country by way of returns for which he charges bills on Joseph (Symcox ironmonger) in London and received monies from Joseph's tenants (in West Bromwich) which were due to him for rent".<sup>2</sup>

1. Lloyd Mss. (Wooton under Edge) 72/15 (Oct.5th 1717)
2. Public Record Office Chancery C 5/568/107.

Every available means of provincial credit was being exploited by the ironmongers, but cash still had to be transported considerable distances by the wagoners, by the Severn trows, and by the servants and agents of the ironmongers. Provincial banking was slow in coming to the Midlands, but when after 1764 banks were established, it was not surprising that Midland ironmongers, experienced in the delicate manipulation of credit, were among the leaders.

From about 1750, it was said, Charles Osborne (2) of Wolverhampton, like his father an ironmonger interested in the manufacture of tobacco boxes, also "returned money as a banker".<sup>1</sup> The first Birmingham bank was established in 1764 by Sampson Lloyd (2) and Sampson Lloyd (3) his son, in partnership with John Taylor senior and junior. Other Midland ironmongers who had moved into banking by 1800 were Abraham Spooner<sup>2</sup> of Birmingham, Thomas Pemberton also of Birmingham, John Finch of Dudley, and William Gibbons and Richard Molhèux of Wolverhampton.

1. Mander G. The Quaker Meeting Wolverhampton Antiquary  
Vol 1. part 6, October 1924 p.164.
2. Sayers R.S. Lloyds Bank in the History of Banking (1957)  
The original capital was £8,000.  
Collis Bank in Stourbridge is said to have been started  
in 1762.

The employment of workmen.

The ironmongers' function was to ensure the production and supply of mass produced articles to large scale and distant markets. They were thus mainly concerned with goods such as nails and choap locks. Correspondingly they were dealing with the less skilled section of the metal workers. In considering the relations between employer and employed it is important to bear in mind that the ironmongers and the nailers and locksmiths they employed represent only part of the pattern of social relationships in industry at this period.

The independent scythesmiths bought their bar iron directly from the ironmasters and made their own arrangements for the supply of German and other steel. Certain spurriers, locksmiths and gunsmiths have also been identified among the ironmasters' customers although not in great numbers. This was not the only supply of iron for such men. Some retail ironmongers selling domestic goods in market towns also stocked small quantities of rod and bar. It is possible that the ironmongers sold iron to the independent craftsmen and the existence in the probate inventories of references to rod iron belonging to the testator suggests that this was the case.<sup>1</sup>

It is quite impossible to establish what proportion of the metal workers were "employed" by the ironmongers and what proportion were "independent". Both groups were probably numerous.

1. Iron was also sold at fairs to smiths and farmers as late as 1732. A.H. John Economic Development of South Wales (1950) p.13.

The numbers of workmen employed by the individual ironmongers must remain unknown. Henry Finch of Dudley in 1644 claimed to employ 100 men in iron manufacture.<sup>1</sup>

Abraham Spooner, whose estimates of iron consumed in the Midlands appear to be fairly reasonable, declared that 5 hands were employed for every ton consumed, each of whom he envisaged as an adult male with a wife and helpless child to maintain. His estimate of the number employed in iron manufacture was 45,000 workers.<sup>2</sup> The largest purchasers of rod and bar from the Knight partnership at that time were buying approximately 100 tons a year, but many were buying only 5 or 10 tons a year. Since we cannot know how much iron these men were buying from other forges we cannot from this calculate the numbers employed. However, it does seem to suggest that while the largest operators may have been supplying several hundred smiths there were many who were dealing with only ten or twenty smiths at most.<sup>3</sup>

The numbers employed by the largest ironmongers had probably increased by the 1760's. A single Birmingham ironmonger exporting to the Plantations was said to have employed 300 men. The Crowley organisation was employing 2,000 men in the Midlands by 1760. Nevertheless, in view of the estimates of the numbers employed, and the large numbers of known active ironmongers the overall impression in manufacture as in commerce is one of multiplication of small units, and of small family concerns co-existing with large enterprises.

1. Historical Manuscripts Commission. Denbigh<sup>nss.</sup> App 5. p.79.
2. House of Commons Journals Vol xxii p.853.
3. William Spencer in Yorkshire employed 120 nailers in April 1742 Sheffield Public Library Archives. Spencer Stanhope Mss.605 05/1 Ap.9. 1742.

Labour relations.

.. The ironmonger's position vis-a-vis his employees was not one of complete domination. It is true that the nailer, as long as he was "in work" was in a state of indebtedness to his employer, whose raw materials he was working on. On the other hand the ironmonger, since he could not supervise the work directly was very much at the mercy of the honesty and industry or otherwise of the workmen. If he could not rely on his workmen he could not meet his commitments to the London wholesalers or the provincial ironmongers. It has become obvious from the probate inventories that most of the smiths had alternative means of income, and therefore they were not entirely without bargaining power. The relationship between the ironmonger and the smiths was a crucial factor in the success of his business.

The price paid for the making of nails and similar goods were to a large extent standardised, and were fixed by the London wholesalers. A list for 1729 for example shows the listed prices which the London wholesaler was prepared to give for 25 types of nails. These lists could be obtained on request by any provincial ironmonger undertaking to supply the London market. The ironmongers or agents in the Midlands would then proceed to negotiate with the nailers to undertake the work at prices which would leave the ironmonger a sufficient profit. The nailers themselves had agreements about prices - or perhaps customs and traditions would be a more appropriate phrase. When Richard Turton was agent for his cousin Francis Symcox, he was able for fifteen years (1668-1683) to get nails made "at such rates as are usually given in the country" but when the London wholesaler in 1682 wanted to reduce prices for work, Richard Turton found it quite impossible to find nailers to make them at the reduced price - so much so that he eventually resigned his post.<sup>1</sup>

1. Public Record Office Chancery C 5/568/107.

Similar problems can be sensed behind the remarks of John Brand of London ironmonger in 1674, writing to his cousin Moses Bird in West Bromwich. "Get what 8½ you can made sharp poynt as well as H poynt. I know 2s 3d is bad work, but trade is bad and I must have them made for that price".<sup>1</sup>

Evidence concerning the ironmongers' bargaining with the work people is comparatively abundant for the Hallamshire district in the correspondence of William Spencer with his agent concerning his "nail manufactory" from 1741-45. His letters discuss the problems of persuading the nailers to work at rates acceptable to the employer. The ironmongers were competing for their services. The nailers were playing one master off against the other, threatening to work for the opposition, demanding higher rates, trying to lower the price of the raw material. Spencer's agent spent much time "discoursing the workmen". Eventually he had to agree to raise prices for work. Even after this a deputation of "ten or twelve of them" came to see the agent asking for further additional prices, and complaining of the quality of the iron. Spencer tried to brave the situation out, told them that his rival ironmonger would not keep to his word of raising their prices, gave them "a treat at my expense" and promised them "continuous employment if good workmen".<sup>2</sup>

Nevertheless, the whole tone of the correspondence indicates that the nailers in the Hallamshire district had a real bargaining power which had to be taken into constant consideration. It also draws attention to the number of points at which the workman could apply pressure. The terms reputedly offered by the Spencers rival included ½d more per 1,000 iron delivered to their homes "or very near" and carriage of the nails to

1. West Bromwich Public Library. Jesson papers J.D. 54 John Brand to Moses Bird. Aug. 4. 1674.
2. Sheffield Record Office. Spencer Stanhope Mss. 61505 i, 60513, 60514. Especially the letters dated between Dec.1741 and Nov.1742. William Murgatroyd the agent told Spencer "The Staffordshire people work 11s per ton under the Yorkshire prices."  
28th April 1739.

Rotherham. Another bargaining point was the price of rod per "bunch". Bad workmanship as a reply to inadequate remuneration was always a feature of the domestic manufacture of ironware. In the Midlands in the 17th century workmen, inadequately supervised, filled up the bags with "nails" having neither heads nor points, and thus endangered Robert Foley's naval contract.<sup>1</sup> In 1749 gun barrel forgers gave notice that unless the prices of work were raised the guns would be "so much the worse".<sup>2</sup> The locksmiths who were dissatisfied with the chapmen's prices sent off the locks without keys.<sup>3</sup>

When really roused the workmen were capable of even more direct action. In 1738 at the time of the disturbance of the export market, the nailers about Dudley and Stourbridge that made for the plantations were reported to be "continuously rising in a tumultuous manner", to the number of 500 to 1,000 and threatening to destroy and pull down the houses and warehouses of their employers.<sup>4</sup>

1. Hereford Record Office Foley Mss. F iv Ta.
2. see below p. 297
3. Price G. Locks and Thief Proof Repositories (1856) p.387.
4. House of Commons Journals Vol.xiii p.111

In 1696 Sir Richard Newdegate of Arbury, Coventry, had reported that the nailers were getting into a body and marching from one place to another in a tumultuous manner" - The Judges of the Oxford and Midland circuits were required to look into his complaints.  
S.P. Dom. 1697 p.240.



In 1745 Aris Gazette reported that the nailers "rose up in a very considerable number and went to the masters hereabouts and obliged them to give them money and to sign an article to raise the price of nails. A small part of them also came to Birmingham and presented the said article to the gentlemen who deal in nails there which was directly signed by them and the nailers were well contented".<sup>1</sup> The Gentleman's magazine gives a more highly coloured account and suggested that there ~~were~~ some attacks on houses by the mob.<sup>2</sup> The local account suggests a much more ordered and organised proceeding. It is not entirely clear, however, since the "masters" might at this date either be the men who employed journeymen and apprentices, or those who regularly bought nailers' products. In either case the newspaper account does suggest that for the moment at least the nailers were able to get their way with the "gentlemen who deal in nails".

A more sinister note was sounded in April when "the nailer who was<sup>3</sup> concerned in the rioting at Stourbridge etc. was capitally convicted".

By the 1740's and 1750's meetings of manufacturers and journeymen to discuss "the gain and price of work" were becoming frequent.<sup>4</sup> There is nothing to show whether these were an old standing practice. The nailers were virtually the only local metal trade which did not hold such a meeting in the autumn of 1759. In spite of this there is enough evidence to suggest that even the least economically independent were not without the ability to combine on occasion, and that their action could be at least a deterrent to ironmongers seeking to lower the prices for the work.

1. Aris Birmingham Gazette 27 Feb. 1743/4.
2. Gentleman's Magazine xix 1744 p.107.
3. Aris Birmingham Gazette 8 April 1745
4. See below p. 297.

The ironmonger's most important "hold" over the nailer lay in the fact that the nailer could not work without becoming indebted to the ironmonger. Even this did not always work to the ironmonger's advantage. Robert Chambers of Smethwick was in a small way of business, described as a petty chapman. In the year before his death 1727-8 he bought two tons of rod from the Stour mills. At his death his neighbours listed the names of 21 nailers who owed him small sums. The total was £16.19.0d that is to say just about half his year's bill for rod iron. The praisers wrote off the whole of these debts amounting to a considerable proportion of his trading turnover as "mostly desperate". The individual sums owing varied from £3.16.5<sup>1</sup>/<sub>2</sub>d to 11d.

There were means of collecting such small debts but they were exceedingly laborious. Dudley Borough Court Rolls show a number of such cases. Richard Smith let Sam Bagguley have one bundle of rod valued at 9s 6d to pay for it when required. Six months later Smith sued Bagguley for 10s. Edward Wainwright a nailer was sued for 34s by William Jewkes for money and iron. One "Mesin" (?Machin) of the Wood owed 18s 6d for "iron delivered him at sundry times". In such cases the court usually gave the defendant a date to pay. This was often deferred many times. If all else failed the goods of the defendant would be <sup>2</sup>distraigned by the constable, but such cases were not numerous.

1. Public Record Office P.C.C. Will and inventory of Robert Chambers of Smethwick 12 Nov.1728. Prob. 3/29/41.  
 2. Dudley Public Library Archives. 25/5.

The collection and despatch of goods.

5. Since the work was carried on in the men's own workshops, the ironmongers' premises consisted only of warehouses and offices where accounting could be carried on. These two functions were often combined in a single room in the ironmonger's own home especially in the cases of the smaller scale businesses.

Stephen Brinton of Gornal was described as a nailer, but by his death in 1687 his workshop had become a warehouse with rod iron and nails worth £32 but no tools.<sup>1</sup> John Bradley of Wolverhampton, ironmonger had a shop and warehouse fronting the street, with his kitchen and "dining room" behind and chambers over the shops.<sup>2</sup>

The more important ironmongers had warehouses to store iron and receive the goods, either at their homes, or by the 1740's in the villages where their nailers lived. They were usually simply furnished with weighbeams, scales and a desk.

The Crowley Company had three warehouses in the Midlands, Stourbridge, Wolverhampton and Walsall. These were inventoried in 1727/8.<sup>3</sup>

All three warehouses contained raw iron. The largest, Stourbridge, held over 126 tons of common tough rods, 5 tons of Maer Heath rod, 2 tons of various special kinds of rod, 20 tons of bar iron and a little raw steel and plate iron. Wolverhampton warehouse contained in addition to various types of rod and bar eleven cwt of rolled iron. The Walsall warehouse was smaller containing 788 bundles of tough rod but no other type of iron.

The warehouses were used for the sorting and storing of nails and goods when made. Stourbridge nail warehouse contained 3,940 lbs. of nails in 1727-8.

1. Lichfield Record Office. Probate. Stephen Brinton Sedgley July 22 1687  
~~XXXXXXXXXX 1724.~~
2. Lichfield Record Office. Probate. John Bradley Wolverhampton.  
Nov. 12 1724.
3. Ipswich Record Office. Ashburnham Mss. HAL/GD/4/13.

In addition to various types of scales for weighing iron and nails, the tools included "boards to lay under the nails" to prevent damage, a large fork to mix the nails, an iron stake to "try" the nails, a box to put the nails into the bags, an iron hammer to settle the nails into the bags.

All the warehouses contained materials for packing the goods, nail bags, twilly and bagging for making them, scythe chests, lock bags, and casks. At Walsall there was a set of steps to load the wagon. There is no indication that work other than storing materials and packing and delivering goods went on at the warehouse. There were a few hammers, one or two anvils and a "jubill to break iron on" but no sign of manufacture.

The clerks were provided with fire, lanterns, candlesticks and 'strikelights'. There was a desk, a cupboard to keep writings in and a "nest of drawers with samples". Each had a "nail order book". Considerable sums of money were handled at the warehouses. There were strongly locked boxes to keep money in and even a "copper money shovel". Stourbridge had a "watchhouse".

The amounts of goods and money at these warehouses at the time of the inventories and at two subsequent inventories indicate the size of the business done there.

		Goods and Cash in Crowley warehouses in the Midlands.		
		1727/8	1732	1739
Walsall	goods	£542. 15. 7d.	-	-
	cash	£ 86. 14. 11d.	-	-
Wolverhampton	goods	£199. 11. 11 $\frac{3}{4}$ d.	£390. 13. 9 $\frac{1}{2}$ d.	£406. 17. 2 $\frac{1}{2}$ d.
	cash	£ 31. 0. 9d.	£189. 1. 4 $\frac{1}{2}$ d.	£ 69. 13. 7
Stourbridge	goods	£2,439. 9. 9d.	£1356. 13. 2d.	£2449. 17. 7
	cash	£295. 15. 0 $\frac{1}{2}$ d.	£461. 7. 10d.	£149. 15. 11.

These valuations are small in comparison with the firm's holdings at its warehouses elsewhere - at Swalwell and Winlaton in the north and Blackwall, Ware and London in the south. The Midlands warehouses represent only about 5% of the total valuation of raw materials, goods, cash and debts; in the firm's warehouses. Nevertheless, they form a striking contrast with the warehouses recorded in the local probate inventories with goods materials and debts valued at £50 or less, a contrast which emphasises the wide range of enterprises which existed in the Midlands.

Weighers and clerks.

The daily routine of the collection and supervision of the despatch of goods required; the employment of a growing number of "white collar workers" by the ironmongers.

In 1702 Ambrose Crowley was seeking to replace Mr. Homfray former nailkeeper at the Stourbridge warehouse. A certain Mr. Hitchinges was rejected as unsuitable as "he had not improved himself but was like a schoolboy uneasy till business was over that he might go to the alehouse". In the same letter Crowley observed "I take notice of the character you give young Wildsmith - I have therefore this day given orders that he be employed as a weigher, and I further order his establishment be 6s per week which if he answereth my expectations I shall make more when with you".

In 1710 he asked his brother John to "look out for some ingenious boy that can write and has served one or two or more years at the locksmith or nailing trade and has a spirit above it".

Altogether between 1684 and 1713 Ambrose Crowley took on 43 "apprentices" for white collar jobs, the majority of whom were sons of tradesmen and yeomen of Stourbridge and its neighbourhood.<sup>1</sup>

From the 1750's advertisements for such posts in Aris Birmingham Gazette become more specific. In 1752 Edward Aston of Tipton wanted "a man that can nail or understands nails and that can write a little to be a weigher and look after house and garden".<sup>2</sup> Again in 1760 "Wanted a sober steady young man of 18 or 20 of mean parentage but honest and unexceptional character, able to write a good hand and understand accounts and willing to do any business he shall be sent about to be employed for a term of 5,6 or 7 years".<sup>3</sup> Or again in the same year,

1. Flinn M. Men of Iron (1962) p.234.  
Lloyd Mss (Wooton under Edge) B 66/15 (Nov 11 1710) and B 54/15 (1702)
2. Aris Birmingham Gazette Jan.20. 1752.
3. Aris Birmingham Gazette Jan. 7. 1760.

"Wanted a sober young man accustomed to a warehouse and taking in of nails and qualified to reckon with the workmen".<sup>1</sup>

These advertisements indicate a new range of opportunity which was opening up for those with a trade and some degree of literacy. At the same time the clerks were coming more and more to act as intermediaries between master and man. The direct contact between the ironmonger and man who made the goods was decreasing in many respects. The making of nails was more and more a rural activity carried on in the industrialised villages. The ironmongers had moved to Birmingham or Wolverhampton, a few even further afield. When the nailer could no longer deal directly with the ironmonger he was in a much weaker position to negotiate the price and gain of work. He also had less opportunity to make judgments profitable to his own interests concerning when, for how long and at what branch of the trade he should work at any particular time.

1. Aris Birmingham Gazette. Jan.28 1760.

The ironmongers and their customers.

1. Robert Foley and Son.

Seventeenth century ironmongers did much of their business by personal contact and word of mouth. Their books and writings rarely survive. Something is known of the dealings of Sampson Lloyd,<sup>1</sup> and Tobias Bellaers of Birmingham<sup>2</sup> from fragments of correspondence.

The activities of a third - Robert Foley of Stourbridge<sup>3</sup> (1627-1677) - can be reconstructed from evidence collected from various lawsuits.<sup>4</sup>

Robert Foley of Stourbridge was the fifth son of Richard Foley ironmaster. His father had a group of furnaces and forges in the Midlands, and was associated with the introduction of the slitting mill. Robert Foley was thus exceptionally well placed to exploit the opportunities opening up in the Midlands iron trade in the seventeenth century. He was engaged in the trade from at least 1648 - that is from the age of 21. He was at that time buying bar iron at Bringewood Forge 40 tons at a time and having it delivered 4 tons a week to one John Norgrove "a man trusted by him for the working of the same by the ton weekly". Robert was also buying anvils and hammers made at Bringewood. About the same time he was purchasing rod iron from William Winchurst a Stourbridge neighbour, who held the lease of Wolverley mill. In 1669 he was recorded as owing £1,710 for 100 tons of rod iron slit at Hyde mill.

While his brother Thomas and his nephews Paul and Philip built up a great network of iron producing furnaces, forges and slitting mills<sup>5</sup> Robert concentrated on the trade of ironmonger. By 1655 he had established a connection with John Stubbins of Bristol, ironmonger who bought

1. Flinn M. The Lloyds in the Early Iron Trade. Business History Vol.II p.28.
2. Wise M.J. Birminsham in the early eighteenth century. Birmingham University Historical Journal. Vol.ii No.1 (1949) pp 64-71.
3. Palfrey H. Foleys of Stourbridge. Worcestershire Archeological Society Vol. xxi 1944 pp 1-13.
4. Principally P.R.O. Chancery C6/133/88, C6/234/23, C6/285/98 and 99 C5/394/45. C10/51/153, C7/312/70.
5. Schafer R.G. Genesis of the Foley Partnership in Ironworks Business History Vol.xiii No.1 Jan 1971 pp.20-24.



ironwares regularly from Robert to sell in Ireland and elsewhere to the value of "several thousand pounds". John Stubbins lodged in Bristol with Robert's brother Samuel who later moved permanently to Ireland.<sup>1</sup>

Robert Foley was also supplying the home market. He had an "ancient familiarity" with Edward Freeman of Birmingham, mercer, who dealt regularly in iron.<sup>2</sup> In 1658 Thomas Rogers of Salisbury came to Bristol to buy nails and there placed his order with Foley's agent at a storehouse in Small Street for nails and horseshoes.<sup>3</sup> Connections of this kind with the westcountry ironmongers were to become the most important part of Robert Foley's trade.

The goods he sold included many kinds of nails - sparrables, lath nails, tack nails, inch brads, and saddlers nails, clasp nails, hob nails, rose nails and inch nails and many more. He sent stock locks, chest locks, cupboard locks, horse locks, box locks varnished and unvarnished, trunk locks and spring locks, till locks and hanging locks. In smaller quantities he supplied awl blades, box irons, sad irons hammers and pattens, spurs, curry combs, horsehhoes; and dripping pans with and without handles.<sup>4</sup>

1. Public Record Office Chancery C10/51/153.
2. Public Record Office Chancery C 6/133/88
3. Bristol Record Office. Depositions Book. 1657-61. p.56. 19 Oct.1685
4. Public Record Office. C8/251 18 and 20.

In 1661 Robert Foley was able to break into the London ironmongers monopoly of Naval contracts. The process by which he achieved this is obscure but the indications are suggestive.

His father Richard Foley (d.1657<sup>1</sup>) and his brother Thomas Foley had supplied cannon, iron ordnance, grenades and shot pike heads and nails to Prince Rupert. Thomas Foley, Robert's elder brother had supplied great quantities of cannon mortar pieces and demi culverins to Cromwell's Navy between 1653 and 1658. Thomas was described as "of London" in the family pedigree of 1663 although he purchased a great estate centring on Great Whitley, Worcestershire in 1664.

The Foley family was thus well known to the Navy Office by 1660, and although Thomas Foley was not called upon for further contracts his younger brother was appointed ironmonger to the Navy Office under the seal of James, Duke of York in 1660<sup>1</sup>. A slight change of personnel and product may have been thought prudent in the atmosphere of the Restoration, but essentially the Foley family prospered by supplying the needs of governments of each political hue in turn.

1. Palfrey H.L. Foleys of Stourbridge Worcestershire Archeological Society transactions Vol.xxl 1944 pp.6 and 7.

The importance of these contracts is indicated by the fact that the previous contractor Robert Ingram of London ironmonger had supplied nails, hinges and ironwares to Deptford Woolwich and Chatham between June 16 1657 and Feb 1658/9 which were valued by the Navy Board at nearly £8,000.<sup>1</sup> Ingram tried to win back the contract by offering a 10% reduction but without success.<sup>2</sup> Rivals in the City could "not understand why Mr. Foley received orders to send nails"<sup>3</sup> but he soon became the main supplier of sheath nails, deck nails and spikes for the Navy ships. Between June 24th 1660 and March 27th 1661 he sent nails for the Navy worth £5,000. He also supplied the royal yacht Henrietta then being built. He cultivated "Squire Pepys" entertained him to a "good plain dinner at the Dolphin" and provided him with various items for his own use.<sup>4</sup>

1. Cal.S.P.Dom. Feb 28th 1658/9.
2. Cal.S.P.D. Sept. 22nd 1661 Vol for 1661-2 p.494.
3. Cal.S.P.Dom. March 2nd 1662/3 Vol. for 1663-4 p.66.  
Jan 13th 1663/4 p.441
4. Palfrey H. Foleys of Stourbridge, Worcestershire Archeological Society Transactions Vol.xxi (1944) p.8.  
References to Mr. Foley as supplier of nails and other items to the Navy occur as follows:  
Cal.S.P.D. March 27th 1661 Vol for 1661-2 p.494  
Sept. 22nd 1661 p.494  
Feb. 26th 1662/3 1663-4 p.56  
Feb. 6th 1663/4 p.470  
Feb. 3rd 1664/5 1664-5 p.190  
May. 22nd 1665 1665-6 p.129  
June 22nd 1665 1665-6 p.133  
May 10th 1668 1667-8 p.384  
May 16th 1668 Addenda 1660-1685 p. 268  
July 6th 1670 1670 p.320  
Oct. 19th 1670 1670 p.487  
May 13th 1673 1673 p.244

It is not without significance that Robert Foley did not himself move to the City or become a member of a London company. He remained "of Stourbridge" living at the Brick House in Stourbridge High Street. This was in spite of the fact that he "was little at home but about his concerns in his way of trade which did lie at a great distance from his habitation".

This being the case he appointed an old associate and neighbour from Stourbridge to act as his permanent agent to the Navy. As he put it to the Navy Board:

"as my occasions require my being more frequently in the country than in London I have appointed Thomas Winchurst the elder of London ironmonger to manage my business as ironmonger to the Navy. I agree to abide by and make good all contracts or agreements made or to be made by him on my account". (Dec 13th 1670)<sup>1</sup>

1. Cal. S.P.Dom. Vol for 1670 13th Dec. 1670. p.575.

The Winchursts were a Stourbridge family, with long standing connections with the Foleys and with the iron trade. Robert Winchurst of Stourbridge ironmonger died in 1660. William Winchurst "a projecting man" had for a time run Wolverley mill. Although the details are obscure it seems that they were able to assist Robert Foley having already established a London connection. Another Navy contractor of this period Nicholas Bradley anchorsmith was in the same group, and was related to the Stourbridge ironmongers of that name. It is tempting to connect a third Navy contractor of this period, John Downing, with John Downing of Cradley Forge, but unlike the Winchurst's and Bradley's no linking family papers have as yet been found.

Public Record Office Chancery C5/527/19 C8/333/36  
C8/290/181 C8/180/58

Robert Foley died suddenly at the age of 53 while on one of his business journeys. He had travelled from Stourbridge to Bristol and thence to Londond where he fell ill and died at his Inn. Shortly afterwards a dispute concerning the property broke out between the widow, his second wife, and his son and heir by his first marriage, Robert Foley 2. In the course of a consequent Chancery case the stock and debts in trade of Robert Foley 1 were listed as they stood at his death. Under the circumstances it seems probable that the following summary represents his trade in full activity.

2/

Goods and debts in trade of Robert Foley at the time of his death 1677 <sup>1</sup>

<u>1. Monies owing to him in trade.</u>	<u>£.</u>	<u>s.</u>	<u>d.</u>	<u>number of debtors.</u>
In and about London various persons	110.	8.	0.	9
postponed bill in the Navy Office	1,334.	16.	0.	
more due in the Navy Office	1,303.	11.	0.	
Around and about Taunton	1,109.	14.	6.	157
Around and about Bristol	2,793.	8.	6½	40
In Worcs. and Staffs.	603.	12.	3.	44
Money in Mr. Robert Masters hands (London money agent)	348.	10.	0.	
<u>total money owing</u>	<u>7,604.</u>	<u>0.</u>	<u>3½</u>	<u>250</u>
<u>2. Goods (ironware) stored in various places.</u>				
at Bristol	333.	16.	5½	
at Exeter	216.	11.	4¾	
at Dartmouth	17.	17.	9¼	
at Southampton	2.	18.	4.	
at Taunton	290.	16.	0.	
at Totnes	13.	7.	6.	
at London	1,500.	17.	2.	
total in goods.				
<u>3. Goods in King's yards.</u>				
at Woolwich	70.	0.	0.	
at Deptford	27.	10.	0.	
<u>4. Trade goods at Stourbridge house.</u>				
nails in shop	68.	19.	5.	
rod iron	3.	15.	0.	
bar iron	14.	0.	0.	
<u>total of goods</u>	<u>2,560.</u>	<u>9.</u>	<u>0½</u>	
<u>total of goods and money owing</u>	<u>10,164.</u>	<u>9.</u>	<u>4.</u>	

1. Extracted from Public Record Office Chancery C8/251 18 and 20.

This summary demonstrates that Robert Foley's business depended mainly on a very large number of small sales spread over most of the Southwest of England. The amounts owing from the 250 debtors listed, vary from a few shillings to over £1,000. The addresses of the debtors are only given erratically but most of the towns mentioned are market towns in the south west. Foley's main markets were all readily accessible by water and were centres of agriculture, population, shipbuilding and to a less extent the textile trades. The very large accumulation of goods in London consisted mainly of large spike nails (Val. £587.10s) smaller nails (Val. £276.2s) and locks, handles and bolts (Val. £50.4s). The appearance in the same lists of cross garnetts, grommets and scrapers suggest that these were for shipbuilding, but whether Naval or merchant ships is not clear. The very small number of debtors listed for London in contrast to the large numbers for the west country suggests that in London Foley was dealing with large scale merchants and accumulating stocks for them, whereas in the west country he was dealing direct with large numbers of retailers and small distributors.

This is further suggested by the difference in the stores in London and in the west country. In London only 19 items are separately listed though it must be admitted that the term "other nails" covers much. In the list for Exeter in contrast 74 different classes of goods are separately listed. Something must be allowed for the diligence of the clerk at Exeter but even so it is evident that in the west country trade it was necessary to maintain stocks of a vast range of types of nails, locks and other ironware. The quantities of each are small - none valued separately at more than £10 - and the customers and retailers must have been purchasing little more than a few shillings worth at a time.

After his death in 1677 Robert Foley's business was continued by his son.

Evidence concerning the activities of Robert Foley 2 is almost entirely confined to his dealing with the Navy. He became standing contractor for a wide range of supplies and continued the agency of the Winchurst family. The correspondence of Thomas Winchurst with his principal at Stourbridge has survived in part,<sup>1</sup> and throws further light on the processes of dealing with one customer for Midlands ironware.

By contract in 1677 he undertook to supply a wide range of goods including 35 different types of nails, several kinds of locks, scrapers, grommets (rowlocks) cross garnetts (tackle hinges) and many other metal fittings for ships.<sup>2</sup> Naval contracts included an abatement in the price for ready money but since the Naval Commissioners frequently found themselves without the cash on the reckoning day ready money contracts often became credit contracts perforce. Despite the higher rates in credit contracts they suited neither the ironmonger nor the Navy. The uncertainty of collection of exchequer bills and Navy bill nullified the advantage.<sup>3</sup> Robert Foley 2 in 1686 was still trying to collect debts outstanding from the Navy to his father from 1670. In that year £28,000 was made available for paying Navy bills and £4,000 of this was due to Foley.<sup>4</sup>

Supplies were sent down from the Midlands in small but frequent consignments. The nails, scrapers and locks were the items most in demand. They travelled by Severn to Gloucester, overland to Lechlade and thence by water to London. Alternatively they might be sent to Oxford by land and then to London by water. They were received, checked and warehoused in London by Thomas Winchurst, and delivered to the Naval dockyards as called for by the shipwrights.

1. Herefordshire Record Office. Foley Mss. FIV ta. 23-98.
2. Worcestershire Record Office. Palfrey Mss. 156/iii. Appendix 8,<sup>324</sup>
3. Herefordshire Record Office. Foley Mss. Miscellaneous (9.Nov.1689)
4. Herefordshire Record Office. Foley Mss. FIV Ta.22 (44)



There were endless difficulties concerning quantities and qualities of goods which the dockyards found not up to specification. Thomas Winchurst reported these complaints to his principal. He explained that the Navy had refused 2 or 3 out of 5 bags of nails "they be of such several sizes" and "the packs were not properly made up as they should have by a dozen bags to a pack". These deficiencies said Winchurst were partly Foleys own fault, for "you put so much business upon the weigher that he is not able to go through with it" and suggests that Foley should go into the store sometimes when they are weighed and see the weights<sup>"</sup> and measure such as you mistrust and make them suffer that offend and then it would scare all from doing the like".<sup>1</sup>

As each order was despatched to London or to other destinations a covering note was sent separately by post or messenger to announce its impending arrival, a necessary precaution when so many delays and accidents happened by the way. Frost and floods, difficulties with the carriers and boatmen, boats sinking and wagons overturning, the pressing of boatmen for the Navy and landmen for the Army, were only some of the impediments to the delivery of goods on time. Correspondingly the agent or customer acknowledged the receipt of packs of goods as they arrived - all this involving considerable clerical work.

1. Hereford Record Office. Foley Mss. FIV TA. 24 & 30.

Difficulties were especially acute in 1687, to make matters worse Winchurst found that supplies from the Midlands were not coming through quickly enough to meet the Commissioners' requirements and he was being forced to buy small lots from Mr. Gibbons, another ironmonger with Midlands connections.<sup>1</sup>

In this situation young Ambrose Crowley III, two years out of his apprenticeship and just setting up his warehouse in Thames Street, began to be "very diligent to get in to serve goods to the Navy and I hear Sir A.D has given him such answers which I suppose will make him desist".<sup>1</sup> The future entrepreneur did not readily 'desist'. Two months later Winchurst wrote:<sup>2</sup>

"Mr. Crowley has lately given notes to several shipwrights that he will supply nails of 3 sorts at 23s per 100 25 and 27. So I went to Mr. Crowley and told him he might do you wrong but no good to himself. So I brought him to this promise that if you will take all your sheathing nails off him he will always have good stock by him for that is the only thing that he intends to be forward in and stocklocks. I told him that if he would put them off with an excusing answer or such a tender as I should advise him to make, you shall buy all your

1. Hereford Record Office. Foley Mss. FIV Ta. 23.  
*Refers to Sir Anthony Deane*
2. Hereford Record Office. Foley Mss. FIV Ta. 32, 92.

sheathing nails of him at 25s per C. So Mr. Perin he and I are to meet and conclude it".<sup>1</sup>

Thus Crowley took what may well have been his first step in implementing the challenge he had made to the Midland ironmongers two years before. He had then threatened to corner the supply of nails to the ship building industry from his new base in Sunderland.<sup>2</sup> The arrangement with Robert Foley continued until at least 1690,<sup>3</sup> but difficulties multiplied. The Revolution brought shipbuilding in the Royal yards almost to a standstill in December 1688. The shipwrights and other workers were pressed for seamen, and work virtually stopped on the ships in the yards. Even by May 1690 the demands from the shipwrights for nails, scrapers and other ironwares remained small.<sup>4</sup> Despite these difficulties Ambrose Crowley persisted in the trade. The first of his independent contracts for Naval supplies which has been traced was for the Portsmouth Yard in 1694.<sup>5</sup> The last reference to Robert Foley as Naval contractor was in November 1690,<sup>6</sup> but in any case his death in 1702 brought to an end the participation of the family of Foley in Stourbridge in the business of ironmonger.

The history of Ambrose Crowley's increasing control of Naval contracts for ironwork to the Navy has been examined in detail from 1694 by Professor Flinn.<sup>6</sup> He shows that after initial sacrifices a "substantial and valuable connection was quickly established"<sup>7</sup> which continued to be an important element in the prosperity of the firm of Crowley throughout the eighteenth century. While the Crowley firm maintained a large scale manufacture in the Midlands the main centre of their business shifted to the North and thus takes us beyond the region under consideration.

1. Hereford Record Office. Foley Mss. FIV Ta. 32.
2. Flinn M. Men of Iron (1962) p.35.
3. Hereford Record Office. Foley Mss. FIV Ta. 92.
4. Hereford Record Office. Foley Mss. FIV Ta. 91.,66,88.
5. Flinn M. Men of Iron (1962) p.147-172
6. Hereford Record Office. Foley Mss. FIV Ta.88.
7. Flinn M. Men of Iron (1962) p.153

Trading Practices in home and Irish markets.

By the Restoration there were retail ironmongers to be found in most market towns. The retail ironmongers were trading on a small scale - their stock in trade usually being less than that of the mercers, grocers or even the chandlers. Like William Stout of Lancaster they often combined the selling of ironwares with other activities, and their sales were only brisk on market days and fair times. Nevertheless, small scale though their operations were they were the ultimate outlet for a large proportion of the Midlands iron manufacture.

The probate inventories of the retail ironmongers in market towns<sup>1</sup> show that the country retailer stocked a very wide range of goods in small quantities. In order to meet his customers' demands he had to stock many different types of nails, locks, and harness parts, supplying retailers must have created great difficulties of distribution for the wholesale ironmongers and perpetuated the practice of dealing through the London wholesalers.

Nevertheless, much direct dealing must have taken place, though it has left little trace in the records.

As late as 1759 evidence was given in the House of Commons how the Masterworkman sells to the Factor, the Factor to the merchant the Merchant to the Country dealers or shopkeepers in large towns who sell to shopkeepers of inferior rank in towns and villages.<sup>2</sup> In the seventeenth and early eighteenth century the Factor and Merchant were still often the same man, namely the ironmonger himself, and he made his contacts with the country dealers in person, or through a member of his own family.

1. Appendix 9 p. .330
1. Lichfield Record Office Probate. John Gilbert, Uttoxeter Jan 18 1660/61  
Lichfield Record Office (Peculiar) Michael Harding Lichfield  
3rd July 1663.  
Worcester Record Office John Watton Stratford-on-Avon 27 Aug. 1711.
2. House of Commons Journals March 1759 Vol. xxviii p.

From the sixteenth century or earlier the Midland ironmongers and scythesmiths travelled in East Anglia and the South East selling their goods in market towns and at regional fairs, or leaving them with chapmen and agents in those places to be sold, and collecting the profits at a later journey.<sup>1</sup> Henry Finch of Dudley in 1644 was prevented by the Parliamentary Colonel Fox from going about his business. He complained to the Earl of Denbigh describing how he had "hitherto vented his commodities in the associated counties of Norfolk and Suffolk and the like. Upon his late journey he carried such wares as are useful for Parliament forces as bits, stirrups, spurs and other necessaries ..... and upon his return bringing hops and barrells of soap". He prayed for a pass into the associated counties and to London.<sup>2</sup>

A hundred years later Tobias Bellaers of Birmingham ironmonger was making similar journeys. He worked with his brother James who lived at Stamford (Lincs)<sup>2</sup> and they sold nails, locks, brass candlesticks and many other items of ironware and brass ware. Their customers were gentlemen and farmers of Lincolnshire, Northamptonshire, Leicestershire, Rutland and Huntingdon. Records of three/<sup>of</sup> Tobias Bellaers business journeys in these parts have survived - his Stamford fair journey March 1719,

1. Roper J.S. Early North Worcestershire Scythesmiths. (1967)
2. Historical Mss. Commission. Denbigh Mss. app 5 p.79.

his St.Ives journey May 1720 and his Spalding journey May and June 1720. These show him travelling thirty miles a day on horseback, making calls on old and new customers. He collected orders, delivered goods and collected money owing. It is thought that (unlike many ironmongers) he did not himself employ workmen but commissioned the locksmiths and hinge makers on behalf of customers.<sup>1</sup>

Traces of the "circuits" of other ironmongers also remain. Robert Chambers of Smethwick, ironmonger, died in 1727. He had £150 owing to him from 35 trade customers in the country. The addresses of these customers are given, and prove to all lie along the road from Hill Morton near Rugby to London.<sup>2</sup> Stephen Brinton of Gornal described as a nailer was in fact an ironmonger in a small way of business.. He had no working shop but a warehouse with £32 worth of nails. He had £16 worth of goods belonging to him lying in the Cotswolds market towns of Burford, Cummor, Stow and Witney.<sup>3</sup> Both of these ironmongers were men in a small way of trade who probably dealt with all the aspects of their business themselves. They are found purchasing small quantities of rod iron. Chambers certainly employed nailers. It would appear that he made journeys to London selling some of his goods on the way, and perhaps the remainder to wholesale ironmongers there. Brinton may have concentrated on the nearest market.

1. Wise M. Birmingham in the early 18th century Birmingham University Historical Journal Vol.ii No.1. 1949 pp.64-71
2. Public Record Office P.C.C. Robert Chambers Smethwick Harborne  
12th Nov.1728 Prob.3/29/41.
3. Lichfield Record Office Probate Stephen Brinton Gornal July 22 1687  
(Consistory)  
He was described as a 'chapman' in a deed of title of  
11th May 1669 (Stafford Record Office 40/117/52)

Contemporaries were well aware of the importance of building up a regular circuit of customers and when a business was sold the "goodwill" of the trade was sold with it. In 1759 when the business of John Williams, saddlers' ironmonger and chapman was sold the advertisement offered the house and warehouse and added that "a purchaser may have good advantage by information of the deceased's circuits and customers".<sup>1</sup>

Midlands ironmongers exporting to more distant markets necessarily continued to act through factors and agents. The Turtons of West Bromwich, the Bradleys of Stourbridge and the Molineux of Wolverhampton are known to have had family connections in America and the West Indies.

A distinction was beginning to appear by 1760 between the ironmonger who dealt with the home trade and the merchant who was mainly concerned with export.

A man who, like Benjamin Molineux, combined both activities was correctly styled ironmonger and merchant. The older term chapman was by 1770 usually reserved for those who acted as intermediary between the merchants and the nailers. It seems probable that this was fairly recent development at that date and for the greater part of the period at present being studied, there was no hard and fast distinction between the ironmonger and the exporting merchant.

1. Aris Birmingham Gazette August 20th 1759.



The Midlands ironmongers were well placed to take advantage of the increasing purchasing power of the Irish after 1660. Midland nails were being sent to Dublin in 1658 by John Ainge of Dudley, and by Robert Foley of Stourbridge.<sup>1</sup> Richard Gibbons of Stourbridge sent wrought iron to Dublin in 1677.<sup>2</sup> By the beginning of the 18th century nails and ironware sent down from Bewdley were being carried to Cork, Dublin and Wexford and also to Youghal, Belfast, Sligo and Londonderry.<sup>3</sup>

As the traffic expanded and became more regular the ironmongers made use of permanent factors, in place of the earlier method of acting through some family connection or friend in Ireland. In 1701 Isaac Spooner of Birmingham and Charles Blackham also a Birmingham ironmonger formed a partnership with John Mercer to trade in ironware in Dublin. John Mercer had formerly been an ironmonger in Birmingham but now removed to Dublin. The three men provided equal thirds of a total capital of £1,000. The agreement was to last one year. John Mercer was responsible for selling the goods in Ireland and any losses

1. Public Record Office Chancery C10/51/53.
2. Bristol Record Society publications Vol.xix p.264  
McGrath P. Merchants and merchandise in Bristol in seventeenth century  
Bristol Record Society Publications Vol.XIX (1955) p. 264
3. Public Record Office Bristol port books. 1701 - 1703.  
E 109 11 61

sustained were to be taken out of his stock in England. The goods were to be shipped in consignments of not more than £300 value in any one ship.<sup>1</sup>

By the middle of the eighteenth century there were in Dublin a number of warehouses selling Midland hardware to Dublin ironmongers. Benjamin Molineux of Wolverhampton had a warehouse at Essex Street, probably founded by his uncle Daniel who had been living in Essex Street, Dublin as an ironmonger in 1723. Several other members of the family had established trading connections with the city. Richard Molineux of Wolverhampton had left his son Thomas £250 to "carry on his trade and business in Dublin" in 1724. Another son John had been trading from Meath Street, Dublin.<sup>2</sup>

Benjamin Molineux advertised the removal of his warehouse to Kennedy's Lane in 1754. At that time he kept 'a constant supply of all kinds of ironmongers goods viz. locks and hinges of different sorts hardware all kinds of carpenter's joiners and shoemakers tools with all sorts of cabinet makers brass, and a sortment of sadler's goods. He was also supplying the new fashioned "Steel and toys that are manufactured in Birmingham and Wolverhampton and Sheffield".<sup>3</sup>

1. Birmingham Reference Library 446192.
2. White M. Notes on the family of William Wood (William Wood married Margaret Molineux about 1700) TS in Lichfield R.O. and private communications. Lichfield Record Office. Probate. Will of Richard Molineux, Willenhall 1724.
3. Falkeners Dublin Journal No.2845 July 27-30 1754 p.4. Mander G.M. The Molineux Family. Wolverhampton Antiquary Vol. II No. 1. July 1934. p.28.

The practice of trading through Irish factors - whether in Ireland or in the English west coast ports - was declining by the middle of the eighteenth century, and English merchants were relying more upon establishing themselves and their employees in their foreign markets as in this case. <sup>1</sup> As the range of hardware goods supplied became more varied especially with the advent of fashion goods, the traditional patterns of trading upon credit began to be slowly replaced by cash trading. In his advertisement Benjamin Molineux stipulated that the goods in the warehouse will be sold "for ready money only upon more reasonable terms than any ever yet imported, the lowest price fixed upon every article and no abatement will be made. N.B. Nothing will be sold by retail". <sup>2</sup>

1. Cullen L. Anglo Irish Trade (1969) p. 107-8, 114
2. Faulkener's Dublin Journal No.2845 July 27-30. 1754 p.4.

Whether the Midlands ironmonger was dealing with the London Wholesalers who supplied the shops in the market towns or dealt directly with their agents and customers in the country much of his business naturally took place at inns. Inns were the great centres of business negotiation, providing not only meeting places for men who spent much time on the move but also yards for storing goods in transit and warehouses from which sales and deliveries could be made. This was of course in no way peculiar to the iron trade. Wagon ers and carriers made regular use of inns, calling and storing goods there. "Inns, as well as being hostelries, were markets, warehouses, hotels, information centres, posting houses, and occasional rudimentary banks".<sup>1</sup>

u/

An early example of the contacts made by ironmongers in this way occur in the Bristol Deposition Book 1657-9. Thomas Rogers of Salisbury ironmonger came to Bristol to buy nails from Robert Foley of Stourbridge ironmonger. He sought out Foley's servant John Russell and asked him whether his said master had any nails in town. Russell took him to a storehouse in Small Street and Rogers made choice of 12 bags of nails and horseshoes. These were sent to the Red Lion Inn in Radcliffe Street where Rogers was staying. When John Russell produced the list of prices for the goods Rogers declared they were too dear and he would not have them. Russell suggested that the 12 bags of nails and horseshoes should be left where they were until Robert Foley could come to Bristol and then Rogers could meet him and agree

1. Everitt A. Change in the Provinces p.41 Professor Everitt is here speaking of the seventeenth century but this was even more the case by the mid-eighteenth century.

prices. However, before Foley arrived the Bristol authorities seized the goods as foreign bought and foreign sold.<sup>1</sup>

There was no such problem in the non-corporate towns, and inns in Birmingham, Wolverhampton and Walsall could act as warehouses without restraint. By the eighteenth century the "Worcester Postman and Aris Birmingham Gazette show inns as the collecting and selling points for every kind of goods from lemons to planes and saws. J. Downes, a Sheffield ironmonger who died in 1724, had packs of goods at "Mrs Yeomans at Bristol and at the White Hart in Birmingham". The latter included quantities of razors, pocket knives, knives and forks, and similarly Sheffield products as well as buttons, tobacco pipes and inkhorns.<sup>2</sup>

Ironmongers met the ironmasters at the inns. It was at the Swan in Wolverhampton that William Seney and his wife would meet George Rock of Brewood forge to make payments for iron received and agree accounts at intervals.<sup>3</sup> Kelsall met ironmongers at inns in Wolverhampton and Stourbridge.<sup>4</sup> The Wolverhampton inns also provided a primitive exchange for the meetings of master locksmiths and the chapmen.

At the Swan at the north end of High Green in Wolverhampton and at the adjoining Angel the locksmiths took up their standing "in front of the inns in order as they arrived, and the merchants and country buyers bargained for their products. The locksmiths were required to take a "ticket" from the innkeepers for a pint of ale as remuneration for the facility provided and the locksmith was also expected to buy

1. Bristol Record Office. Bristol Depositions Book 1657-61 p.56  
19th Oct.1658.
2. Sheffield Record Office TC 1053A.
3. Public Record Office Chancery C8/459/21.
4. Friends House Euston. Kelsall Diary.

one barrel of flour from the chapman in making his bargain. It was remembered - doubtless inaccurately - that "scarcely an instance occurred without the whole manufacture being disposed of".<sup>1</sup>

As far as is known all bargaining and agreement were made by the ironmongers privately with their customers. Newcastle-under-Lyme in North Staffordshire had its official "Ironmarket" in the sixteenth century probably in connection with the nailers of that district,<sup>2</sup> but in the Midlands bargains were made by personal contact if not at an Inn then at the home or place of business of the ironmonger and his customer.

1. Price G. Treatise on Fires and Thief proof repositories (1856) p.876.
2. Victoria County History Staffordshire Vol.viii p.51  
"Sometimes called the Iron Hall".

## The Conveyance of Goods.

### 1. By Water.

The distribution of the goods to the ironmongers' customers was an uncertain and hazardous business. These difficulties do not however, seem to have exercised much limitation on the ironmongers.

The River Severn was the great highway for the distribution of iron pig and bar. The River was only 14 miles from Wolverhampton, was a free River, navigable for ten months in the year for nearly 200 miles upstream.<sup>1</sup> The principal port for the Midlands was Wribbenhall opposite Bewdley. The ironware was warehoused there and at Bewdley by long established family firms of warehousemen,<sup>2</sup> and then shipped in packs and bundles to Bristol in Severn Trows and barges.<sup>3</sup>

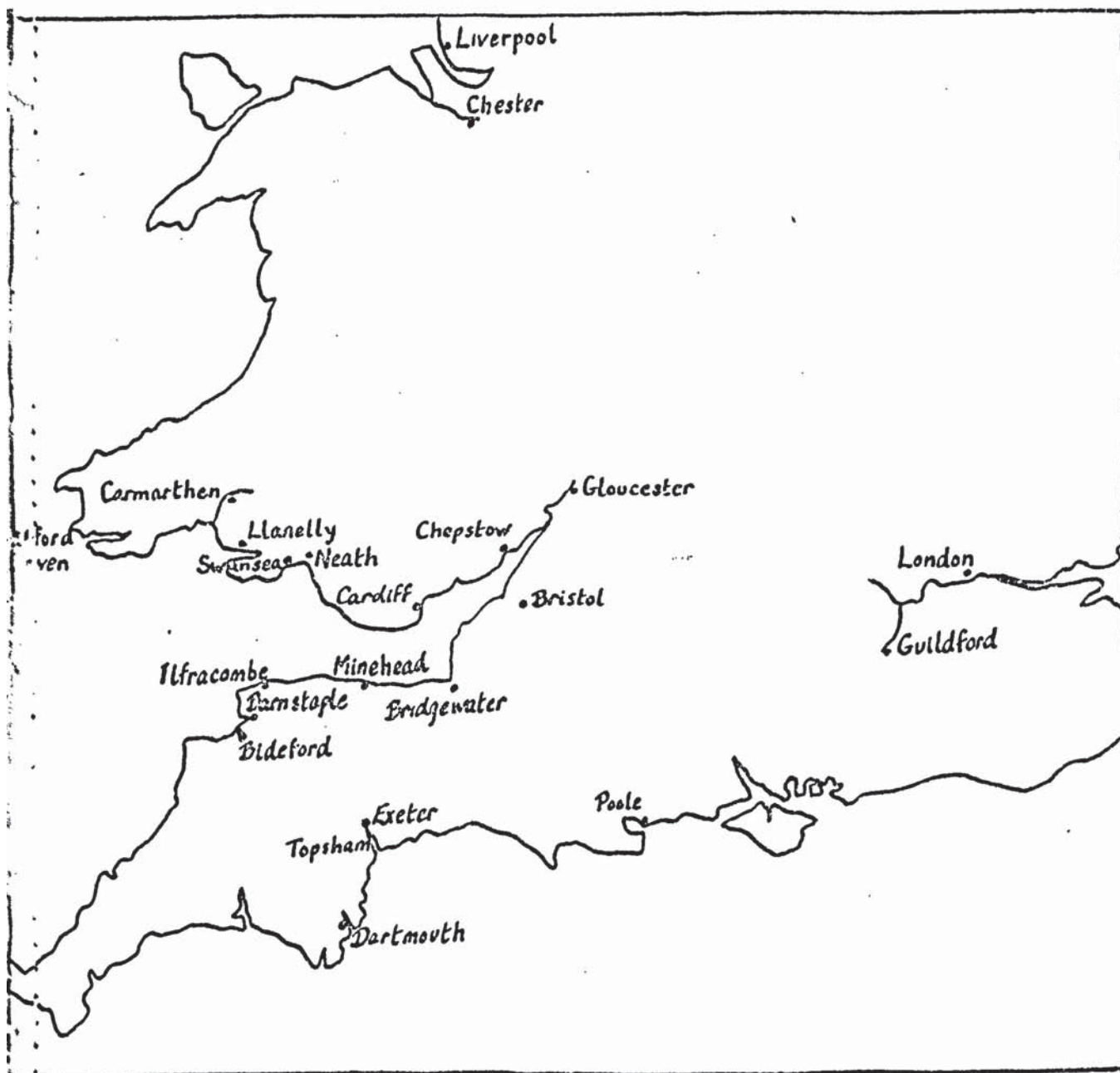
1. Nash T. Worcestershire. (1786) Vol.ii supplement p.4.  
Willan T.S. River Navigation and trade of the Severn Valley  
Economic History Review Vol.viii No.1.p.68.
2. As for example Southwell, Beale, Penn and Cartwright families.  
Worcester Record Office Probate records and advertisements in  
Aris Birmingham Gazette (1743-50) and Berrows Worcester Journal  
(1730-50)
3. The trows were of 40-60 tons burthen the barges 20 tons. The  
ironware was usually shipped in quantities of about 10 tons per  
voyage. In 1758 there were 47 regular trows from Bewdley and  
75 from Bridgnorth.  
Gentlemans Magazine 15th Jan 1758 p.217.  
In 1786 it was observed that "from Manchester Stourbridge and  
Dudley and the ironworks of the Stour innumerable packhorses come  
laden with the manufactures of the places to be put on board the  
barges. At a spring tide I have been told 400 packhorses have been  
for several nights together quartered in this neighbourhood and in  
consequence Bewdley is a very rich and trading town".  
Nash T. History of Worcestershire /<sup>1798</sup>Vol.1. p.83.

Ironware began to be listed among the cargoes being sent downstream from Bewdley to Bristol from the early seventeenth century<sup>1</sup> and by 1630 regular shipments were going from Bewdley and from Gloucester to the ports of Devon and Somerset.<sup>2</sup> By the early 18th century the shipments of ironware from Bristol were going principally to Bridgwater, Watchet, Falmouth and Barnstaple and Padstow, in the West Country and to Carmarthen and Milford and Cardiff in South Wales. In addition there were occasional shipments to many small ports on the same coasts. Shipments to London were not numerous.<sup>3</sup>

1. Dyer A.G. Early trade of Worcester. University of Birmingham Historical Journal Vol.X (1959) p.121. and
2. Willan T.S. English Coasting Trade 1600-1750 (1938)
3. Public Record Office Bristol and Gloucester Port Books. 1701-1703.

By the end of the 17th century Bridgwater was the port for a system of inland distribution by the River Parret to Taunton and so by packhorse all over the West Country.





Ports to which Ironware was sent from Bristol 1701-3

The river improvements of the seventeenth century provided the Midlands with a variety of routes and outlets for their products. By 1660 the Warwickshire Avon was navigable to Stratford. The Thames was navigable to Oxford and by 1700 navigation had been extended to Lechlade. Lechlade became a regular shipment point for Midland goods brought overland from Gloucester.<sup>1</sup>

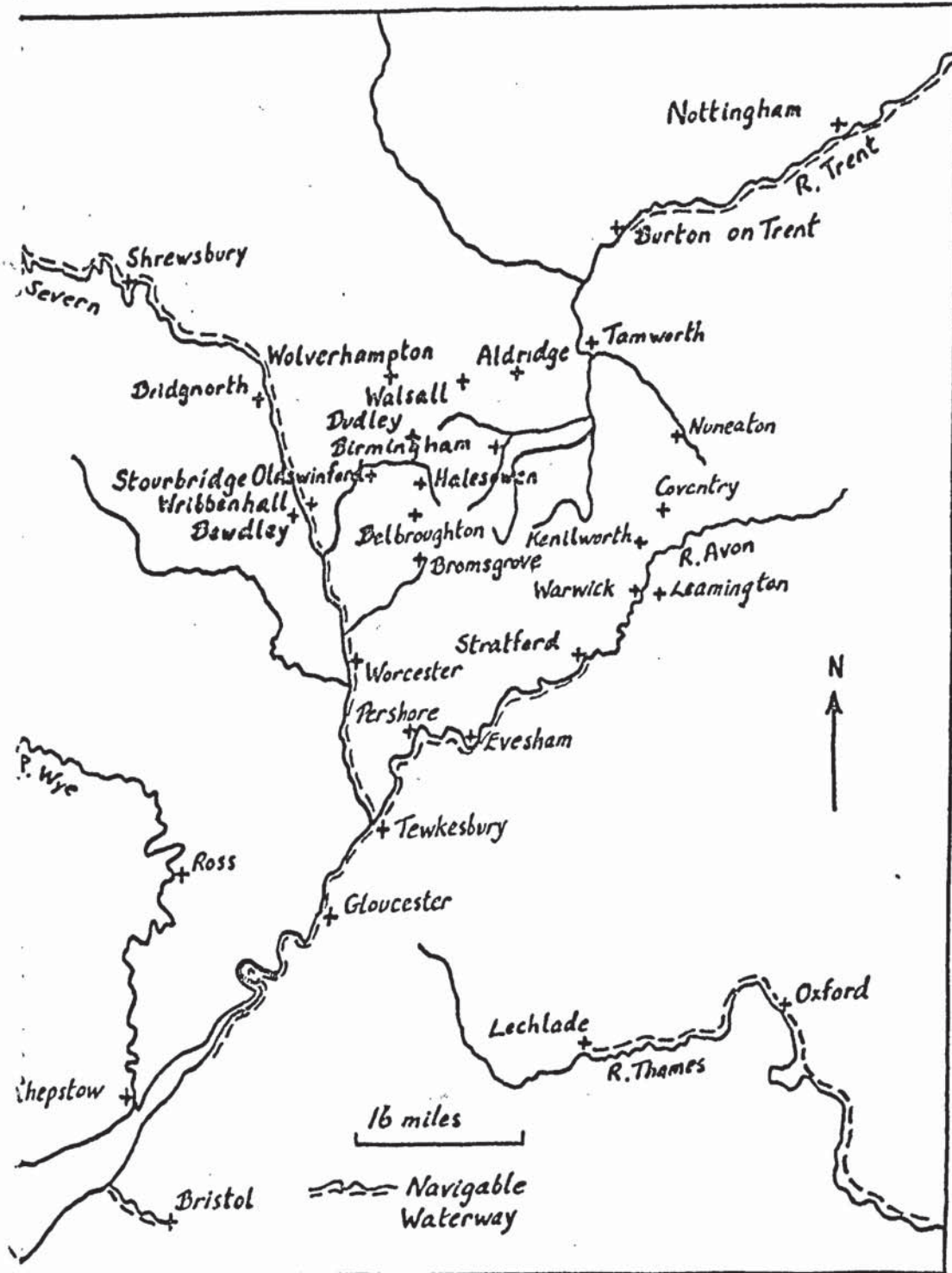
The more ambitious attempts at inland navigation of the first half of the eighteenth century were at first less useful to the Midland ironmongers than might be supposed. The Trent navigation to Wilden ferry, later to Burton, was little used by them, since the partnership who leased the navigation and wharf from Lord Paget discouraged traffic by high freight rates. Birmingham and Wolverhampton were among those who petitioned for an amelioration in 1741. After this date the Trent was more used, and in return for Malt Ale, Iron, Dale planks, hogshead staves, scaffold poles and boards of Oak from Germany and Norway and other places, goods are daily imported and either used by the people or manufactured and sent abroad again to the great increase of the wealth of Birmingham, Wolverhampton and other places of trade and commerce".<sup>2</sup> When the New Burton Boat Company was formed in 1758 Sampson Lloyd and Joseph Wilkes merchant ironmongers of Birmingham were among its leading trustees. Indeed, Sampson Lloyd went so far as to set up an iron mill at Burton.<sup>3</sup>

1. Willan T.S. River Navigation in England (1936)

2. Salt Library Stafford. Wilkes Mss. Vol.2. p.98.

3. Hadfield C. The Canals of the West Midlands (1966) p.16-17.

The Trent still had a bad reputation with the Staffordshire merchants in 1766. They complained that they had suffered in their trade for many years by the 'Badness of the Navigation ... and a Monopoly in the hands of a few persons ...'



Midland Hardware District and its Markets and Ports.

The Weaver navigation opened in 1732 and provided a route between the Midlands and Liverpool, of only 80 miles by land and water. The shipment point was Winsford Although much used by the North Staffordshire potters and coal masters, only three Midlands ironmongers have been identified among its users. These were Edward Aston and Thomas Dudley both of Tipton who were shipping nails 1741-5 and Robert Abney of Birmingham who sent 12 chests of guns north by the Weaver. Very little ironware of any kind appears among the freights, and what little there was can be identified as coming from various saw making and other mills in North Staffordshire and Cheshire.<sup>1</sup>

Freight rates by water are usually quoted as 1 or  $1\frac{1}{4}$  per mile ton mile as opposed to  $5\frac{1}{2}$  or  $8\frac{1}{2}$  per ton mile by land.<sup>2</sup> However, this is an over-simplification. Prices varied greatly according to the nature of goods and the packing and according to the tools and rates of the various navigations. A ton of iron could be sent by sea from London to Bewdley for only 15 shillings per ton.<sup>3</sup> A parcel of 15 dozen scythes from Bewdley to Bristol cost 3s. 6d. for the 80 miles.<sup>4</sup>

1. Chester Record Office. Weaver Navigation Books. Willan T.S. Weaver Navigation Chetham Society Vol.iii 3rd series 1951 Hadfield C. Canals of the West Midlands (1966) pp.18-19
2. Gentlemans Magazine Jan 13th 1758 p.217.
3. House of Commons Journals Vol.xxii p.109
4. Herefordshire Record Office. Foley Mss. D.E.f.

2. By Land.

Ironmongers made much use of land transport. Indeed it was even preferred to water carriage despite the greater expense since the iron sent by water was liable to rust.<sup>1</sup> Toby Bellears selling in East Anglia used only land transport. Goods going to London went by Oxford, Kings Lynn or even Boston. In 1674 Moses Bird in West Bromwich was instructed to send nails for London by way of West Bromwich and Oxford and to increase the size of the bags since 'I pay as much by water for a small bag as a large one'.<sup>2</sup> Under certain circumstances land transport might have an advantage.

1. House of Commons Journals Vol.xxii p.109.

2. West Bromwich Public Library Jesson Papers J.D.54.

Prices for the conveyance of black plate to London from Wildon were in 1745 as follows:

To London by sea	958 boxes	£59
by land	1080 boxes	£60.

The "isolation" of the Midlands hardware district can easily be over-emphasised. The ironmongers had at their disposal extensive services of regular wagoners going south to London and north to Chester, Liverpool and Kendal. <sup>1</sup> In addition to the regular wagoners there were many husbandmen and farmers in the Midlands and in the valleys of Tame, Trent and Severn who maintained teams of horses and in slack seasons, maintained themselves by carrying goods. These part-time carriers undercut the wagoners' prices and made charges by land carriage "as low as by water". <sup>2</sup>

By 1760 such carriers were very numerous indeed. In 1754 it was said that "the chief quantities of coal iron and other foods of this country are carried by men who rent small farms into which these parts are very much divided. They raise little or no corn except for their own subsistence expecting to pay their rents and subsist themselves principally by carriage and generally keep five or six horses extraordinary for that purpose." <sup>3</sup>

1. Even in the 16th century there had been regular wagoners from Lichfield and Stafford to London, and connection could be made with this main route at Sutton Coldfield. Aldridge had numerous carriers who made this connection. A cross route developed through Wolverhampton and Bridgnorth to Shrewsbury, and another a little further south through Dudley to Stourbridge and Bridgnorth. By 1700 there were wagons to London from Walsall, Birmingham, Stourbridge, Aldridge and Wolverhampton, some going three times a week. Regular services were established to Chester and Liverpool. In 1745 a Wolverhampton wagoner was advertising services to Liverpool, Kendal, Whitehaven, Newcastle and Glasgow. He collected goods from Birmingham, Bewdley, Worcester and Kidderminster and had a warehouse in Wolverhampton and in Bilston. His service was weekly from Wolverhampton.

Maps of Staffordshire and Worcestershire Blomes 1671 Morden 1701 Bordeslade and Tom 1741 Kitchen 1751.

Wagoners advertisements in Aris Birmingham Gazette and Berrow Worcester Journal Probate Records.

2. Staffordshire Record Office Quarter Sessions Q/SR Epiphany 1664/5 House of Commons Journals 26th Feb 1729/30
3. Aris Birmingham Gazette. Dec. 23 1754. The parish registers which give occupations reflect the increasing number of carriers and 'horse followers'.

Although available means of carriage transport of goods were unsatisfactory and expensive, the problems were not so great as seriously to impede trade. The ironmongers took little interest in the turnpiking of roads<sup>1</sup> and when Canal navigations began to be built it was the urgent need to transport coal which was to be the principal<sup>2</sup> incentive.

The expansion of the iron trade was not prevented by the inadequate carriage facilities and this again points to the fact that the ironmongers were in a sellers market and that competition among themselves was not very keen. Evidently the customers were eager enough to wait for their goods and to pay prices which included high transport costs.

1. Victoria County History Staffordshire Vol.ii pp.280-281.  
Huffer G. Social and Economic History of Wolverhampton 1750-1850.  
Unpublished dissertation London 1958.
2. Sampson Lloyd was an exception in this respect. In addition to his shares in the Burton navigation he was one of the main projectors of the Wednesbury - Birmingham Canal. However, the purpose was to supply Birmingham with cheaper coal.

The prosperity of the ironmongers.

1. Houses.

If a man's prosperity can be judged by the size of his house the ironmongers of 1660's were of the second rank of local society. Most of the ironmongers who were listed to pay hearth tax were assessed on 3, 4 or 5 hearths. In the villages of the region the list was usually headed by a local gentleman or esquire, and the ironmongers took their place beside the master tradesmen, the mercers and the occasional professional man. A few paid on larger houses - Joseph Turton of Wolverhampton for example who paid on a house of 8 hearths in Dudley Street.<sup>1</sup>

1. Historical Collections for Staffordshire Vol.1923.  
 Hearth tax returns for Seisdon and Offlow hundreds 1666.  
 Public Record Officer Hearth Tax returns Worcestershire 1666  
 E/179/260/5.



Robert Foley's house at Stourbridge - the Brick House - was larger than most and assessed for ten hearths. Only the ironmaster Henry Glover had more in Stourbridge. It had been built by Robert's father Richard Foley the first of the family to gain wealth from iron production. At Robert's death his inventory showed that it had a Great Hall, a little Hall, an inner room and a great parlour. There was an upper gallery and five chambers on the first storey, and also a "men's chamber" and a "maids' chamber". The household furniture and goods though substantial were plain. They were valued at £124. Robert Foley had books worth £3 and plate valued at £17.7.0d. There were 6 horses in the stable, 7 wagon horses, and his own black mare.<sup>1</sup>

1. Palfrey H. Foleys of Stourbridge Worcestershire Archeological Society Transactions. Vol.xxi (1944) p.1-13.

Public Record Office. P.C.C. Will 20th April 1686.

Chancery Inventory attached to deposition in C8/251/18 and 20.

This house passed to Robert's brother Samuel who in 1685 leased it to Daniel Clarke as an Inn. It became the Talbot and the meeting place for the ironmasters.

Worcester Record Office. Palfrey Mss. 3762/146/viii.

In the early years of the eighteenth century there was a marked tendency for the old gentry families of the district to die out or to move away. The Levesons left Wolverhampton after the Restoration and no member of the Giffard family lived there after 1727. The Leveson family of Willenhall was reduced to two sisters who left the town about 1730. The Sheltons of Wednesbury and West Bromwich sold their properties there in the early eighteenth century. The Mountfords of Bescott and Purcells of Walsall Foreign had ceased to be resident in the area by 1715. At Bilston the old local gentry families of Hoo, Pipe and Robins all left the Village in the course of the early eighteenth century. The Offleys ceased to reside in Darlaston.

1. Shaw S. Staffordshire (1801) Vol.2. pp.160-170.
2. Ede J. History of Wednesbury (1962) p.88
3. Homeshaw E.J. History of Bloxwich 1955 pp.  
Willmore E.W. History of Walsall (1887)
4. Lawley G.T. History of Bilston (1893) pp.126-155.
5. Hackwood F.W. History of Darlaston (1887)

A number of these gentlemen's houses came into the possession of leading ironmongers. Holbeche Hall in Kingswinford, formerly belonging to the Lyttleton family was in 1686 the home of John Northall<sup>1</sup> ironmonger. At Wolverhampton the Levesons' Old Hall had been purchased by Joseph Turton ironmonger by 1726. Between about 1692 and 1716 the largest house in the town - the Deanery House was occupied by William Wood ironmonger, ironmaster and projector.<sup>2</sup> John Gibbons<sup>3</sup> of Gornal ironmonger purchased Corbyn's Hall Oldswinford about 1747. An advertisement of that year described it as an estate worth £200 a year. In addition to the house, barns, stables and Malt house it had a dovecote, garden and orchard. There was a "canal" in the garden and eight fish ponds.<sup>4</sup>

1. Public Record Office P.C.C. John Northall Kingswinford 15th July 1686
2. Mander G.P. and Tildesley N. History of Wolverhampton
3. Perkins M. Dudley Banks and Bankers (1905) p.135
4. Aris Birmingham Gazette July 1677.



Illustration removed for copyright restrictions



Illustration removed for copyright restrictions

Others built themselves new homes of dignity though not pretension. Molineux House in Wolverhampton and the Finches house in Hampton Lane Dudley are examples which still stand. These and those like them, Lloyd's house and Pemberton's house which are known from photographs and engravings, are all well built, dignified, large enough to support a good standard of living, moderate in ornamentation but solid in construction.<sup>1</sup> They are in fact exactly similar to the town houses of gentlemen of the period. The ironmongers' houses were set off by large and fashionable gardens of which the Molineux garden is the best known.<sup>2</sup>

1. Woodbrooke, Birmingham. Bevan Nash collection.
2. The local Press shows Benjamin Molineux and other ironmongers taking an interest in the newly established Flower Show and Horticultural Society.



Illustration removed for copyright restrictions

Nowhere was the life style of the wealthier ironmonger seen to better advantage than in the Old Square, Birmingham. John Pemberton, ironmonger acquired property on the site of the old Birmingham Priory about 1695 and proceeded to organise the building of an elegant square in the London style. Leases of the land were not completed until the builders had erected the houses so that conditions about the proportions, and the regularity of doors and windows could be enforced to give a seemly and dignified uniformity to the Square.

Sixteen properties were built and by 1719 nine of them were inhabited by ironmongers including John Pemberton himself and his father. As the houses changed hands in the course of the century the predominance of ironmongers was maintained.<sup>1</sup>

John Fidoe ironmonger lived at No.13 in the Old Square between 1713 and 1788. He furnished the house with elegant furniture including an oval table, a mahogany dumb waiter and tea table, a glass cabinet, a writing desk and a set of cane chairs. There were two bird cages, and in the Dining room a tea kettle and lamp. His cupboards contained china, glasses, decanters, and jelly glasses. His bedroom curtains were of calico. His plate was valued at his death at £113.15.3<sup>2</sup>d and included a gold watch. In his stable there was a "Charriot" a Chair and a horse and mare worth £7.10.0d.<sup>2</sup> By comparison with some country gentlemen of the period this was modest, but by comparison with the inventory of John Fidoe, his grandfather, ironmonger of Wednesbury who died in 1686 it was gracious living.<sup>3</sup>

1. Dent J. and Hill C. Memorials of the Old Square (1897)  
Birmingham Reference Library 324166
2. Public Record Office P.C.C. Inventory John Fidoe 8th Jan 1738/9  
Prob.3/38/2.
3. Lichfield Record Office Probate.  
John Fidoe Wednesbury 8th June 1686 (Consistory)





Illustration removed for copyright restrictions

Although the emphasis was on elegance and dignity a number of houses in the Old Square had warehouses attached to them and there was at least one smith's workshop in the Square. On the corner of Bell Street nearby, the new Quaker Meeting House was built, thus appropriately completing the Old Square, a microcosm of the world of the eighteenth century Midland ironmongers.

The smaller scale ironmongers lived in houses indistinguishable from those/<sup>of</sup>the artificers and yeomen.. The warehouse was part of the dwelling house itself, especially in towns. John Bradley of Wolverhampton for example had a shop and warehouse fronting the street.

The kitchens and dining rooms were behind the shops, the chambers above and the garrets above that.<sup>1</sup> John Wilkes of Sedgley had a house with parlour and houseplace and warehouse on the ground floor and three rooms above. There was in addition the entry and a little room over the entry. Thomas Wall of Bromsgrove had a separate warehouse with scales table and coffers containing £16 worth of nails. His house was simply a hall with a chamber over and another chamber over the "lower chamber".<sup>2</sup>

The furniture in these homes was no different from that in the homes of their neighbours - though some might include a desk or "scrutore". The value of their furniture and goods exclusive of trade and husbandry often only amounted to £15 - £20.

1. Lichfield Record Office Probate John Bradley, Wolverhampton  
Nov.12th 1724.
2. Lichfield Record Office Probate John Wilkes, Sedgley  
Jan 13th 1681/2  
John Wilkes had goods at Burton and Uttoxeter.  
Similarly Henry Hodgkinson of Walsall 1680 Dec.31st.  
Worcester Record Office Thomas Wall Bromsgrove 5th June 1676  
Edward Detheridge Hagley 25th Jan 1696/7

2. Other sources of income.

Although the ironmongers bought substantial houses and lived in a gentlemanly way they continued to depend mainly on their trade and business for their income. There is little sign that they were using their wealth to found landed estates. When they bought land it was often in small parcels and usually within the region. This is true of both the leading ironmongers and the numerous small scale ironmongers. They can be traced buying small properties on adjacent manors.<sup>1</sup> Cottage and house building continued as a favourite form of investment - as for example Elwalls buildings on Snowhill, Wolverhampton built by the ironmonger Edward Elwall.<sup>2</sup>

1. The Palfrey Mss. and the Abel Jackson Mss. at Worcester Record Office, the archives of the Earl of Dudley at Dudley Public Library, the Birmingham collection of deeds at Birmingham Public Library, the Knight Mss. at Kidderminster Public Library, all contain numerous examples of these transactions. Families which could be cited as examples include the families of Deykin, Prinn, Wilkes, Payton, Finch, Compsons etc.
2. Elwall. C. The Iron Elwalls (1964) p. 85.

A source of profit ready to hand in the Midlands was the investment in coal and iron bearing land, and a number of ironmongers availed themselves of this opportunity. Thomas Dudley or Tipton gentleman and ironmonger had coal bearing lands in Tipton Sedgley and Holloway End and coal pits in Tipton.<sup>1</sup> Richard Parkes in 1708 leased a moiety of the mineral rights of the manor of Wednesbury from Richard Shelton for £400 and entered into partnership with him.<sup>2</sup> John Fidoe of Wednesbury, later of Birmingham, ironmonger invested in coal mines in Wednesbury and in 1723 set up a Newcomen engine to drain them, at a cost of over £400.<sup>3</sup> It was possible to obtain short leases of small quantities of coal and ironstone bearing land for as little as £8 or £10 a year, and there was usually a ready sale to the forges and mills of the district which habitually used coal, or to the working smiths.

1. Worcester Record Office 4000/560
2. Ede J. Wednesbury (1962) p.89
3. Allen J.S. John Fidoe's engine at Wednesbury Transactions of Newcomen Society xxxvi 1963-4. p.149

A number of the ironmongers undertook shares, mortgages or partnerships in forges and mills. As a rule these extensions of their activities were secondary to their principal business and often shortlived. The Jennens family of Birmingham are exceptional in transferring their interests from the distribution to the manufacture of iron.

Most ironmongers remained mainly interested in ironmongering. Such were the Finch family in the mid-seventeenth century with an early furnace in Dudley and Stourton Forge<sup>1</sup>, "newly erected" in 1673 but soon made over to the Foleys. The Russells were for a short time interested in Brock forge in Lancashire.<sup>2</sup> Sampson Lloyd acquired two forges as well as<sup>3</sup> his slitting mill. Ambrose Crowley II had at his death a steel making forge and an iron forge in Stourbridge, and a "share in the iron works at Brecknock", and he was a partner in an undertaking to supply water to the towns of Exeter and Barnstaple.<sup>4</sup> Francis Homfray of Stourbridge was described in 1740 as a "person whose business is chiefly to buy his iron and manufacture it into nails, but I think he lately undertook a small forge near in Stourbridge".<sup>5</sup>

On the whole the ironmongers showed little inclination to diversify their interests.

1. Hereford Record Office Foley Mss. FIV K.B. and FVI K.E.
2. Awty B.G. Charcoal Ironmasters Lancashire and Cheshire Record Society 1958
3. Flinn M. Lloyd family in the early iron trade Business History II p.28-9
4. Public Record Office P.C.C. Will of Ambrose Crowley and inventory.
5. Sheffield Public Library Archives department 60  
Spencer Sitwell Mss. 60513 T.C. to William Spencer June 10th 1740.

3. The wealth and continuity of the Ironmonger families.

The actual wealth of the ironmongers can only be guessed at. The fragmentary evidence from wills and family histories suggests that in their various degrees they were prosperous.

The Stone family of Walsall had been burgesses of that town for many generations and thirteen of that name had undertaken the office of Mayor of Walsall. In 1604 Henry Stone was among those presented to Quarter Sessions as having enriched themselves at the expense of others by trading in iron goods to London and elsewhere.<sup>1</sup> In the next generation Henry Stone II was one of the principal purchasers of rod iron from the Foley partnership.<sup>2</sup> In 1663 he was described by a royalist agent as having £200 a year (in estates),<sup>and</sup> a great stock of money. He was said to be a violent Presbyterian, but of great interest in the country.<sup>3</sup> At his death in 1689 he left property in Staffordshire Warwickshire and Cornwall to his son.<sup>4</sup> This son Samuel Stone continued his father's business though he did not long survive his father. In his will he was described as a gentleman and among personal legacies he left a diamond ring and a silver tankard.<sup>5</sup>

1. Appendix 2.
2. Hereford Record Office Foley Mss. Bustlehome accounts and Stone Partnership accounts.
3. Staffordshire Historical Collections 4th series Vol.II p.30.
4. Public Record Office P.C.C. Henry Stone Walsall 19th Sept.1689.
5. Public Record Office P.C.C. Samuel Stone, Walsall 12th June 1700.

The styles and titles by which these ironmongers were distinguished reflect their rising social status. The grandsons of the "petty chaps" and 'wholesale chapmen' of the seventeenth century appear as the "gentlemen who deal in nails" or as in the case of Joseph Turton of Wolverhampton "Esquire, Cabinet Lockmaker"<sup>1</sup>. By the mid-eighteenth century they are usually styled "Gentleman" if not "Esquire" though it is evident; in the better documented cases that they spent their time in business activities.

1. Sketchley's Directory of Wolverhampton 1770.



The most remarkable rise to wealth achieved by any of the ironmongering families was that of the Crowleys. Ambrose Crowley I had at his death movable goods valued in his inventory at £24.<sup>1</sup> This included his forge and farm tools and 2 cows. His son Ambrose Crowley 2 lived and died at Stourbridge and at his death his properties and his trade debts were valued by his praisers at £1,181.3.8d. He had by this time, however, been living in semi-retirement for some years.<sup>2</sup> Ambrose Crowley 3 of London and Newcastle died worth £100,000 and more.<sup>3</sup>

Other families show the same pattern on a less dramatic and exceptional scale. Richard Molineux of Willenhall died in 1727. His house consisted of three storeys, kitchen, parlour and buttery on the ground floor, chambers and garrets above. He had a Probate inventory of £589 but was himself indebted to others for £420.<sup>4</sup> His sons Benjamin<sup>5</sup> and Richard each built themselves large houses in Wolverhampton out of the profits of trade with Ireland and the West Indies. By 1818 the family were bankers and styled esquire in the Directories.<sup>6</sup> In 1780 George Molineux was the first member of an ironmongering family to become Sheriff of Staffordshire, preceding Matthew Boulton by one year.<sup>7</sup>

1. Worcestershire Record Office Probate.  
Ambrose Crowley. Rowley Regis, 30th Oct. 1686
2. Public Record Office P.C.C. Inventory of Ambrose Crowley of Stourbridge 4th July 1721 Prob. 3/20/150.
3. Grossby R. Personal Wealth of the Business Community in 17th Century England. Economic History Review 2nd Series  
Vol. xxiii No. 2. Aug 1970 p. 227
4. Lichfield Record Office Probate Richard Molineux Willenhall. 1724
5. Map of Wolverhampton Isaac Taylor 1750.
6. Bridgen's Directory of Wolverhampton 1818.
7. Shaw S. Staffordshire (1798) Vol. 1 p.  
Mander G.M. The Molineux family. Wolverhampton Antiquary  
July 1934. Vol. 2. No. 1. p. 18.

Similar family histories could be built up for the Turtons, the Fidoes, the Bissells, the Homfrays, the Jevons, the Bradleys, the Smith family of Wolverhampton, and many more. All show families moving in three generations from comparative obscurity to wealth, gentry status and positions of considerable local influence. The continuity of leadership within the trade is most marked. The ironmongering families continued in business in many cases from the early seventeenth to the late eighteenth century despite wars foreign and domestic, commercial crises and political upheavals.

The Midland ironmongers were operating in a context of rapidly growing markets both overseas and at home and in an expanding market the ironmongers were in a very strong position. The goods did not deteriorate in the warehouses. There was constant demand at home for the products if foreign trade fluctuated. In time of bad trade they could always "put off the workmen". Bad weather, changes in the wholesalers' prices, fluctuations in the markets non-delivery of iron for a few weeks, the frost stopping the iron mills or dissatisfied customers - all these problems could be met by "putting off the workmen". It was the smiths rather than the ironmongers who suffered from bad trade, especially when they were wholly dependent on their hearths for their living.

This was evident during the "crisis" years of 1736-9 when there was considerable dislocation in the overseas markets especially the West Indies. According to evidence given to the House of Commons the demand for goods in the West Indies had fallen off so drastically that warehouses were overstocked, thousands unemployed, and the poor rates in Wolverhampton had risen from 2s to 8s in the pound.<sup>1</sup>

1. Sheridan R.B. Wealth of Jamaica in 18th century Economic History Review 2nd series Vol.xviii (1965) p.292.  
 "For a time Jamaica was an armed camp. British troops, local militia, Mosquito coast Indians and even bloodhounds were mobilised" to suppress internecine violence. Trade was further interrupted by the disputes with the Spanish and the French.  
 House of Commons Journals Vol.xxiii p.110.

There is no indication that the ironmongers suffered as a result of these difficulties. Ironmongers' bankruptcies were not more numerous in these years. The amounts of iron they ordered from the ironmasters were reduced, but not drastically and the orders soon recovered. The price of iron fell considerably - from £17 a ton to £15 a ton - which must have been more damaging to the ironmasters than to the ironmongers.

The small metal industry as practised in the middle of the eighteenth century in the Midlands had evolved without great change from the methods and practices of the Middle Ages. The industry in both its manufacturing and its commercial aspects was still an aggregation of many small enterprises drawing capital from a large number of small investments. This simple structure had shown itself capable of sustaining great expansion and growth.

1. Little is known concerning ironmongers' bankruptcies. Evidence is derived solely from the Press and from casual references in family papers.

Alone among the Midland ironmongers Ambrose Crowley 3 broke out of this traditional pattern. At the age of 26, in his "challenge" to the Midland ironmongers he evaluated the opportunities of the day. He was able to see that the period of conflict with the Dutch was a thing of the past - "there is little danger of it in this present age" that cheap mass production of simple articles could be simplified and made more efficient by concentrating his workers, and by reducing his transport costs. He deliberately located his industry not according to tradition or raw materials but according to the availability of water transport to the principal market - London and the Dockyards. He saw labour as a mobile force "easily proquered" to move to a place of work profitable to himself as long as he could promise them journey money and cheap victuals. He saw the relationship between population and industrial activity. "The cuntry is poor and populous soe workmen must of necessity increase". Even more important than the perceptiveness of his theory, he was successful in carrying his initiative through in practice. Even he, however, never abandoned the more traditional patterns in the Midlands where he continued to be a major employer of men in their own shops.<sup>1</sup>

The older patterns of organisation were eminently suitable for the mobilisation of resources in a society in which there was an ample supply of labour and of time.

1; Flinn.M. Men of Iron (1962) p.35-7

The factors which might be seen as inhibiting growth such as slow transport, poor credit facilities, inflexible output rates, certainly caused difficulties for those who supplied the customers, but not to anything like the extent imagined by those looking at them from the standpoint of a technological society. The industry supplied necessities of building and agriculture and the customer was forced to wait until he could be supplied. The overall picture is one of great stability, with little internal competition or incentive to innovation. Nevertheless, as the trade expanded both overseas and at home, new opportunities began to arise which could not be fully exploited without recourse to new patterns of trading.

Part Five.

Changes in products and production.

1710 - 1760.

Growth and change in the Midlands hardware industry 1700-1760.

1. Increasing consumption of Midland products at home and abroad.

The years 1700 - 1760 saw a dramatic change in the consumption of goods produced by the Midland metalworkers. While the demand for the traditional products of the region increased both at home and abroad, new opportunities opened up in supplying fashion goods to new classes of consumers. Skills were adapted, goods were increasingly made of brass and other alloys as well as the traditional iron. These changes led to the introduction of new methods of organisation and eventually created a demand for new methods of production.

Demand was growing in the first place for those goods traditionally made in the Midlands. The increase in domestic comfort and personal possessions demonstrated in domestic inventories became most marked between 1700 and 1760. Agricultural innovation increased rather than decreased the demand for tools. The demand for saddlers' ironmongery increased. Draught horses were increasingly used after 1740. The growth of vehicular traffic and of home and overseas trade demanded the equipping of more horses for carrying goods. The turnpiking of roads, and the growth of spas and watering places, stimulated travel, and thus increased the demand for spurs, bits, surcingles and stirrups, for riding horses.

As population grew and the "second great rebuilding" got under way the demand for nails and locks for houses must have increased notably. In Wolverhampton in 1673 only 543 houses were listed as paying hearth tax or as exempt. By 1750 the town had 1,440 houses and by 1780 there were 2,270.<sup>1</sup>

1. Collections for a history of Staffordshire William Salt Society  
Vol. 1923 p.46.  
Wolverhampton Reference Library. Local maps. Isaac Taylor 1750 and  
Godwin's map 1780.



Sedgley had 259 houses taxed and untaxed in 1666 and about 1,000 by 1780. Willenhall had 134 houses taxed and untaxed and by 1760 there were 250 families.<sup>1</sup>

In housebuilding it was usual to allow 500 nails per bundle of five-foot laths for roofing, and 200 (240) per square yard of flooring.<sup>2</sup> The building of a single substantial house in Wolverhampton involved the use of nails to the value of £22. 7. 4d.<sup>3</sup>

The advertisements in the Worcester Postman (from 1711) and Aris Birmingham Gazette (from 1743) show speculative building proceeding apace especially in Walsall, Birmingham and Wolverhampton. Developments similar to this, taking place in many parts of England, must have greatly increased the demand for Midland nails, locks and hinges.

1. Collections for a history of Staffordshire (William Salt Society)  
Vol. 1923 pp. 92 and 158.  
William Salt Library Wilkes Mss. SMS. 466, 467, 468. Vol. I p. 86.
2. Chambers Cyclopaedia 1741 edition (revised edition of 1727)
3. S.R.O. Giffard papers. D 590/634

It was not only for these traditional products that demand was growing. Much attention has been paid by historians in the last decade to the growth of a new market for "decencies" among the "middling consumers". It has been suggested that the comparatively low grain prices of the second quarter of the eighteenth century, combined with stable wages and increased agricultural production, provided a substantial number of consumers with a margin above subsistence which they spent on manufactured goods and better food and clothing.

The range of goods being increasingly consumed was wide. The small consumer was buying more and cheaper cloths, light woollens, calicoes and cottons. He was buying more leather and more buttons and buckles. He was using more soap and candles. He came to prefer Burslem pottery and glass drinking vessels to pewter and treen. He was eating more white bread and drinking more beer. His wife demanded tea. These changes all showed that with a better margin above subsistence the man of little means could afford to buy goods which were attractive as well as practical, to buy more often and to replace articles which, though more attractive were less hardwearing and long lasting. He could afford to spend a little on comfort and fashion.<sup>1</sup>

The Midlands hardware manufacturers were well able to produce new types of goods which appealed to these consumers. Bucklemakers and locksmiths could readily turn their skills to making small metal articles for the home or for personal use which were not "necessities" but "useful and ornamental".

1. E.L. Jones. Agriculture and Economic Growth. Journal of Economic History XXV (1965)
- A.H. John. Agricultural Productivity and Economic Growth in England. 1680-1750 Journal of Economic History Vol. XXV (1965)
- A.H. John. Aspects of English Economic Growth in the first half of the Eighteenth Century. (1961) Economica (1961)
- T.S. Ashton. Changes in the Standard of Comfort in 18th Century England (1955)
- A. Everitt Change in the Provinces (1969)
- D.C. Coleman. Labour in English Economy (1956) Economic History Review Series 2 Vol. VIII pp. 280-295.

Overseas trade followed much the same lines. There was a rapid increase in the export of traditional iron products overseas and this was supplemented by the development of the export of fashion goods and "decencies".

Until the middle of the seventeenth century manufactured goods exported from England consisted almost entirely of cloth. Between 1640 and the earliest date when regular figures became available - namely 1694 - there was established an export trade in a variety of manufactured commodities. Metalwares accounted for only about 3% of the total export of manufactured goods by 1700 but this, nevertheless, was the largest export after textiles.<sup>1</sup>

1. Davis R. English Foreign Trade. 1660-1700  
Economic History Review Vol. VII (1954) (New Series)

In 1722-1724 metal wares accounted for 7% of manufactured goods exported; by 1752-4 this had risen to 9% and again by 1772-4 to 14%.

The most rapid period of growth had been in the period 1730-1755 but even before this the export of metalware had been rising steadily unlike the export of other manufactured goods which stagnated in the first years of the 18th century.<sup>1</sup>

The increase had been greatest in the export of wrought brass and wrought copper. The export of wrought brass averages nearly 1,500 cwt in the five years between 1698 and 1702. For 1755-1760 the average was 16,000 cwt. The export of wrought copper increased in a similar degree. The export of wrought iron increased seven fold in the period. The export of nails showed a less marked increase but even in this case the export tripled.<sup>2</sup>

average	cwts. brass ware	cwts. wrought copper	cwts. wrought iron	cwts. nails.
1698-1702	1,475	1,176	19,478	11,336
1756-1760	16,070	9,172	135,188	30,782

1. R. Davies. English Foreign Trade 1700-1770 Economic History Review 2nd Series Vol. XV (1962) his figures are as follows:

	<u>total manufactures</u>	<u>metalware</u>	
1699-1701	3583	114	3%
1722-1724	2784	181	7%
1752-1754	6350	587	9%
1771-1774	8487	1198	14%

2. Taken from Schumpeter E.B. English overseas trade statistics 1697-1808 (1960) table VIII. The well established weakness of the customs house figures as statistics do not invalidate the general pattern. *Summary of figures Appendix 10 p. 334*

The Midlands ironmongers were well placed to make an early entry into the export trade. It was known as early as 1657 in the Barbados that "nails of all sorts with hooks hinges and clamps of iron are to be had at Bromingham in Staffordshire much cheaper than in London".<sup>1</sup>

The River Severn and the port of Bristol provided them with ready access to the fastest growing of the markets for English metalware, namely the American colonies. The population of the Plantations in America and the West Indies rose from 300,000 in 1700 to 3 million by 1776. Their purchasing power increased five fold. This market in 1700 was taking almost four fifths of the total export of nails and about half the total of the export of wrought iron.<sup>2</sup> At that time ships were leaving Bristol almost every week bound for Virginia, Barbados or Jamaica and carrying nails, hoes, bills and scythes, and other wrought ironware from the Midlands.<sup>3</sup>

1. Peckham R. The West Midlands iron industry and the American Market. University of Birmingham Historical Journals  
Vol. XI No. 2. (1950) p.
2. Davis R. English Foreign Trade 1700-1777 Economic History Review  
2nd Series vol. XV 1962.  
Schumpeter E.B. English Overseas Trade Statistics (1960)  
Table VIII
3. Public Record Office. Bristol Port Books 1701-3 E 190/1160  
There is no clear evidence as to what extent the Midland ironmongers were exporting wrought iron and nails to Europe, since such exports went through the London merchants. The general export of wrought iron to Europe increased four fold 1700-1760, though the export of the typical Midlands product - nails - was declining. Appendix 10 p. 351

The transatlantic markets continued to be most important for Midland hardware of the traditional kind the more especially since Midlands goods held the advantage of cheapness over similar goods produced in the colonies. The colonists were able to produce their own iron goods; they had the raw materials and the skills. From 1718 the mother country's prohibition of manufacture was beginning to break down. In 1718 Massachusetts council was encouraging the manufacture of iron goods by a bounty system. Boston was exporting axes to Carolina, and Rhode Islanders made anchors.<sup>1</sup> After 1750 the controls were largely ignored or even openly flouted by colonial governors.<sup>2</sup> Rolling mills, slitting mills and the domestic manufacture of nails, scythes and firearms began to spring up wherever conditions were favourable.<sup>3</sup> However, the Midlands ironmongers were, nevertheless, able to maintain their export of hardware to the New World because they could produce the goods more cheaply. Axes made in Massachusetts cost 6 shillings; the same article in England only 2s 6d to make. The ironmongers were themselves aware that great though the expansion of the export to the New World had been it was not commensurate with the increase of populations there. By 1760 it was becoming evident that English goods would only maintain their advantage as long as prices could be kept low and as long as the protection of colonialism could be enforced.

1. House of Commons Journals Vol. xxii p. 852.  
xxiii p. 112-3.
2. Bining A.C. British Regulation of the colonial iron trade (1933)
3. especially in Massachusetts.

In addition to selling nails, locks and scythes, the Midlands began about 1710 to export large quantities of fashion goods both to Europe and to the colonies. By 1712 "London Birmingham and divers other parts of England were sending English watches, clocks, locks, buckles, buttons and all sorts of brass toys to France". In 1728 England was sending "daily great quantities of wrought iron and brass to Holland, France, Italy, Venice and to all parts of Germany". The Midlands was already making locks and buckles and quickly adapted these skills to the production of buttons and toys.<sup>1</sup> These trades were well established in Birmingham and the parishes of the South Staffordshire coalfield by 1720. In 1759 it was estimated that "toys" to the value of £600,000 were made in these parts, and that five sixths were exported.<sup>2</sup> Similarly in the following year it was said that buckles worth £300,000 were made each year, and that the "greatest part" were exported.<sup>3</sup> The goods went to both the European and the colonial markets.

Another commodity which the Midlands began to export from the early eighteenth century was guns. Trade with Africa was "laid open" in 1698 and in 1708/9, 1709/10 and 1710/11 the cutlers, gunbarrel manufacturers and workers in wrought iron of Birmingham and the Midlands petitioned that the trade should remain open. They spoke of the great demand for their goods for export, goods being sent abroad in "greater quantities than were ever known before". The export trade, they claimed, gave "daily employment to vast numbers".<sup>4</sup> In 1766 it was said that from Birmingham "they send annually above an hundred and fifty thousand guns to the coast of Africa ...."<sup>5</sup>

1. Hamilton.H. English Brass and Copper Industries (1967 edition)p.138 quoting pamphlets of 1714 and 1728.
2. House of Commons Journals Vol. xxvlli pp.496-7.
3. House of Commons Journals Vol. xxvlll p.882-4.
4. House of Commons Journals Vol. xv pp.602,625, and 631 and vol xvi pp. 71,15, 77, 102 549-50.
5. Smith B. The Galtons of Birmingham Business History Vol. lx No.2. 2nd July 1967 p.139.

Professor R. Davis writing of the expansion of the American export trade drew attention to the way in which "it contributed very significantly to the eighteenth century development of iron and brass industries in England".<sup>1</sup>

Professor John has demonstrated the importance of the home market in stimulating new products, improvement in techniques and increasing the demand for labour.<sup>2</sup>

In the case of the Midlands hardware iron industry the export and the home markets were expanding at the same time. Broadly speaking the same products satisfied both. Certainly they required the same techniques. There is perhaps little to be gained by attempting to distinguish between them, the more so as many Midland ironmongers and the men they commissioned, worked indifferently for both markets. Indeed, as Matthew Boulton pointed out "orders taken from patterns sent to correspondents abroad take 6 or 12 months before they are returned while patterns for the home trade generally return in a month or less whereby constant employ is found for the workmen and the Home trade supports the foreign".<sup>3</sup>

Together they proved to be a great stimulus to increasing production by division of labour, by specialisation, technical innovation and in further consequence, to the development of larger units of production. Most notably of all there was a great diversification of products between 1710 and 1760.

1. Davis R. *The Commercial Revolution* (1967) p. 20.  
*English Foreign Trade 1700-1774* Economic History Review  
2nd Series Vol. XV 1962 p.
2. John A.H. *Agricultural productivity and economic growth 1700-1760*  
Journal of Economic History Vol. XXV 1965
3. *House of Commons Journals* vol. xxviii p. 496-7



Increased specialisation and new trades. 1710-1760.

In the case of the Midlands hardware trade it is possible to chart with some precision, and in considerable detail, the response made by the industry to expanding markets at home and abroad and in so doing to pinpoint the first symptoms of those changes in industrial organisation and production which were to have revolutionary effects in the latter part of the eighteenth century.

A survey was made at the beginning of this study of the variety and distribution of trades within the hardware industry in the second half of the seventeenth century. If a similar survey is made of the range and distribution of the metal trades for the period 1760-1770 it is at once apparent that great changes had taken place.

The traditional industries had continued to expand. It is one of the notable features of the Midlands hardware trade that the new methods did not displace the old. New possibilities were opened up, new patterns of production and employment were introduced while the older trades continued to expand<sup>1</sup>. The two trades least affected by change were nailmaking and scythemaking. Nailing was increasingly a rural industry, the part time resort of the poor. The trade had left Birmingham by the end of the 17th century and Wolverhampton early in the eighteenth. Walsall and Dudley had only 10 nailers between them by 1770. Nevertheless, according to one computation there were no less than 40,000 men and women and children from 7 years old in the trade in the surrounding parishes of industrial hamlets and heath lands. The most numerous were in Tipton, Coseley, Darlaston, Sedgley, Gornal, Brockmore, Wordsley and Kingswinford.<sup>1</sup> At Bromsgrove in 1777 there were 960 persons engaged in nailing<sup>2</sup> establishing themselves in the Catshill and Dodford areas.

1. Nash T. History of Worcestershire (1799) Vol.2. Corrections and Add. p. 57.
2. Victoria County History Worcestershire Vol.2. p.272

Even after the introduction of machine nailing about 1810 the numbers of hand nailers continued to increase, but almost entirely in the villages and hamlets rather than the towns.

In Chaddesley Corbett and Belbroughton the traditional trade of scythemaking continued to flourish. The complex and interrelated processes of scythemaking did not easily adapt to produce new types of goods. In any case the superior profits and status of the scythemaker took away one of the chief motives to seek new products and new markets. "As long as the kingdom is peopled there will be a certain demand for scythes" declared Waldron Hill about 1787. He believed about 10,000 dozen per year were then being manufactured in the district and saw no prospect of any diminution.<sup>2</sup>

The scythemaking industry of the north Worcestershire parishes was to remain a waterpowered, rural industry until the second half of the twentieth century.

1. Williams and Jones nail factory in Birmingham was in existence by 1812. Tann J. The Development of the Factory (1971) p. 86.
2. Worcester Record Office. Foley Scrapbook Vol. 1. p. 94a (n. d).

Increasing specialisation and adaptation of skills.

In Wolverhampton, the principal centre of fine lockmaking there were by 1770 118 lockmakers producing 26 different types of locks. There were those who specialised in padlocks, cabinet locks, rim locks, mortice locks, crosset locks, locks for park gates and many others. Similarly at Willenhall, there were 138 locksmiths producing 19 different types of locks. Some of the locksmiths worked in iron but many were using brass to make fine locks for cabinets and boxes. In addition key making had become a separate trade from lockmaking and there were six specialist key makers in Wolverhampton by 1770.<sup>1</sup>

1. Sketchley Directory 1770. Birmingham Reference Library 60356

All references to the Directories in this chapter are from this source. They cover the towns of Wolverhampton, Bilston, Dudley, Willenhall, Wednesfield and Walsall. There are 324 entries relating to 70 metal trades. The 1767 Directory covered only Birmingham in detail although there is a short list for Wolverhampton (Birmingham Reference Library 348585)

See Appendix II. p 335

Bucklemaking had changed more than any of the traditional trades. The subdivision of processes between the various workmen noted by Dr. Plot had become even more marked. The bucklemakers included specialists characterised as buckle-filers, buckle-forgers, buckle-tongue forgers and buckle-tongue filers. There was, in addition, a large body of men described as chape-makers and chape-filers who made the iron tongue of the buckle which they then passed on to the bucklemakers for assembly with the buckle ring.

There were many different kinds of buckle for different purposes and buckles of both brass and iron were made in Walsall, Wolverhampton and Bilston.

There were said to be 8,000 bucklemakers in Birmingham and district and 2,500 iron chapemakers. Many of these were engaged in the production of attractive fashion buckles for personal wear. In addition to the raw materials used by seventeenth century bucklemakers - iron and a little tin - they were by 1760 using copper, brass and spelter (zinc) and were decorating the buckles with glass "jewels" and alloys which gave the effect of gold and silver.<sup>1</sup>

In addition to the changes taking place within the traditional industries of lock and buckle-making, there were an increasing number of smiths specialising in the production of a single item for the home. Individual smiths or at most two or three families, in the towns of Wolverhampton, Dudley, Walsall, were making it their business to produce chafing dishes, fenders, tinderboxes or candlesticks. One Wolverhampton smith produced watch rings. Two more specialised in the production of clock hands.<sup>2</sup>

The first woodscrew maker in the Midlands was recorded at Wolverhampton in 1720.<sup>3</sup> By 1770 there were 28 woodscrew makers in the

1. House of Commons Journals Vol. xliii p. 882-4.  
 2. Sketchley's Directory 1770. Birmingham Reference Library 60356  
 3. William Sturt of Wolverhampton woodscrew maker took an apprentice. 1720 Public Record Record Office Register of Apprentices I.R.I Vol. 43.

town. There were also 2 pen engine makers and 9 makers of temple frames - all items reflecting in their different ways the changing demands of the home market. Response to the need of the overseas market was perceptible in the specialisation of a Wolverhampton smith in making "negro collars and handcuffs".<sup>1</sup>

The production of guns was established in Birmingham by the end of the seventeenth century and in Harborne, Bilston, Wednesbury and Darlaston in the early years of the eighteenth century. Birmingham was always the principal centre of this trade. Nevertheless, gunlock forging was being practised in Wednesbury by 1707.<sup>2</sup> There were two forges in Wednesbury by the middle of the eighteenth century producing the high grade iron suitable for gun making. One was Wood's forge, the other - a horse driven forge - was Adams forge.<sup>3</sup>

The processes required by a gun maker could be acquired by an able and intelligent lockmaker though the work was both laborious and highly skilled. For the barrells the "skelp" was rolled out, cut to the required dimensions and bent into a cylinder until the edges overlapped. The skelp was then raised to welding heat, a solid rod or mandrill introduced inside, and the iron hammered on the lapped part to weld the edges together. Alternatively the barrel was made by winding a narrow strip of iron round the mandrill in a spiral fashion, the edges then being welded together to form the barrel. The gun lock required great precision in the filing. It took five years practice to produce a skilled lock filer.<sup>4</sup>

1. Sketchleys Directory 1770. Birmingham Reference Library 60356
2. Parish Registers Harborne, Bilston, Wednesbury and Darlaston and Northfield.
3. Bevan G.R. British Manufacturing Industries (1876) Vol.iii p. 36.  
Ede J. History of Wednesbury (1962) pp.131-2.
4. Hackwood. F. Wednesbury Workshops (1889) p.271  
These processes were known as the Wednesbury skelp and the Wednesbury Twist.

Because of the variety of skills required, gun making became a trade which was known for "the number of hands they go through before complete". These included the Barrel maker, the Borer, the Filer, the Ruff Stocker, the Lock forger, the Lock filer, the Engraver, the Polisher and the Finisher.<sup>1</sup>

By 1760 some at least of the gunmakers in the manufacturing villages were manufacturing on a considerable scale. Thomas Hopkins of Wednesbury went bankrupt in 1768. His stock put up for sale consisted of 1490 gunbarrels, 50 pairs of brass and iron pistol barrels, 800 finished gunlocks and more than 200 partly finished gunlocks. He had large stocks of materials including 2 tons of bar iron. The sale was advertised in Birmingham and London as well as in Wednesbury.<sup>2</sup>

The list of new specialities could be considerably extended and the very range and variety of these specialities<sup>3</sup> indicates a new attitude to manufacture - a seeking out of markets.

1. Chambers Cyclopaedia 1741

"from this place all the Kingdom is supplied with barrels and locks and the consumption abroad is very great".

2. Aris Birmingham Gazette 25th April 1768.

3. William Sidaway of Rowley Regis for example was a Jews Harp maker in the 1740's. He bought his iron from the Knight partnership.

Most of the new trades were established in the northern parishes of the hardware district where coal was most plentiful. Needlemaking however, spread from central Worcestershire where it had established itself round Redditch about 1730 and there were needlemakers in Brimsgrave by 1767.<sup>1</sup>

A growing number of men were working to produce tools for other tradesmen. The earliest reference to a file cutter was in 1715.<sup>2</sup> By 1770 there were 17 listed in the Directories.<sup>3</sup> John Beckett vice maker of Bilston had his will proved in 1718.<sup>4</sup> Men made a living as bellows-makers,<sup>5</sup> awl blade makers<sup>6</sup> and rule makers. By 1770 there was<sup>a</sup> nail nipper maker.<sup>7</sup>

All these trades were developments and variations on the traditional skills of the nailers, lockmakers and bucklemakers. Doubtless chafing dishes, candlesticks and similar articles had been made as required by seventeenth century smiths. When in the early eighteenth century a family began to specialise in producing such articles, very little adaptation of skills was required and almost no industrial investment.

1. House of Lords Mss. Return of Papists 1767.  
also at Tardebigge and Beoley.
2. Public Record Office. I.R.I. Register of Apprentices. John Briggs of  
Wolverhampton.
3. Sketchley Directory 1770 Birmingham Reference Library 60356  
Appendix. 12
4. Lichfield Record Office Probate John Beckett Bilston 1718 Peculiar.
5. Sedgley Parish Registers Richard Floyd of Sedgley 1732, 1734 and  
1736. Lichfield Record Office Probate William Grainger  
Wolverhampton 1738 Peculiar.
6. Sedgley Parish Register Pershouse family from 1690.
7. Sketchley's Directory 1770. Birmingham Reference Library 60536  
See Appendix.

The new trades.

Between 1710 and 1750 there were introduced into the Midlands a number of new trades which did mark a very significant departure from the past - namely toymaking, japanning, and enamel box making. These articles were produced not only for use but for ornament - ornament of the home or the person. They gave the purchaser a sense that he possessed something of beauty and elegance yet at a price which he could afford.

1. Toymaking.<sup>1</sup>

Toymaking was from its inception a fashion industry, an attempt to provide cheap imitations of the elaborate trinkets sold to aristocratic travellers abroad. A traveller in Italy in 1714 wrote that the trinkets, snuff boxes and steel toys which he saw there "could be had better and cheaper in London and Birmingham".

1. "An infinite variety of Articles come under this denomination and it would be endless to attempt to give an account of the whole, but for the information of strangers we shall here observe that these artists are divided into several branches as the gold and silver toy makers who make trinkets, seals, tweezers, tooth pick cases, smelling bottles, snuff boxes and Philligree work such as toilets, tea chests, inkstands etc. The Tortoise toymaker makes a beautiful variety of the above and other articles as does also the steel toymaker who makes corkscrews, buckles, draw and other boxes, snuffers, watch chains, stay hooks, sugar nippers etc. and almost all these are likewise made in various metals and for cheapness, beauty and elegance no place in the world can vie with them". Sketchley's Birmingham Directory 1767. Birmingham Reference Library.



The earliest reference so far discovered to a toymaker in the Midlands occurs in 1714 when Thomas Allen of Bilston, toymaker took an apprentice.<sup>1</sup> Nine other toymakers of Wolverhampton and Bilston are recorded as taking apprentices by 1730. In 1737 it could be said that there had been a great increase in manufacture "especially in the toy trade at Wolverhampton."<sup>2</sup> One of the earliest to engage in the trade there was Charles Osborne the soldier son of a Bilston curate. In 1697 he gave up the Army, turned Quaker and settled in Wolverhampton where he established "a shop of workmen to make tobacco boxes".<sup>3</sup>

By 1759 there were said to be about 20,000 people employed in the toy trade in Birmingham and district. The raw materials used included iron, copper, brass, zinc and in the finishing processes small quantities of gold and silver.<sup>4</sup>

Steel jewellery first became fashionable about 1750 and soon became very popular providing elaborate and showy imitations of the jewellery of the really rich.

1. Public Record Office. I.R.I. Register of Apprentices.
2. House of Commons Journals Vol. xxi p.854.
3. Shaw S. Staffordshire (1800) Vol. III p.163.  
In 1718 Benjamin Little tobacco box maker of Wolverhampton  
March 1759, took an apprentice. Palfrey Foley Scrapbooks  
Vol. V Worcester Record Office.
4. House of Commons Journals. Vol xxviii pp.496-7

For steel jewellery Swedish wrought iron was required. It was out and tooled in elaborate patterns in such a way as to get the maximum reflection of light. The iron was then packed in cast iron pots packed with charcoal and heated for four or five days. It was then transferred to another cast iron pot, covered with powdered bone and heated to bright red for at least twelve hours. The steel was then removed from the containers and slowly immersed in cold water. The faces of the hardened parts were then polished on lapidary wheels using an emulsion of tin, lead or tallow in order to produce a highly polished surface. The work was extremely skilled, required great concentration and was usually carried on by one craftsman with a couple of apprentices or journeyman.

The trade reached its fullest development in the reign of George III. John Woralow, a Wolverhampton craftsman, was paid 180 guineas by that Monarch for a set of steel jewellery buttons.

## 2. Japanning.

By the middle of the eighteenth century the smiths were applying to metal the technique of japanning hitherto used on wood in imitation of eastern goods.

Samuel Stone and Joseph Allen were japanners in Bilston in 1719.<sup>1</sup> Both were also called toymakers and there was probably little precision in the use of these terms. A man who made japanned or "lackr'd" buckles might be described as a bucklemaker or a japanner. Increasingly japanning came to be associated with the use of ready prepared japanned plate, and so with the making of flat objects such as tea tables, waiters, trays: large and small.

By 1770 four men were listed as japanners at Bilston and 7 at Wolverhampton.<sup>2</sup>

The materials and techniques used were a considerable departure from tradition. The "japan" itself was a mixture of turpentine, balsam, various oils, pitch resins and wax. Black "japan" was produced by the admixture of lamp black, but various dyes and gums were also used to produce red, yellow and gold. After 4 or 5 coats of this varnish had been brushed on to the article, it was heated for 24 hours and then polished by hand with rushes or other soft polishers to produce a smooth and shining finish.<sup>3</sup>

1. Bilston Parish Register. Staffordshire Parish Register Society (1934).

2. Sketchleys Directory 1770 Birmingham Reference Library 60356.

The first reference to a japanner in Wolverhampton is that to Thomas Whitwick japanner who took apprentices from 1755.

3. Gibbs, F.W. Historical Survey of the Japanning trade. Annals of Science Vol.ii pp.401-16 Vol.ix pp.88 and 197.

Sheet metal rather than black plate was used at Wolverhampton. Victoria County History Staffordshire. Vol.ii. p.178.



Illustration removed for copyright restrictions

### 3. Enamelling.

From about the middle of the eighteenth century the boxmakers of Birmingham, Wednesbury and Bilston began to use enamel finishes on a base of copper or brass<sup>1</sup>, thus providing yet another commodity for the middling consumer - the elaborately decorated snuff box, trinket box or medallion.

The earliest unequivocal references to enamelling occur from 1751 but it is possible that the practice was adopted by the Midland smiths from the late 1740's. By 1770 there were 8 men described in the Bilston Directory as enamellers, but many other box makers may well have been enamelling their products. The goods made included snuff boxes, patch boxes, toilet sets, trays, dishes, candlesticks, inkstands, toothpick cases, quadrille pools, smelling boxes, clock and watch faces, and trinkets for ladies' watches.

1. Benton E. Bilston Enamellers. Transactions of the English Ceramic Circle Vol. vii No. 3. p. 166-186

This article supersedes all previous works on this subject and disposes of many unproven assertions. It shows that enamelling was practised in Birmingham and Wednesbury by 1751, but that there is no evidence except tradition, and the possible identification of some of the objects themselves to show that enamelling was being carried on in Bilston before 1760.

The metal object - usually, but not necessarily, of copper, was made and cleaned. A clear colourless flux was applied and the object was then fired in a "muffle furnace". The resulting fusion produced a hard white surface. The enamel decoration was then applied with fine brushes and further firings made. The colours and tints were produced by adding certain oxides of metals to the basic flux. Great skill was required in judging the right proportions of the ingredients, and in maintaining the right temperatures during the firings. The box painter spent many tedious hours in grinding and sifting the materials for the flux, and the painting itself was a matter of the utmost precision and artistic talent. Sometimes the box painter was responsible for the fine work on the lid while his apprentice did simpler work on the sides. It is agreed by connoisseurs that the earliest examples are the finest and involved the highest degree of personal skill.

1. Cope T. Bilston Enamels. pamphlet published by Staffordshire County Museum Shugborough. 1966

Benton E and others. Gilt metal and enamelwork of the Eighteenth Century. Catalogue of an Exhibition at the Art Gallery, Royal Leamington Spa, September 1967.

The decorations on the boxes often achieved the most exquisite delicacy of colouring and of line, and indicated the taste of the purchasers. Classical scenes of shepherds and nymphs abound, landscapes with ruined pillars, classical swathes of flowers and fruit.<sup>1</sup> By the 1760's cheaper and less artistic boxes were being manufactured for the souvenir trade of Spas and watering places. Even the Bilston lunatic asylum was commemorated, though whether for the benefit of visitors or inmates is not clear.<sup>2</sup>

The materials required by the enammellers were obtained in Birmingham in small quantities. In Bilston certain smiths specialised in the production of the gilt metal frames, mounts and hinges and eventually these came to be sold not only in the Midlands but to manufacturers in London and Birmingham.<sup>3</sup>

1. Collections at Bilston Museum and Art Gallery Bilston and at Bantock House Museum Wolverhampton.  
Also private collection of Mr. E. Benton.
2. Mander G.P. Sam Proud's Snuff Box. Wolverhampton Antiquary Vol. 2. No. 2.  
p. 53-5.
3. Cope T. Bilston Enamels (1966) p. 3.

The origins of the transition to the new trades.

To change from the lockmaking or bucklemaking trades to the toy manufacturing trade did not require much capital. The workshops of the toymakers were at first little more elaborate than those of the lockmakers. They were valued for probate at between £5 and £10. Even the tools in the exceptionally elaborate workshops of John Pinson of Bilston (1751) were only valued at £11.9s.0d. A number of the probate records of early toymakers show that they held customary and freehold lands locally which were subject to small mortgages of £40 - £100 and by this means or the straight loan "on speciality" a man with a small holding of land and good standing in the community could readily raise sufficient capital.<sup>1</sup>

There is no evidence to suggest that there was any marked recruitment of men from outside the region. Until at least the middle of the eighteenth century apprentices in the metalworking industries came from nearby parishes and local families.

e.g. William Allen of Bilston (Probate 1st July 1736)  
 Edward Beebee Bilston (Probate 1764)  
 John Hawksford Bilston (Probate 30th April 1713)  
 William Smith Bilston (Probate 14th June 1748)



Between 1710-18 the apprenticeship of 210 boys and girls in the region was registered for taxation purposes. 80 were apprenticed to the metal trades, and of these 25 were in Wolverhampton. Almost all these apprentices came from contiguous parishes or at most from parishes within half a day's journey of the place of apprenticeship. Only 2 boys came from further afield one from Derbyshire and one from Cheshire.<sup>1</sup>

1. Public Record Office. Apprentice Registers. I.R.L. Volumes 41-5.

Of 715 poor law immigrants into Birmingham 1686-1726 70% came from a radius of 20 miles, and many of these from contiguous parishes. Unlike the Sheffield region, it has not been possible to establish any marked tendency to move from agricultural parishes to the industrial parishes. The random evidence of advertisements for runaway apprentices in Aris Gazette after 1745 suggests that by that date there was some tendency for boys from the counties of the Welsh Marches to be apprenticed in the Midlands.

B/

Court W.H. Rise of the Midland Industries pp.49-50.

Until 1692 all came from Staffordshire, Warwickshire and Shropshire.

Pelham R.A. Transactions of the Birmingham Archeological Society Vol. LXI (1937) pp.45-80.

Linton D.L. Sheffield and its Region (1950) p.173.

The families who first appeared as boxmakers, japanners and toymakers were almost without exception the sons of bucklemaking, lockmaking and yeomen families in the parishes of Sedgley, Bilston and Wolverhampton. There was little distinction at first between the various branches, the same man being variously described as bucklemaker, japanner, or as toymaker and boxmaker, suggesting that one trade was a specialisation of the other, and that it was the metalworkers themselves who were responsible for the transition. At Bilston the more successful of the early toymakers formed interlocking groups of closely knit families. These centred round Dovey Hawksford of Nechells (1695-1749). Isaac Smith and his family, and Esther Dovey and the connections of her fifteen grandchildren.<sup>1</sup>

1. Benton E. Bilston Enamellers Transactions of the English Ceramic Circle Vol. vii 1970 part 3 p. 166.

This article disposes of the tradition of "French workmen" perpetuated by respectable authors. Mr. Benton does show that the Curate of Bilston, Richard Ames was closely associated with several of the early toymaking families and suggests that his origins in Newcastle-under-Lyme may have given him a knowledge of glazes. He also shows that Dovey Hawksford had connections with Warwick and that he visited that city at a time when there was an enameller at work. Both these indications relate to the introduction of enamelling, which did not establish itself until about 1750, twenty-five years after the first introduction of toymaking as a separate trade.

At Sedgley six families entered the trade of boxmaking all of them living in Cinderhill or in Etingshall both places on the side of the parish adjoining Bilston. Only two other boxmakers are mentioned one at Gornal End and one at Gornal Wood. The boxmakers came from Sedgley families of nailers, labourers and husbandmen.<sup>1</sup>

In Wolverhampton the names of the men practising the new trades Allen, Beckett, Bridgen, Cartwright, Clark, Cooper, and Hutbache for example indicate that they were of local families. A typical case was that of the Coopers, locksmiths in the late seventeenth century but changing to toymaking by 1720.

1. Sedgley Parish Register Vol. 1715-40.

Mason	Cinderhill
Davies	Etingshall
Cox	Sedgley
Higgins	Etingshall
Fellow	Etingshall
Harper	Etingshall

2. Wolverhampton Parish Register (occupations are not given except for 1701 and most of the probate records are missing before 1700 so that these families' former occupations cannot be traced).

At Wednesbury the transition in three generations from rural craft to industrial concern can be illustrated by the Edge family. Richard Edge (1) was a wheelwright who at his death in 1710 had personal estate valued at £18 which included 2 pigs 7 sheep and 1 "laine cow".<sup>1</sup> His son Richard took up the new trade of gunmaking, and by his death in 1726 had a workshop with 2 anvils and 2 bellows. His workshop bellows and tools were valued at £6. There were in addition 140 gunlocks in his shop valued at £9.10. 0d. He continued to hold the family lands in Ridding field and had two cows.<sup>2</sup> By 1773 his son Richard Edge (3) had "a large commodious warehouse, with a counting house and a shop with two hearths".<sup>3</sup>

The decisive period for the introduction of the new trades appears to have been between 1710 and 1730. At Bilston the making of "decencies" for the "middling consumer" was already the main business of the village. By 1730 bucklemakers, boxmakers and toymakers comprised the overwhelming majority of the tradesmen. 96 men practising these trades were mentioned in the Parish Registers between 1717 and 1727 and there were only 29 other metalworkers and 49 other named tradesmen.

It is extremely rare to find references to metalworking trades other than the traditional nail, lock, lock, buckle, saddlers iron and scythmaking before 1710. The first reference to japanning, toymaking, boxmaking, vice making, woodscrew making, gimlet making and many more fall within the second decade of the eighteenth century.

1. Lichfield Record Office. Probate. Richard Edge Wednesbury May 5th 1710  
 2. " " " " Richard Edge Wednesbury June 24th 1726  
 3. Aris Birmingham Gazette 6th September 1773.

The growth of the trade in "decencies" to meet middling consumers demand has been associated with the period 1725-40 when agricultural prices were low and population was growing only slowly.<sup>1</sup> The evidence from the Midland hardware trades would seem to suggest that the first impetus towards these developments lay rather in the last years of the seventeenth century than the third and fourth decades of the eighteenth.<sup>2</sup> The changes of this early period did not involve great adjustment. From 1740 however, there was a second period of change, during which more elaborate trades were introduced. Enamelling, large scale japanning, the introduction of stamping and pressing in the toy trade all date from this period.

1. John A.H. Agriculture and Economic Growth 1700-1760 Journal of Economic History Vol. xxv (1965)
2. Evidence from other trades directed at the cheap domestic consumer market supports the point. It was between 1660 and 1700 that the ribbon frame spread most rapidly. The spread of the stocking frame was rapid from 1690. Clockmaking became an industry in which standardised goods were produced for the mass market between 1660 and 1700. This was made possible by specialisation in the making of parts & the emergence of the clock merchant. In pottery the period of rapid innovation began in 1693 heralded by the arrival of the Elers brothers.  
 Wilson C. England's Apprenticeship 1965 p.194.  
 Sella D. European Industries 1500-1700 (1970) pp.34-5.  
Victoria County History Staffordshire Vol.2. pp.7-12.  
 Weatherill L. The Pottery Trade. 1660-1770 (1971)

These developments also had their origins in the small workshop and the traditional skills, but they involved much greater problems of adaption. The rate of change varied greatly in different trades and among different groups within the trades, producing by 1760 a society in which there was an immense variety of industrial, commercial and social patterns of organisation.

New developments in the supply of raw materials 1700-1760

The expansion of the Midlands industry and the diversification of its products could not have taken place without a corresponding development and diversification in the supply of raw materials.

It has already been shown that throughout the period efforts continued to secure new sources of supply of iron, and that there was increasing investment in mills to supply bar and rod to the Midlands smiths. By 1760 in addition to these traditional materials, the Midlands was consuming very large quantities of ready prepared rolled plate and ready tinned plate; they were using copper and brass on a scale entirely different from that of the seventeenth century; they were decorating their products with gold, silver and mother of pearl, and they were using considerable amounts of pitch, rosin, gums and turpentine.

The seventeenth century had been one of notably slow progress in a number of these industries. The technical processes of producing flat plates of iron, of producing tinned plate, of making brass and brass wire were known, yet for a variety of reasons these industries were inhibited in their growth, and England depended on inadequate foreign supplies. From about 1700 these inhibitions were overcome and growth was rapid.

1. Rolled and Tinned Plate.

In the early 17th century the slitting mill had facilitated the work of the nailers. In precisely the same way a century later the rolling mill facilitated the work of the bucklemaker and the boxmaker and opened up a wide range of new possibilities.

The users of bar iron still had to flatten the small plates of iron they required, laboriously, by hand, from the bar. As late as the mid-nineteenth century, the oral tradition persisted that in the "time of our great grandfathers" before the introduction of rolled plate the apprentices' last job every night was to "hammer down" the bars into small plate iron for the next day's work. The scythesmiths too "plated" their iron by hand at the forge.<sup>1</sup> There were "platemakers" with small forges in Darlaston and Bromsgrove whose work was presumably to prepare iron plate.<sup>2</sup>

The application of water power to this process came very slowly, despite the fact <sup>that</sup> the principle was well established.<sup>3</sup>

1. Price G. A treatise on Fire and thief proof repositories and lock and keys. (1856)
2. Worcester Record Office. Probate. John Dipple Bromsgrove 28th September 1703.  
Lichfield Record Office. Probate. William Butler Darlaston 1686  
Thomas Carter Darlaston 1687
3. Minchington T. The British tin plate industry (1957)

Flattening iron by water power was known in Holland in the early sixteenth century and had spread to Kent, Gloucestershire and Somersetshire. In 1686 Robert Plot described the flattening of iron by water power at the Hallen's forge near Keele. Plot believed there were only two such mills in England. There were close links between the Midlands and ironmasters who made many of the early attempts to roll or tin plate; they included Andrew Yarranton of Wolverley, Philip Foley of Prestwood, John Finch of Dudley, the Baldwyns of Bewdley, and Henry Glover of Stourbridge.



Commercial production of rolled plate began about 1700 when John Hanbury established a successful mill at Pontypool, South Wales which used the water powered rollers to roll <sup>1</sup> (not flatten) the plates. Hanbury himself had close family links with the Midlands. He was assisted at Pontypool by Thomas Cooke of Stourbridge. Little is known of his customers but Ambrose Crowley was mentioned by him as such in a letter of 1708.

Between 1700 and 1760 a number of rolling mills were established in the Midlands. In 1708 Peter Hussey of Wolverley, panmaker obtained a lease of Prescott forge with the intention of converting it into a plating mill, though whether by rolling or flatting does not appear.

Wildon mill had been converted into a rolling mill by 1746. There was a rolling mill at Kingsbury, Coleshill, Warwickshire in 1756 when it was advertised for sale.<sup>2</sup>

1. Rolled lead was already in production by this time and rolled copper followed shortly.  
 Minchin<sup>g</sup>ton T. History of the British tin plate industry (1957)  
 Gibbs F.W. History of the tin plate industry Annals of Science  
 Vol.vi p.390-403.  
 Wilkins C. History of the iron steel tin plate industry of  
 Wales (1903) p.327  
 Worcester Record Office. 1496/426 and 1396/1  
 This mill later came into the possession of the Hallen family.
2. Aris Birmingham Gazette Nov.8th 1756.

A most ambitious undertaking was set up at Tern, five miles from Shrewsbury some time before 1713. This was described as "a mill for the rolling of brass plates and iron hoops and the slitting of bar into rods for the making of nails and also a wire mill, a forge and furnace for making iron into steel". There were workshops and accommodation for 40 men. For a time at least this forge was in the hands of Richard Wood, of Wednesfield, son of the ironmaster William Wood.<sup>1</sup>

The earliest rolling mill in Birmingham was Thimble mill on Hockley brook leased in 1746 by Sir Lister Holte to Samuel Birch of Birmingham, button maker and "lately rebuilt and converted into a rolling mill".<sup>2</sup> It is possible that Matthew Boulton senior was rolling plate at Sarehole mill in 1756 and he certainly had a water powered rolling mill at Sparkbrook by that date.<sup>3</sup>

The Crowley warehouse at Wolverhampton held a supply of "rowled plate" in February 1728. When the same warehouse was again inventoried in 1739 rolled plate was again listed among its contents. In both years Wolverhampton warehouse was the only Crowley warehouse holding rolled plate.<sup>4</sup>

The precise date of the introduction of ready prepared tinned plate is not known, although it was probably developed at Pontypool soon after the production of rolled plate. The process of tinning by power was not essentially different from the tinning of individual articles by hand which had been practised in Walsall by the makers of vats and pots and pans in 1686.<sup>5</sup>

1. Victoria County History for Shropshire Vol. 1. p.461.  
Chaplin R. Sources for Industrial History. Local Historian Vol IX no 2 p 82  
Aris Birmingham Gazette 1756. The Tern mill was closed by 1756 and it was proposed to convert it into a bolting mill. (However, the reasons for this were environmental rather than commercial)
2. Birmingham Reference Library. 276 491.
3. Pelham R. Water power crisis in Birmingham University of Birmingham Historical Journal Vol. ix (1963) pp. 61
4. East Suffolk Record Office Ipswich. Ashburnam Mss. HAI GD 4 13
5. Plot R. Staffordshire (1686) p. 378

By 1741 the Knight family had set up a tinning and plating works at Bringewood in Shropshire and were supplying both black plate and tinned plate to the Midlands.

The tin plate was sold in single boxes, double boxes and "wasters". The price of a single box weighing about 75 lbs was 40s to 45s. Black plate sold at £29.10.0d a ton. In both cases the plate could be bought in single sheets and customers could take as little as a few pounds at a time. It was thus possible for men of small resources to obtain raw materials in small quantities for their own use and to experiment without great loss.<sup>1</sup>

1. Kidderminster Public Library Knight Mss. 245  
They were also supplying the Bristol and London markets.

The Knight accounts show charges for deliveries of tinned plate<sup>1</sup> and the quantities delivered give some indication of the amounts going to Midland customers in the first ten years.

BOXES OF TIN PLATES - DELIVERIES CHARGED FOR

	<u>BIRMINGHAM</u>	<u>WOLVERHAMPTON</u>
1742-3	83	110
1743-4	86	125
1744-5	160	77
1745-6	76	115
1746-7	150	116
1747-8	158	170
1748-9	266	154
1749-50	232	123
1750-51	353	166
1751-52	289	98

1. Kidderminster Public Library Knight Mss. 243 & 244.

It has not proved possible to trace the amounts being sold in London and Bristol since the delivery charges include all plate going from point to point, and the ultimate destination of many consignments does not emerge. The amounts delivered do not correlate with the "totals sold" of the amounts, so that many customers must have collected their plate either from the works or from intermediate points.

Each year there were between 25 and 35 customers buying tin plate from the Knight family, and of these about two thirds can be identified positively as Midland customers. Similarly between 40 and 50 customers bought black plate each year, and about two thirds of these were certainly Midland customers.<sup>1</sup>

1. This does not include the quantities sold through agents in London and Bristol.  
The totals sold retail were as follows:

	Tin Plate	Black Plate.
1742-3	883 boxes	41 tons
1743-4	1369 boxes	61 tons
1744-5	1320 boxes	57 tons
1745-6	1546 boxes	72 tons
1746-7	1582 boxes	56 tons
1747-8	1522 boxes	49 tons
1748-9	1731 boxes	42 tons
1749-50	1827 boxes	32 tons
1750-51	1352 boxes	51 tons
1751-52	1138 boxes	32 tons

## 2. Iron Wire.

Iron wire was also becoming more readily available in the Midlands. There were at least three wire mills in the vicinity by 1760. Hafco~~k~~ wire mill near Stourbridge was mentioned in an advertisement of 1752<sup>1</sup> and one at Perry bridge in 1757.<sup>2</sup> Prestwood wire mill near Kinver was leased in 1759 as a going concern by a Shropshire ironmaster to a partnership of Birmingham ironmongers who put up a joint stock of £1,200 for its operation.<sup>3</sup>

1. Aris Birmingham Gazette March 16th 1752.
2. Aris Birmingham Gazette Nov. 1757
3. Staffordshire Record Office D 2211/34/2

The lessees were John Ryland wire drawer, Joseph Smith merchant and John Kettle steel merchant and manufacturer.

## 3. Steel.

Greatly increasing quantities of steel were required in the Midlands. In addition to that used by the scythemakers and edgetool makers the new trades, especially toymaking, required good quality Swedish steel. Much was imported through London and Bristol.<sup>1</sup> It was estimated in 1737 that of 1,000 tons of steel bar imported each year into the country, 220 tons were consumed within 10 miles of Birmingham.<sup>2</sup> The middle years of the eighteenth century were years of commercial rivalry with the Swedes and supplies of iron from the Baltic were interrupted 1739-48. During these years English imports of steel were reduced by a third.<sup>3</sup> It is not surprising to find that four new steel furnaces in the Midlands were mentioned for the first time between 1731 and 1745.<sup>4</sup> While these cannot have been adequate either in the quantity of the quality of their product as an alternative to imported Swedish steel their existence does indicate the rising pressure upon existing resources.

1. Francis Homfray of Stourbridge is named among those importing steel through Bristol.  
W.E. Minchin ton Trade in Bristol in the 18th century Bristol Record Society publication Vol. XX pp 30-31.
2. Schubert H.R. History of the British Iron and Steel Industry (1957) p. 326.
3. Ashton T.S. History of the Iron and Steel Industry in the Industrial Revolution.
4. Namely Kettles in Steelhouse Lane, Birmingham. (Victoria County History Vol. vii p. 88.) Careless, Coleshill Street, Birmingham, Warwickshire.  
Sampson Lloyd said in 1731 that he had "lately erected" a steel furnace in association with John Willetts. (Lloyd Mss. Wooton-under-Edge) A steel furnace was advertised at Corngreaves, Rowley Regis. (Aris Birmingham Gazette Sept. 26th 1743) among the properties of William Machin of Birmingham sold at his death. The annual value of the mill with a house and 2 acres of land was £11.

#### 4. Brass and Copper.

The rapid growth of the manufacture of Copper and Brass in England and Wales between 1690 and 1720 was closely linked with the rise of the Midland toy trades. This was especially true of the brass and copper companies of the Bristol district and of those centring on Warrington in Cheshire and Cheadle in North Staffordshire.<sup>1</sup> By 1760 a large proportion of the output of the huge Ecton Hill copper mines in North Staffordshire was coming south to the Midlands.<sup>2</sup> The Cheadle copper and brass company also sent the greater part of its output to Birmingham and Wolverhampton. Among the Wolverhampton customers were long established ironmongers including George Birch and Sons, Braziers, Joseph Turton esquire and cabinet locksmith, and Benjamin Molineux ironmonger and merchant. There were also men associated with the newer trades such as John Bickley, son and successor of one of the first Bilston toymakers. Other new names were Cooper and Hodgkyns of Walsall who were no doubt supplying the brass bucklemakers of that town. Brass ingots were delivered to William Jordan of Bilston, sent to the Angel Inn, Wolverhampton to be collected.<sup>3</sup>

1. Hamilton The English Brass and Copper Industries to 1800 (1967 ed.) p. 139.
2. Victoria County History Staffordshire Vol. II p. 266-7
3. Accounts of the Cheadle copper and brass partnership at Thomas Bolton and Sons Ltd. Froghall, Staffs. The surviving accounts run from 1769.



## 5. Other Materials.

Much less is known concerning the supplies of the pitch, rosin and oil required by the japanners.<sup>1</sup> Much must have come from the Baltic by way of Burton-on-Trent. Many of the materials required by the toy trades were required only in small quantities either because they were expensive as in the case of gold, silver, metallic oxides, mother of pearl etc. or dangerous to store as in the case of sulphuric acid. There were, therefore, by 1750, persons making it their business to supply the trade. Alexander Seaman of Birmingham for example supplied "all the eminent box painters of Birmingham, Wednesbury and Bilston" with "all sorts of enamelling colours, especially rose colours at reasonable prices".<sup>2</sup>

Many tradesmen must have been faced with problems in the supply of raw materials in the first half of the eighteenth century. None of them developed such far-reaching solutions to their problems as Samuel Garbett in Birmingham<sup>3</sup> who created a new industry and a new technology, but the aggregation of many small developments represented a considerable degree of adaptation by 1760.

1. Patents were granted for the manufacture of pitch and tar in Shropshire from 1681 onwards. No link with the Midlands has as yet been established. Moffitt L. England on the Eve of the Industrial Revolution (1925) p.166.
2. Aris Birmingham Gazette 16th September 1751.
3. It was when refining metals in his workshop in Steelhouse Lane, Birmingham to supply the Birmingham jewellers that Samuel Garbett found himself faced with a serious shortage of sulphuric acid. This led him to develop the production of acid on a large scale in lead vessels.  
Victoria County History of Warwickshire Vol. vii p.93.

## 6. Coal.

One factor remained constant. This was the apparently inexhaustible supply of cheap coal. Smiths of all kinds provided their own fuel in small quantities which they obtained in person from the banksmen. It was essential to the expansion of the industry that they could do so easily and quickly, without unduly interrupting their work in the forge, and sufficiently cheaply to be within their resources. Without this facility the hardware industry could not have reacted so readily to its expanding markets. Coal in Coseley and Sedgley cost only 4d a cwt. At Kings Norton twelve miles to the south it cost 10d a cwt. Most of the rapidly expanding output of the South Staffordshire coal pits must have been sold to the smiths. The Birmingham coal carriers gathered every morning at Wednesbury Bridge and the Wednesbury coalmasters competed to supply them in small lots.<sup>1</sup> The larger concerns sent their wagons daily to the banks for coal.<sup>2</sup> It is significant that the response to the new expanding markets was most notable in those parishes which lay nearest the coal. As Benjamin Molineux said when advertising the sale of a japanning business in Wolverhampton in 1762, "a great advantage will arise from the situation on account of the cheapness of coal".<sup>3</sup>

1. William Salt Library Stafford.  
Hand Morgan (uncatalogued) Box 36.
2. William Salt Library Stafford. Hand Morgan (uncatalogued) Box 34.
3. Aris Birmingham Gazette. 11th October 1762.

Changes in organisation of marketing and production 1710 - 1760

1. Merchants, Factors and Manufacturers.

The development of the new trades provided the opportunity for new men to emerge into prominence in the organisation of production and marketing. On the one hand there was an increase in the numbers of merchants, factors and agents who concentrated entirely on marketing goods especially in foreign markets. On the other hand there emerged a small number of "gentlemen manufacturers" who maintained personal and direct control over all the stages of both production and marketing.

These new men did not displace the traditional families of ironmongers. These continued to flourish until well after 1760. Some of the ironmonger families extended their interests and purchased black and tinned plate in quantity and marketed all kinds of "snuff boxes, buckles, and a great choice of steel and metal toys that are manufactured in Birmingham, Wolverhampton and Sheffield".

1. Falkener's Dublin Journal No. 2845 July 27-30 1754. p.4.

The advertiser was Benjamin Molineux of Wolverhampton. The habit of marketing Birmingham and Sheffield toys together appears to have been established from the beginning of the trade. There are a number of family links between the two centres. John Finch of Dudley married Joan Shore of Sheffield for example, and at a slightly later date merchanting partnerships were set up such as Smith and Gaskell.

Francis Homfray of Stourbridge ironmaster apprenticed his son Jeremiah to a Sheffield cutler for £90 in 1772. The Sheffield manufacture of toys began first in the 1680's.

Leader R. History of the Cutlers of Hallamshire (1905) p.49.

Among those who did so were the Molineux brothers of Wolverhampton, the Finches of Dudley, Samuel Guest and William Bowyer both of Stourbridge, and several of the Birmingham ironmongers - including Abraham Spooner, Sampson Lloyd, and Joshua Male. The large nationally important firms also included the newer products among their manufactures Crowley and Co., Thomas Daniel and Co., and George Wilkinson of Birmingham and London, bought black and tinned plate in quantity and had it made up into a variety of products for home and export markets.

However, there were also a number of men, not previously operating as ironmongers, who very quickly established themselves as "dealers in toys and hardware". One such was Samuel Stone of Bilston. He was the son of a bucklemaker of Bilston but in 1719 was described as a "japanner".<sup>2</sup> Twenty years later he was said to be "worth 8 or 10 thousand pounds which he has ... acquired from little or nothing".<sup>3</sup> When in 1741 the mills at Bringewood began supplying black plate and tinned plate to the Midlands he was one of the first and most important of their customers. Between 1741 and 1745 he bought 18 tons of black plate which was specially delivered for him at Bilston.<sup>4</sup> He became prominent in the government of Bilston chapelry, acquired land and houses and engaged in a little speculative building.<sup>5</sup>

1. Kidderminster Public Library Knight Mss. 241.
2. Bilston Parish Register. Staffordshire Parish Register Society.
3. William Salt Library Wilkes Mss.  
Tildesley N. Dr. Wilkes of Willenhall Lichfield and South Staffordshire archeological Society Transactions.  
1965/6 Vol. vii pp. 1-11
4. Kidderminster Public Library Knight Mss. 243 & 4.
5. Bilston Public Library Transcripts of Churchwardens Accounts, Poor Law Overseas Accounts.  
William Salt Library Stafford. Hand Morgan Mss. Bilston (uncat.)  
He took his first apprentice in 1743.

Another important Bilston dealer in toys and hardware was Dovey Hawkesford. His family came from Nechells<sup>1</sup> a small hamlet near Bilston. His father had been a substantial yeoman with goods, chattels, cattle and stock valued at £632.<sup>2</sup> Dovey the second son became a toymaker and took apprentices as such in 1722, 1723 and 1731. The premiums received were between £10 - £11.<sup>3</sup> The usual apprenticeship fee for a toymaker was £5 - £10. By 1746 he was purchasing plate from the Knight partnership about 2 tons per year.<sup>4</sup> When he took an apprentice in 1741 he was styled "chapman" and the premium of 30 guineas implied a training in commerce as well as manufacture. When he died in 1749 his business was advertised for sale as that of a wholesale dealer in a great variety of goods in the toy and hardware way.<sup>5</sup>

1. Nechells was at the point where Wednesfield, Willenhall and Bilston met and consisted of two moated mansion houses. The Hawkesfords were a family which included yeomen and locksmiths, but also had connections with the local gentry of Hope of Nechells. Sam Hawkesford was a substantial ironmonger at Willenhall dealing with the locksmiths. Both Dovey and Sam Hawkesford were prominent in the government of their respective chapelries.
2. Lichfield Record Office Probate. William Hawkesford Bilston yeoman 1727.
3. Public Record Office I.R.I. Register of Apprentices. City and Town Register 1711-1811.
4. Kidderminster Public Library. Knight Mss.
5. Aris Birmingham Gazette May 1st 1749.

Other men who were acting as distributors of black and tinned plate though not previously practising the trade of ironmonger, were Hyla Holden of Wednesbury, one of the first enamellers outside Birmingham; Isaac Stokes and Abraham Davies, both Bilston toymakers; Edward Kempson of Bilston, a gentleman who was undertaking a variety of industrial ventures at this time; Peter Capper and Benjamin Corser both of Wolverhampton who were later to form a partnership which achieved prominence in the trade.

Many of these men were the sons of yeomen, locksmiths and bucklemakers, and were the first generation of their families to become "chapmen". They did not also undertake to distribute rod and bar iron. Ironmongers frequently became "hardware men" but hardware men did not on the whole become ironmongers.

1. Kidderminster Public Library. Knight Mss. 241.

The marketing of goods in the newer branches was a much more competitive business than the disposal of nails and locks - goods always in demand and of standard patterns. The correspondence of Boulton and Fothergill (1762-1786) concerning the foreign customers constantly emphasises the extremely competitive nature of the toy trade, Midland goods were competing with local productions in Spain, Portugal, Germany and Italy. This was less the case in France but only because English suppliers concentrated on the cheaper products. In general it was only by keeping the prices of English goods competitively low that English merchants trading to Europe could ensure orders.

English manufacturers had some advantages. Labour was comparatively cheap, Spain had no coal and Portugal reputedly no slitting mills. The English had some "secret arts" and technical improvements which enabled them to produce more cheaply than the foreigners, and they were determined that they should remain secret. The very anxiety of merchants, manufacturers and government in this respect shows that they felt that England could very easily lose its advantage.

The home market was also highly competitive. Boulton found that a single London jeweller to whom he applied for orders in 1762 had "Taylor, Gimblett, Ward and Rabone all after him like wolves for orders. The former offered him any encouragement he would accept of for the sake of a little business".<sup>1</sup>

1. House of Commons Journals Vol. xxvlll pp. 882-4.  
 Robinson E. Boulton and Fothergill 1762-1782. University of Birmingham Historical Journal Vol. vii 1959-60 pp. 74-8  
 Robinson E. Eighteenth century commerce and fashion Economic History Review second series Vol. XVI 1963 p.  
 The men named were all Birmingham toy manufacturers.

This forms a great contrast with the dealings of the ironmongers whose customers had to brook delays caused by a hard frost or the nailers' harvest. Nails and locks could always be sold eventually. The foreign correspondents of the toy manufacturers would not wait, but countermanded their orders if there was any delay - or even more alarmingly ordered parts and tools and set their own artisans to work. In a fashion industry, dead stock was useless lumber and even sought-after lines could be over-produced.

The solution to these problems was found in part by the increasing employment of men who specialised in marketing only. Factors and merchants did not distribute raw materials or advance them to workmen, but concentrated on linking producer and customer.

Most of the master workmen disposed of their goods through a factor. He undertook to make up from a variety of specialist workshops the range and variety of goods required by the customers. He in turn dealt with foreign markets through export merchants who specialised in certain areas, <sup>and</sup> cultivated useful contacts in the principal centres of consumption.

In order to tempt the customer by the widest possible range of designs and to ensure that he was informed of the most up-to-date lines, the new trades relied much more heavily than the old on the use of patterns. The japanners produced narrow strips of japanned metal decorated with classical designs to show the range of colours available. The button makers and bucklemakers sent out sets of small scale goods charged against the customer. Pattern books of engraved copper plates of the goods offered were in use by the 1750's. The patterns were returned by customers in six to twelve months in the case of foreign customers and one month in the case of home customers.

Some of the manufacturers themselves carried their patterns to their customers and brought back their orders and also their payments for goods. In this they followed the example of the older merchants and ironmongers.



But increasingly it was customary to employ riders to solicit orders and to collect payments.<sup>1</sup>

An advertisement of 1759 indicated both the duties and the qualifications of such riders when employed in the iron and toy business. "A sober and steady man of unexceptionable character, brought up to or well understands the wholesale manufacturing trade of Birmingham and Wolverhampton in the iron and toy business, and if acquainted with the Sheffield business it would be the more agreeable. Must be well qualified to ride journeys in the above branches for taking orders settling accounts when on journeys, and at home to be employed in the warehouse business. One that hath learnt his trade in any or all of the above, or in business for a wholesale dealer would be the most likely to be approved of. Any person that can answer the above description is desired to send a letter in his own hand and signify where and with whom he served his time".<sup>2</sup>

The employment of such men by master workmen enabled them to dispense with the middleman while continuing to supervise and organise manufacture in their workshops. A few of the largest firms took this course - the most outstanding example being Boulton and Fothergill. That it was also possible for a manufacturer in a small way of business is demonstrated by the business of Richard Cooper of Wheelers fold, Wolverhampton, steel bucklemaker. In May 1754 when his sudden death caused the sale of the business, he had "large orders in hand". His steel buckle patterns both "at home and abroad and in the Ross tradesmens hands" were all for sale together with the finished steel buckles in the shop and the steel buckle pattern book. The advertisement of sale

1. A Lancashire retailer has been quoted as saying in the 1760's, "There is scarce a month missing, but there is some (rider) calling upon us and there is no need of coming to Town to buy goods."

John A.H. Miles Nightingale. Drysalter. Economic History Review Series 2 Vol XVIII (1965) p. 157

2. Aris Birmingham Gazette Jan 7th 1759.

offered the further attraction of "3 boys that understand the dressing of steel in a very good manner".<sup>1</sup>

Partnerships became increasingly common especially in the newer trades. They were not based as formerly upon family ties but on purely business considerations. The Wolverhampton firms of japanners for example Barney and Ryton, and Taylor and Jones were not as far as can be established based on any family links. In 1753 Thomas Shore of Wednesbury entered into partnership in the "iron and brass foundry way" with Thomas Skurt of Amblecote. Their partnership was based on a written agreement. Shore who was experienced in the trade and possessed tools valued at £50 agreed to accept Sturt as partner and teach him the trade in return for £100 put into the business. The agreement was for 21 years, shop rent was divided between them, and all profits and losses were to be equally shared.<sup>2</sup>

In such partnerships men were looking to each other either for capital or for some special knowledge or experience appropriate to the trade. They were planning for change rather than perpetuating family skills and family businesses.

In the early seventeenth century the growth of the Midlands hardware trades had been stimulated and made possible by the separation of the functions of production and marketing, and the leadership of the commercial capitalists. By 1760 development was most rapid where leadership was in the hands of those who combined the two functions, and deliberately sought to extend the size and scope of their activities by "the spirit of innovation".

1. Aris Birmingham Gazette. 20th May 1754.

2. Birmingham Reference Library 297344.

2. Innovation in technology 1710 - 1760

It was among the new "gentlemen manufacturers" that the spirit of deliberate innovation was most apparent. In order to survive in a highly competitive business they had to introduce changes. Orders had to be fulfilled according to the prices and standards in the pattern book, yet this might take several months from the time of the customer's order. If meanwhile the price of raw materials had risen the manufacturer must stand the loss. Again public events or sudden changes of fashion might lead to what seemed secure orders being countermanded and there was no sale for stock thus left on their hands.

If he wished to stay in business he had to concern himself to an extent never seen before with the anticipation of fashion, promotion of sales, the design of goods. At the same time he had to keep the price of his goods low by subdivision of labour, by streamlining production, and by the "Superactivity of our people and by many mechanical contrivances and extensive apparatus which" ... enabled the men "to do from twice to ten times the work that can be done without the help of such contrivances, and even women and children to do more than men can do without them ..."

The innovation of most general significance in the Midlands was the introduction of stamping and pressing. This had been made possible by the new alloys of copper and zinc. These techniques were applied to the production of buttons, buckles, and toys. The techniques were most extensively exploited at John Taylor's button factory in Birmingham from about 1745, but it was not only the large enterprises that adopted these new techniques. A number of independent bucklemakers in Walsall and Wolverhampton were making pressed and stamped buckles by the 1760's.

1. Robinson E. Eighteenth Century commerce and fashion  
Economic History Review 2nd Series Volxvi (1963-4) p. 43

The introduction of stamping also called into existence in those centres the new trade of die sinking. Dies for making keys for watches were available by 1760 and by 1770 there were three die sinkers in Walsall.<sup>1</sup>

Workshop inventories of the early toymakers are few and uninformative but the inventory of John Pinson of Bilston made in 1751 does indicate that the small scale master manufacturer was adopting new techniques as readily as the large scale entrepreneur. He had metal boxes finished and unfinished in his shop to the value of £71.10.0d. His working shops consisted of a casting shop, a stamping house, and "the workshops". The casting shop was equipped with utensils for casting to the value of 8s. 6d, and in addition to the traditional anvil, bellows and tools, he had three lathes and a "draw bench and the tools thereto belonging". In the stamp house there was a stamp and dies valued at £2.10.0d.

Altogether the working equipment was valued at £11.19.0d. His tools and his stock-in-trade accounted for more than half of his movable goods. His domestic goods amounted to £40, goods in husbandry account for another £15 and he also had a hudders shop with goods worth £7.

1. Sketchley's Birmingham Directory 1770. Birmingham Reference Library 60356.

Stamping was practised in the gun trade from the 1750's.

2. Lichfield Record Office Probate Peculiar. John Pinson. Bilston 1751  
He had been described as a "buckle-maker" in the Apprenticeship Register 29th December 1744.

### 3. Concentration of production.

There was some tendency to gather larger numbers of workmen together, especially in the newer trades. Many factors encouraged this development. The raw materials tended to be more expensive and a greater variety was required. It was no longer a simple matter to distribute them to workmen in their homes. Some of the chemicals could be dangerous<sup>1</sup> and the materials might require prolonged heating under supervision, a process which could not be readily fitted into family life and a dual economy. The specialisation of the artists and finishers encouraged the bringing together of skilled and unskilled to perform different rôles. The deliberate appeal to fashion and changeable tastes necessitated the beginning of sales policy and planned production.

Birmingham was the scene of three outstanding examples of the large workshop where numbers of specialised workers were organised under supervision. John Taylor established a large scale manufacture of metal buttons, japanned ware and snuff boxes. He employed 600 workmen, not necessarily at his workshop. His success rested mainly on two factors - technical innovation and division of labour. John Baskerville arrived in Birmingham about 1726 and by 1745 employed 300 in japanning and allied trades. The partnership of Boulton and Fothergill from 1756 employed large numbers of supervised workmen, used new materials and techniques and introduced new products. There were in addition to these famous enterprises other large workshops in Birmingham - a shop for 40 hands (1757) "a shop for 200 hands" (1765) a "shop for 300 workmen" (1768).<sup>2</sup>

1. In February 1754 Edward Careless of Bilston japanner was burnt to death when a vessel of spirit varnish that was heating in his "stove room" overturned and caught fire. Bilston Parish Register. Staffordshire Register Society (1934).
2. Aris Birmingham Gazette. 27th June 1757, March 4th 1765, Jan 4th 1768.

A few similar enterprises existed outside Birmingham. Reference has already been made to Charles Osborne of Wolverhampton who had "a large shop of workmen" making tobacco boxes before 1729.<sup>1</sup>

Henry Buxton of Goldthorn Hill, Sedgley clockmaker had "an exceeding good shop fit for a dozen hands".<sup>2</sup>

The large workshop with elaborate machinery and numerous employees aroused the admiration of visitors to the Midlands in the mid-eighteenth century precisely because it was exceptional. Only a minority of the work force were employed in such places. Until well into the nineteenth century the characteristic unit of the Midlands hardware industry was the small family forge in a backyard where there were only one or two hearths, and the master employed three or four journeymen and perhaps two or three apprentices. Prominent manufacturers called to give evidence before the House of Commons in 1759 included Joseph Green, a Birmingham chapemaker who employed "14 hands" - 4 men and the rest, children.<sup>4</sup> John Merry of Walsall chapemaker who had been in business 30 years was also called. He employed "12 people".

Machinery was only introduced very slowly in the hardware trades and did not begin to displace hand labour to any extent until the nineteenth century. The "oliver" was not introduced until about 1830.<sup>3</sup>

1. Shaw S. Staffordshire (1798) Vol II p.163.

2. Aris Birmingham Gazette July 31st 1749.

The only equipment mentioned was an "extraordinary good glazing wheel".

3. Jenkins R. The Oliver or Treddle Hammer Transaction of the Newcomen Society 1951 vol XII p.10.

The "oliver" was well established in Yorkshire by the early eighteenth century. In this article Mr. Jenkins suggests that its existence can be traced in the fourteenth century.

It was not until 1796 that Isaac Mason introduced a method of pressing out lock parts by means of a punch and die fixed in a fly press, so that plates and other parts could be produced at a single blow. Until that time the plates were cut by shears and chisel from the sheet iron. Even then the round bolts and padlock shackles still had to be fashioned by hand from the square rods.<sup>1</sup>

In 1791 Arthur Young could write: "the number of little and distinct forges for works performed by a single hand surprised me, I had conceived that machinery was carried much further in this fabric. They have some tools of beautiful invention, but which to an inquisitive and enquiring mind excites some degree of wonder and reflection that so many operations yet remain performed by the re-iterated strokes of hand governed by a man, in executing works that might apparently be abridged with the same ease as others seemingly more complex. I saw no machine comparable to a cotton mill or a stocking machine".<sup>2</sup>

- 1. The lever lock was invented in 1778 and the Bramah lock in 1784. Victoria County History of Staffordshire Vol II p.251-2.  
Price G. Treatise on Fire and thief proof repositories and locks and keys p.847  
Special locks were patented from 1778.
- 2. Young A. Tours in England and Wales (Selected from the Annals of Agriculture) L.S.E. reprint p.253.

## Changing terms and conditions of employment

### 1. Status of Workmen.

Although so much remained the same there were by 1760 signs that the relationships between employer and employed were slowly changing and that the social patterns of the dual economy were giving way to those associated with an industrial society. The family was ceasing to be the basic unit of employment and production, and was being replaced by groupings which foreshadowed those based on capital and employment.

The old names continued to be used but were coming to have different implications.

An advertisement of 1756 sought an apprentice in the toy trade. He was offered an apprenticeship lasting four or five years. In the first year he was to be paid 5 shillings a week, in the second, 6 shillings, in the third 7 shillings and the fourth 8 shillings. If he agreed to stay on for a fifth year he was to receive half a guinea. He was to find himself in bed and board so this was clearly not an apprenticeship in the traditional sense in which the apprentice became part of the master's family but merely a framework in which a new entrant to the trade is hired on terms which will enable him to learn to be profitable to his master.<sup>1</sup>

When his so called apprenticeship came to an end, a young man was increasingly liable to find himself in the position of a "hired hand". The term itself was used in some advertisements - "wanted a good hand that can forge in the box iron way", "such hands may hear of a place of work to their advantage";<sup>2</sup> or again "wanted one or two hands at

1. Aris Birmingham Gazette.

March 22nd 1756. It was described as a "very clean trade, so free from being laborious that a person of a weak constitution might work at it being chiefly sitting down".

2. Aris Birmingham Gazette Sept, 10th 1759.



grinding saws and one that can make small work in the edge tool business".<sup>1</sup>

Such "hands" were expected to give all their time to their employment. They were offered "constant work", "a constant seat of work",<sup>2</sup> "constant employ and good encouragement".<sup>3</sup>

More and more workmen had their tools found for them. Thomas Hopkins gunsmith had "workmen's tools" in his workshop.<sup>4</sup> In 1760 sober men in the iron stirrup trade that could strike, file and burnish well and that were good hands were required by an employer who proposed to hire them by the year and promised them "constant work, fixed prices and files found".<sup>5</sup>

No written agreement for terms of work for such men have been found for the coalfield parishes, before 1760, but such an agreement exists from Aston near Birmingham, dated 1756. In this a gun barrel forger undertook to work for seven years, to put in thirteen hours every working day inclusive of the "usual" allowance of one and half hours for meals. He was to receive weekly pay of 16 shillings but time lost by sickness or otherwise was to be deducted. His master was to provide him with a house worth 30 shillings a year, all his coals, and most significantly, his tools.<sup>6</sup>

This agreement illustrates a number of significant trends. The emphasis is on full time work - the thirteen hours belong to the master. The workman cannot organise his work to profit from a variety of sources of income at different times and seasons. He is not selling his products to the master, but his time and his skill.

1. Aris Birmingham Gazette Feb 2nd 1756.
2. Aris Birmingham Gazette Nov 14th 1759.
3. Aris Birmingham Gazette April 14th 1760.
4. Aris Birmingham Gazette 25th April 1768.
5. Aris Birmingham Gazette Feb 18th 1760.
6. Birmingham Reference Library 329446

His remuneration especially in view of the provision of house and coals was considerable, but despite the seven year contract, he was extremely vulnerable to economic change and extremely dependent on his employer. From 1760 onwards advertisements in Aris Birmingham Gazette for absconded workers in the metal trades refer to workmen described as "articled servants". The wording is very similar to the advertisements for runaway apprentices, giving a description of the man and warning other masters not to take them on. Such men are clearly in a very different position from the producer in the family forge.

## 2. Wages.

As workers wholly dependent on industry became more numerous commentators became alarmed about their vulnerability to economic fluctuations. The gentry began to be haunted by the threatened burden on the poor rate. Consequently evidence concerning the poorest section of the metalworkers becomes more abundant.

There is a good deal of consistency among the figures from various sources, which agree that the lowest paid workers earned about 7 shillings a week. The figure was first mentioned by Joshua Gee, ironmaster, when giving evidence before the House of Commons in 1737.<sup>1</sup> The figure was repeated by Arthur Young and others describing the earnings of the nailers during the second half of the eighteenth century.<sup>2</sup>

The skilled workers could earn much more than this, in some cases more than £2 a week. It was the high wages earned by these men which gave the Midlands the reputation of being a district where labour was exceptionally dear.<sup>3</sup>

1. House of Commons Journals Vol. xciii p. 112.
2. Young A. Northern Tour 1771 Letter xci p. 279.  
Men 7s to £3 a week. Women 2/6d to 7s. Children 1/6d-4/6,  
Court W. Rise of the Midland Industries 1938 pp. 206-9
3. Young A. Tours in England and Wales (Annals of Agric.) L. S. E. Reprint.  
p. 255.  
Tour to Shropshire L. S. E. Reprint p. 140.  
Nailers at West Bromwich 7s - 10s a week.

It was said that the chape forgers earned 20s a week, the filers 9s to 15s a week. Chapemakers at Walsall were said to earn 7s, 8s, 10s and 11s a week. Another commentator gave chapemakers wages as 10s to 15s a week and chape filers as 8s a week. Toymakers' wages were given as follows:

Girls ages 7 - 12 years	1s to 4s.
Girls over 12	4s to 8s.
Boys 7 - 12	1s to 7s.
Boys and Men over 12	7s to 42s a week.

The usual comment was made that wages were not higher because the men preferred to work only four or five days a week.

The rates for stirrup making advertised in Birmingham in 1760 were as follows:

For striking all sorts of plain stirrups	5d a dozen.
for filing and burnishing plain stirrups weighing 12 lbs a dozen	2s 9d.
for filing plain stirrups weighing 13 lbs a dozen	3s. 3d.
and so to rise 3d in every pound weight in the dozen	
pair for burnishing all sorts of plain stirrups	1s per dozen.
for filing and burnishing three barred	4s per dozen.

and so on through a variety of types until the advertisement concluded "and all other sorts in proportion".

1. House of Commons Journals March 20th 1759 Vol. xxviii p.496-7
2. On the same occasion wages at Sheffield were said to be 15d to 18d a day for a working day that lasted from 6 a.m. to 3 p.m. This was regarded by the employers as "dear labour".
3. Aris Birmingham Gazette Feb 18th 1760.

As in this advertisement, all wages in the metal industry were piece work rates evolving from an actual payment for the goods. All comments on weekly earnings therefore are estimates only of what a man could earn, and shed little light on what he actually earned. Nor is it clear whether the figures given represent the earnings of an individual or of a family. The employment of women and children was always limited to the less skilled processes in the family workshop, although they were increasingly useful where machines had been introduced. Full time employment of women and children was probably a fairly recent innovation in the Midlands.<sup>1</sup>

1. Plot writing of nailers in 1686 spoke only of men and boys. Crowley in 1701 said that he knew of "several women nailers in Staffordshire and adjacent counties". This does not sound as if the practice was very general. However, by 1741 the female nailers, stripped to the waist and hammering away in forges along the roadside were sufficiently numerous to astonish young William Hutton on his way to Birmingham. Women and children were widely employed in bucklemaking and toymaking by 1759 especially in the larger works, and also in polishing and packing.

On the question of family earnings no one is more illuminating than Dr. Wilkes of Willenhall,<sup>1</sup> who as a physician with experience in local administration was in a position to know the facts. Writing about 1760, he was much concerned at the dependence of the families of the chapelry on the iron trade. He calculated that there were about 250 houses of which about 150 were inhabited by families making locks. This figure incidentally is borne out by the Directory for Willenhall (1767). He spoke of these people as wholly dependent on their trade, and was concerned that in times of bad trade they would be thrown upon the poor rate - or as he put it - "become chargeable to the lands of the parish".

He allowed 6 persons young and old in every household a figure which would be considered high for other periods but may well be accurate in this period of rapidly rising population and in an industrial area. He assumed that three of these would be able to work - thinking presumably of father, mother and eldest child. He reckoned that each shop cleared by its work 20 shillings a week. The total income thus earned according to Dr. Wilkes was thus £7/<sup>a year</sup>per head of the lockmaking population of Willenhall including children, and he believed "while provision is reasonable they do pretty well". Dr. Wilkes contrasted this with the average per head which the total value of the land of the chapelry could theoretically provide - a notional figure which he calculated to be 20 shillings a year per head of the population. The concept of a community so dependent on a single manufacture alarmed Dr. Wilkes for he knew that "when corn advances price, trade becomes dull, or any sickness come to the master of the shops, they almost immediately become chargeable to

1. Tildesley N. Dr. Richard Wilkes of Willenhall  
Lichfield and South Staffordshire Archeological & Historical  
Society Transactions 1965/6 Vol. vii pp. 1-11.

the lands (i.e. for poor rate) for out of their gains there is little to be saved".<sup>1</sup>

Here Dr. Wilkes who knew and had a genuine concern for the poor, identified the crux of the problem of the worker in an industrial society whether in his own home workshop or in a manufactory. He was dependent on abundance or scarcity of work and exceedingly vulnerable to economic fluctuations over which he had no control.

His defence against these pressures was to band together with those in like case as himself.

1. William Salt Library Stafford. Wilkes Mss. 466-8 Vol. 1. p. 86.

### 3. Labour Relations.

This tendency was demonstrated in 1759-61 when a sudden increase in the price of raw materials caused an outburst of public industrial dispute, between employer and employed.

Meetings of workmen in the Midlands about the gain and price of work were not new in 1759. The earliest recorded was that of the master shoemakers in 1733,<sup>1</sup> and in 1746 the filers of gun barrels informed their customers that<sup>4</sup> if the prices were not raised the gun barrels would be so much the worse<sup>2</sup>. The number of such meetings held in 1759-61 however was probably unprecedented.

It began in May with the needlemakers of Worcestershire and Warwickshire. The journeymen needlemakers "rose up in large bodies" and refused to work at the current prices which were "so low they could scarcely get bread". The reason for this was thought to be the employment of too many men who had not been apprenticed to the trade - a traditional way of describing what were in fact new patterns of employment. The masters were forced to reduce their work force and to raise the wages of the regular journeymen. For these reasons therefore they were compelled to increase the price of goods in proportion to every customer.<sup>3</sup>

It is apparent that the first group to suffer in a period of rising costs of raw materials were the journeymen and this is further borne out in June 1759 when the journeymen of the gunlock trade gave notice of a meeting. They declared that the "masters of the gunlock trade being of a mercenary temper thought their gains not sufficient and have combined to lower and sink the prices". Every journeyman "that hath his own and his family's interest at heart will not refuse to meet at

1. Berrows Worcestershire Journal Sept. 28th 1733.

2. Aris Birmingham Gazette May 19th 1746.

3. Berrows Worcester Journal (Worcester Postman) May 17th 1759.



the sign of the Swan in W.B. (West Bromwich) to prevent the combination, for if they (the masters) are suffered to proceed we with our families must soon be sent to the workhouse".<sup>1</sup>

This advertisement already shows all the marks of incipient radicalism. In November the journeymen gimlet makers demanded an increase of wages or "they would be forced to seek fresh employments"<sup>2</sup> and in December 1759 the journeymen boxmakers of Birmingham also demanded higher wages.<sup>3</sup>

The masters too were suffering difficulties as a result of rising prices of raw materials, and there was a series of meetings throughout the autumn, in which measures were agreed upon to persuade their customers, the ironmonger and chapmen, to accept higher prices.

In October the Walsall bucklemakers "finding it was impossible to support trade under the present prices" unanimously agreed

1. To allow no discount on any of their goods.
- 2 $\frac{1}{2}$  To a stated price for the usual shares of metal.
3. To a certain limited time of credit to be by them allowed either in cash or bills.<sup>4</sup>

1. Aris Birmingham Gazette June 28th 1759.
2. Aris Birmingham Gazette Nov. 26th 1759.
3. Aris Birmingham Gazette Dec 1759.
4. Aris Birmingham Gazette 27th Oct. 1759.

"Discount" was the name given to the trade practice, by which the factor or ironmonger gave an order for work to the workman who would accept a "discount" i.e. a percentage reduction of the traditional price for the work. By the early nineteenth century these "discounts" were a notorious feature of the trade. By that date discounts of 10% to 70% were common in the lock trade, and 2 $\frac{1}{2}$ % to 60% in other trades. The extreme case was 90% discount on iron cinder sifters.

The other groups of tradesmen simply met at some central inn and agreed to give notice that the price of their goods would be raised 2 or 3 shillings in the pound. The tradesmen who acted in this way were the bellows makers;<sup>1</sup> the brass and iron rim and mortice<sup>2</sup> locksmiths of Wolverhampton and Willenhall; the plate stock lockmakers of the same place;<sup>3</sup> the filesmiths of Walsall,<sup>4</sup> the fireshovel makers of Dudley;<sup>5</sup> the box ironmakers of Sedgley;<sup>6</sup> the claw hammer makers;<sup>7</sup> the chapemakers of Bilston;<sup>8</sup> and the gimlet makers of Birmingham.<sup>9</sup> In the following year the same action was taken by the scythesmiths of Worcestershire and Staffordshire after their meeting at the Talbot Stourbridge,<sup>10</sup> and the Wood Screw makers of Wolverhampton after a meeting at the Angel Wolverhampton.<sup>11</sup> From a little further afield the blacksmiths of Sutton Coldfield also gave notice of a rise in prices of work.<sup>12</sup>

1. Aris Birmingham Gazette Nov. 2nd. 1759.
2. Aris Birmingham Gazette Nov. 10th 1759.
3. Aris Birmingham Gazette Nove 14th 1759.
4. Aris Birmingham Gazette Nov 14th 1759.
5. Aris Birmingham Gazette Nov 22nd 1759.
6. Aris Birmingham Gazette Dec. 3rd 1759.
7. Aris Birmingham Gazette Dec 10th 1759.
8. Aris Birmingham Gazette Dec 8th 1759.
9. Aris Birmingham Gazette Dec 18th 1759.
10. Aris Birmingham Gazette Feb 22nd 1760.
11. Aris Birmingham Gazette Apr. 4th 1760.
12. Aris Birmingham Gazette Nov 13th 1760.

The last group to meet and give notice of a rise in the price of their commodity were the scythe-grinders who in August 1761 declared that in future they would charge 2 shillings a dozen for grinding. They also required the scythesmiths to pay for the ropes to "lap up" the scythes.<sup>1</sup>

All the various tradesmen gave the increase in the price of raw materials as the reason for their demands. The blacksmiths of Sutton Coldfield further represented the increase in journeymen's wages and the price of coals. The Severn carriers of nails and hardware also gave notice at this time that they intended to increase the cost of carriage on the river.<sup>3</sup>

Trade was brisk at the time. Indeed in the toy trade, especially bucklemaking the ironmongers and merchants could not get enough goods to fulfil their orders. On the other hand it was important to keep the prices to customers as low as possible especially in dealing with the overseas markets.<sup>4</sup>

The rise asked for was considerable - 3 shillings in the pound on goods recommended by their cheapness. The scythe-grinders asked for an increase of from 1 shilling to 2 shillings for grinding a dozen scythes. In this the only case where comparison is possible,<sup>5</sup> they were asking for an increase on the price which had been current since at least the 1660's. It may well be that these advertisements mark a turning point when the prices for work "customary in the country" began to give way to prices established by the interplay of economic pressures.

1. Aris Birmingham Gazette. Aug. 1761.
2. Aris Birmingham Gazette. Nov 13th 1760.
3. Aris Birmingham Gazette March 22nd 1760.
4. House of Commons Journals xxviii pp.496-7 and Vol. xxviii p.882-4.
5. i. e. By comparison with probate inventories. The inventory of William Bennet of Kinver shows scythes being "yearned" for 1 shilling a dozen. Lichfield Record Office Probate William Bennet Kinver.

These advertisements reveal men drawing together in their common interest against both their employers the merchants and factors and also against their own journeymen. The separate meetings of the various trades even to the distinction between the rim and mortice lockmakers of Wolverhampton and the platestocklock makers of the same place anticipate the friendly society meetings which were soon to follow.<sup>1</sup> The phrases used to denominate the merchants vary and are symptomatic of a changing relationship. Some address them as customers, some as masters, some as "those who have formerly employed them". The locksmiths explained that they thought the Press the "best means of letting all master chapmen and others" know their intentions. There was now evidently no opportunity for the "discourse" and bargaining which Richard Turton and William Murgatroyd had engaged in with the West Bromwich and Hallamshire nailers respectively.

The number of merchants, factors, warehousemen, agents and other specialist intermediaries was increasing. An increasingly large share of the cost of production was being borne by the employers. More and more they found capital for special buildings, for equipment, even for tools. Formerly all these matters had been provided on a small scale by the workmen. The need to compete, to seek out new markets and new designs led to a constant adaptation of skills and materials which in turn increased the importance of management at the expense of production. The increased costs of materials and of production could not be passed on to customers since the foreign market was extremely competitive and

1. Handsworth Friendly Society from 1777 Birmingham Reference Library 303248.

By 1794 there were at Wolverhampton 34 societies.  
Eden F.M. State of the Poor (1794) p. 308

the home and colonial markets wanted cheap mass produced goods.

It was only very gradually indeed that these pressures made themselves felt among the small workshops and family units of the Midlands. Nevertheless, it seems probable that by 1760 the workmen were less able to bargain with their employers. They were more dependent than before on a single source of income and therefore had to take work on any terms they could get. The link between large populations engaged upon manufacture and the rising poor rate was already being pointed out by contemporary commentators.

On the whole the evidence from the hardware trades supports D.C. Coleman's thesis that until the middle of the century there was considerable competition for labour but that after about 1760 men were increasingly competing with each other for jobs.<sup>1</sup>

It had always been in the interests of the ironmongers and merchants to keep the price of work as low as possible especially in times of bad trade. But in the increasingly competitive world of the toymaker, bucklemaker and the exporter of such goods, it was more important than ever before to keep the price of goods low and increase the volume of production. Mechanisation was only one of the many ways of doing this and in the hardware trades not the one most readily adopted. The ways which were found to achieve these ends in the second half of the eighteenth century were revolutionary in their impact and exceedingly complex in their operation. They included new methods of producing raw materials, new forms of transport, new kinds of demands upon labour. But although they were to be so dramatic and far reaching it has become evident that these innovations were not unprepared. Prometheus was not suddenly unbound from captivity, neither did the god descend in the persons of Boulton, Watt and Wilkinson from the machine.

1. Coleman D.C. Labour in the English Economy (1956) Economic History Review Series 2 Vol VII pp.288-295.  
Court W. Rise of the Midland Industries p.201 elaborates this point in respect of the nailers in particular.

On the contrary the period 1660 to 1760 had been one in which great changes had been brought about by a multiplicity of small movements. Men of small means had invested small capitals. Slight adaptations of techniques and skills had enabled new opportunities for profit to be exploited, and had in turn led to further technical adaptations and innovations. The resources of leadership, of skill and of capital had come mainly from within the community itself. It had been a period when the Midlands hardware trade had faced no serious checks to its expansion. The needs of war and the opportunities of peace were both useful to the trade. In the American and colonial markets English industry was protected from competition and insured against the vagaries of the European markets. Despite fluctuations and short lived crises the overall trend had been one of continuous expansion. The Midlands was better placed to profit from opportunities than any other hardware district. Men like Robert Foley, Dovey Hawksford and John Pinson had been quick to take advantage of the situation and in doing so had unconsciously affected many aspects of the society in which they lived and had prepared the way for the more dramatic changes that were to come.



## APPENDICES

	page
1. Summary of population estimates	305
2. Petition and counter petition concerning chapmen. Staffordshire Quarter Sessions 1605	307
3. Analysis of probate inventories.	312
4. Summaries of the purchase of rod and bar iron from the Foley partnership's mills in the Stour Valley, North Staffordshire and Bewdley	316
5. Summary of the purchase of rod and bar from the Knight family's mills in the Stour Valley and from Bewdley 1727-1750	319
6. List of the principal purchasers of rod and bar iron from the Foley partnership 1692-1705	321
7. List of the principle purchasers of rod and bar iron from the Knight partnership 1727-1750	323
8. The agreement of Robert Foley (2) with the Navy Board. 1677	324
9. The Stock in trade of a retail ironmonger 1661	330
10. The export of nails ironware copper ware and brassware 1697 -1760	334
11. Analysis of Sketchley's Directory. 1770 to show the number and types of metal workers	335.

Appendix 1. Various figures indicative of the relative size of communities.

	1. ACRES	2. 1563	3. 1666	4. 1676	5.	6. 18 01.
Aldridge	8191	75	181	-	-	1492
Darlaston	800	42	145	-	-	3812
Handsworth	7152	-	226	-	(1739) 1200	2719
Harborne	3420	53	152	-	-	2275
Himley	1200	18	41	-	-	267
Kingswinford	7372	29	283	-	-	6464
Sedgley	7743	126	490	-	-	9874
Tipton	2171	-	115	-	-	4280
Walsall Town	95					
Walsall Foreign	7800	290	645	7	-	10399
Wednesbury	2287	132	218	-	-	4160
West Bromwich	5851	116	311	-	-	5687
Wolverhampton	3525	323	858	-	(1750) 7454 (1780) 11361	18565
Bilston	1867	-	-	-	(1695) 1006	6914
Willenhall	5688	-	-	-		3143

continued.....



	1.	2.	3.	4.	5.	6.
	ACRES	1563	1666	1676		1801
Belbroughton	4749	317	-	505	-	1266
Bromsgrove	10968	1414	-	2325	(1777) 4713	5898
Chaddesley	6079	529	-	480	(1782) 234 fams.	1249
Clent	2424	-	100	160	(1782) 150 fams.	738
Rowley Regis	3828	-	250	420	-	5027
Dudley	3615	-	415	431	1776) 9500	10107
Hagley	2431	88	-	274	(1782) 70 fams.	2431
Halesowen	12272	-	-	761	(1790) 14000	18134
Oldswinford	2704	849	-	766	(1782) 100 fams.	7194
Stourbridge	453					3431
Amblecote	655	-	62	-	-	
Pedmore	1510	80	-	90	(1756) 55 fams.	306.

1. Acreages as given in the Victoria County Histories for Staffordshire and Worcestershire.
2. Return of Communicants 1563
3. Hearth Tax return 1666/7 houses taxed and untaxed.  
( only taxed available for Worcestershire)
4. Return of Communicants papists and dissenters 1676  
(Compton Census)
5. Various antiquarian estimates of numbers of families or of persons.
6. Census return 1801.

Staffordshire Quarter Sessions. Petition undated. Trinity Term 1603

Item 36

Whereas divers and sondry persons in the counties of Stafford Warwick and Salop wch were brought up in the misteries or manuall occupations of nailers, bucklemakers, spurriers locksmiths loryimers stirrop makers and such like sciences and certain other persons of other trades being all now grown to wealth, and having given over their said trades of making the said wares and other trades wherein they were brought up have used of late to buye the said wares of others that do make them and to sell the same in other Counties. Whoe do now ingrosse or gett in to their hands the most part of all the Iron made in these woodland counties and then do sell the same by retail, som in bars and som slytt or in other manner att excessive and very great prices whereby the poorer sort can have no yron to woorke or very little but at their hands and at a very unreasonable rate. And do also nowe altogether refuse to bye anie nailes buckes spurs locks bridle bites stirrops arrowhead or anie such like wares of any the makers thereof for ready mon but constraine them to departe with and sel e unto them their said wares by wale of exchange for yron corn malte leather tynne brasses and dyvers such like things as mercerie wares and grosseries wares and draperie at such excessive deare and unreasonable rates that they cannot anie longer live by their said sciences, by meanes whereof some twentie or thirtie persons using the said oppressive kind of trading are exceedinglie of late enriched and manie thousands of the daid poore artificers of the said trades together with many blacksmiths whitesmiths stringers of yron and other the woorkers thereof are all ready to beg their bread not only to the great ruine herts and miseries of themselves and their families but also to the hinderance impverishing and decay of all of the inhabitantes there by the daily encreasing of many beggars Whereof they pray it may be ordered as followeth.

1. That no person whatsoever (except blacksmiths stringers of yron and free and lawful ironmongers) shall or may buy any yron whether slytt or unslytt or otherwise hoseover untyll it shall be wrought and made into such ware as the buyer thereof shall ise to make and may lawfully make.
  
2. That no chapman buyer carrier or dryver of nails and such like wares whatsoever shall buy any yron in barres lumps billets or otherwise howsover eyther slytt or unslytt to sell and exchange or put awaie again to anie persons kr persons unless that shll have the same made or covernted into wares in their own shops as hath been heretofore used and most usually accustomed.
  
3. That no chapman, dryver or buyer of nails, buckles, squares, locks, stirrops, bridle, buckles, bits, arrow heads any such like wares whatsoever or anie person or any other person or persons whatsoever shall constraine compel force or bynde either directlie or indirectlie for yron corne malte leather tynn brass or any other thing whatsoever But that every such artificer sala and maie buy his yron where he will without restraint lett interuption or hinderance.
  
4. That no nayler maie lawfully keep sett others on to work shall at any tyme hereafter keepe ma ..... to workes on his trade anie more persons att once than shall dwell inhabit and lodge within his owne ..... or shall keepe or take at any one tyme as .....  
 hwereof the one thsa, have served four years at the least before he shall take the other. Saving that it shall be lawful for anie nailer to bring uphis owne children in his said trades as apprentices to him at .....

Trinity 1603          June 20.    Item 37

Whereas we understand that complaynt ys made to your wor    against our  
Chapmen dwelling in and about Walsall for buying and selling and .....  
Craftsmen hereabouts with pretence that the same will end to a general  
spyle and undoinge of a great number of Artificers .....  
for that the same our chapmen being Caryers to London and elsewhere  
doe buy wares of the same craftsmen and carye them .....  
herebye as ys suggested they greatly enrich themselves and doe not a  
lyttle impovrish the other.    And because we .....  
wor: know the truthe and grounde of the complaynt we are bold to  
certifie thus much.    That we and dyvers and .....  
men doe not only buy of them Iron at as reasonable rates as others in  
our parts being noe caryers doe usually sel .....  
dealing with them for the same have the better utterance for our wares  
at their hands thus for ready money or Iron or .....  
for our wares readily wrought and restinge upon us wch. hathbyn and is  
a verie great supplie and helpe unto us in our .....  
especially ay such times of the yeare as in the wynter season when our  
wares rest most upon usnot uttered.    And besides yf .....  
our chapmen should be restrayned in this course the poorer sort not  
havyng ready money to paye for yron wold be .....  
the exercising of their sayd crafte and put to other labour and so in  
fyne growne to extreme .....  
at home with hus hath sufficiently proved,    And a few of the better and  
rycher sort of craftsmen about us .... ready money for the Iron they  
buy shall thereby reap the benefit whc. old turne to a greater and more  
g .....

than now it is. And therefore we humbly pray your worships to have due care and consideration of the premises. and so crave etc.

From Walsall this xx June 1603.

your worships poor craftsmen.

Mr. Greene lorimer.

Robert Ball.

Franci.

Richard Reynoldes.

Thomas Reynolds.

Lewis Har.

John Walter.

Homfereis.

Thomas T

Wm Sourrier.

WEdw. Fileton.

Old John Maishe and Richard

John Pyner.

John Campyo.

John Gould.

Wm Assone n -  
nailer.

George Mills.

Henry Slighe.

Richard Sloane n

Wm Hether nailer.

It is agreed by the mocion of the Justices at their sessions that  
Henry Stonem John Hall and John Turtons three of the partyes supposed  
Ingrossers

petition of the Common petitioners

to pay ready money for any wares they buy of the petitioners

owne offers cease to by and ingrosse any more Iron for three months  
next .....

insides whereof In case all others lykewise complayned on shal not so ..

an other wares within the sayde three months. That after the sayd  
three months the sayd Hall Stone and Turton shall be a lybertye as  
nowe they .....

for that the said justices have found them very reasonable in their  
answers to the said peticion. Richard Stanford Wm Crompton.

APPENDIX 3.

1. The Evidence of the Probate Inventories.

The only substantial body of evidence relating to the iron handicraftsmen of the seventeenth century is that from the probate courts. The limitations of this material have frequently been stressed. The probate inventories listed only the goods and chattels, cattle, household stuff, implements of trade and of husbandry of the deceased. No record was made of the land he held. Income from wages and fees were only recorded if it happened to be outstanding at the time of his death. The record of assets is therefore not only incomplete, but the degree of incompleteness is different in each case.

The debts which the deceased owed to others were also usually omitted. The handful of cases where these are given at this period show that a man's debts to others could exceed all his listed assets.

The neighbours called in to make the inventory might be skilful or ignorant, hasty or conscientious, casual or precise. It is possible that the valuations in the inventories may have been deliberately underestimated since court fees were assessed upon the totals.

The wills are an even less sound basis for generalisation. They are very individual documents and reflect vividly the idiosyncrasies of their makers. Some were made years before the date of probate; others in articulo mortis. Few of them particularise the estate of the testator. Most are content to use such phrases as "all" or "all the residue". The sums of money named are sometimes expressions of the testator's generosity of heart rather than the condition of his worldly estate.

1. F. Steer. Farm and Cottage inventories of Mid-Essex 1635-1749 p. 5.  
B.C. Jones Inventories of goods and chattels Amateur Historian  
Vol. 2. no. 3. pp. 75-79 Dec. 1954.  
D.G. Vaisey Probate Inventories of Lichfield. Historical Collections  
for Staffordshire Fourt series Vol. 5. p. 1.  
O. Ashmore and J.J. Bagley Inventories as a source of local history.  
The Amateur Historian Vol. 4. 1959-1960. pp. 157-61, 186-95, 227-31.
2. as for example Richard Beckett of Walsall nailer October 19th 1675  
(Lichfield Consistory Lichfield Record Office) who owed £29. 3. 0.  
and whose total inventory was valued at £25. 3. 0d.

In spite of all these limitations the wills and inventories do enable us to build up a picture of the domestic surroundings, the workshops, the tools and animals of otherwise almost unrecorded families. Something of the network of credit is revealed. Certain similarities and differences appear with some measure of consistency. The great variety of circumstances revealed in the inventories is itself a social fact of considerable importance.

The wills and inventories of 20 parishes of the Midland hardware district have been examined for the period 1660-1710. The probate records of women have been omitted. The incidence of registration of wills and inventories for probate for women's estates is very much lower than that for men. Most are widows and few are spinsters. Although a few engaged in retail trade or carried on a deceased husband's business for a few years the probate records of the great majority of women are mainly concerned with personal and domestic property. Their probate records throw little or no light on work in the iron trades.

The total number of men having their estates proved at the two diocesan courts concerned - Lichfield and Worcester - is nearly 2,500. There are a number of lacunae in the series. The great majority of wills and inventories (proved before 1700) for the huge parish of Wolverhampton and its chapelries are missing<sup>1</sup>, calendared but apparently lost. Only 18 remain; their variety, detail and interest show what a serious loss these records are. The wills and inventories from the

1. i. e. the chapelries of Willenhall, Wednesfield, Bilston. There are 112 records for the 10 years 1700-1710.



Worcester diocesan court for the years 1660-1668 have become separated from each other and from the main series, and have had to be omitted from the enumerations in the text.<sup>1</sup>

There were 230 men whose estates were proved between 1660 and 1700 in the Perogative Court of Canterbury. The inventories for these were not available for study, and therefore have perforce been omitted from consideration. On the other hand inventories from estates in the Manor Court of Sedgley have been included.

~~to~~ ~~is~~ ~~at~~ ~~Widdowbury, Widdowbury, Bickerton. There are 112 records for the~~  
~~ten years 1700-1710.~~

1. The inventories (for the years 1660-1668) are unsorted in 21 boxes parts of the "Greenbank" collection. The first inventory in the main series is dated 12th July 1668. The wills and inventories for June-December 1692 were also missing at the time the calculations were made on which this chapter is based. They have since been found and restored to the Worcester collection. Thirteen of these records pertain to the region studied. They relate to the following - 5 agricultural workers, 1 gentleman, 1 metalworker, 3 men of other trades and three with no trade indicated. Since they add nothing material to the argument of this chapter the totals have not been adjusted.

The Manor Court of Sedgley "time out of mind had probate of wills and granting of letters of administration to all persons whose personal estates are within the manor" and 67 Sedgley men whose estates were proved in the manorial court have been included in the present study. Their inventories do not differ in value or method of praising from those of the diocesan courts. There are no records of probate in the manor court between 1699 and 1710.<sup>1</sup>

It is difficult to establish what proportion of the population is represented on the probate records which have been examined. A name by name comparison with certain parish burial registers<sup>2</sup> suggests that about one quarter to one fifth of the adult male population was concerned.<sup>3</sup>

1. J.S. Roper Sedgley Probate Inventories 1614-1787 (1950)
2. Namely West Bromwich, Sedgley, Darlaston, Tipton and Wednesbury.
3. However, enquiries in other districts have provided both higher and lower figures. G.H. Kenyon, in a calculation based on the hearth tax, came to the conclusion that the proportion of probate records to the total deaths of the population was 32% for the market town of Petworth in Sussex and 32% for Kirdworth nearby. His percentages included women. A.J. Bartley employing the same method for Wednesbury believed that he was dealing with 39% of the population. At Powick, a village in Worcestershire Dr. J.A. Johnstone calculated that the probate records accounted for only 14% of the population.

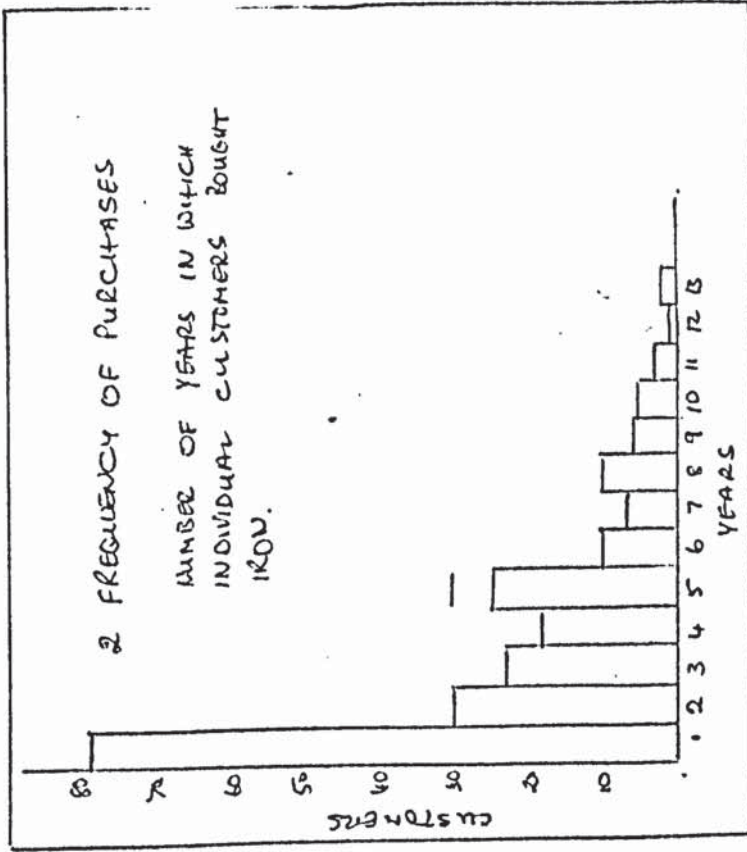
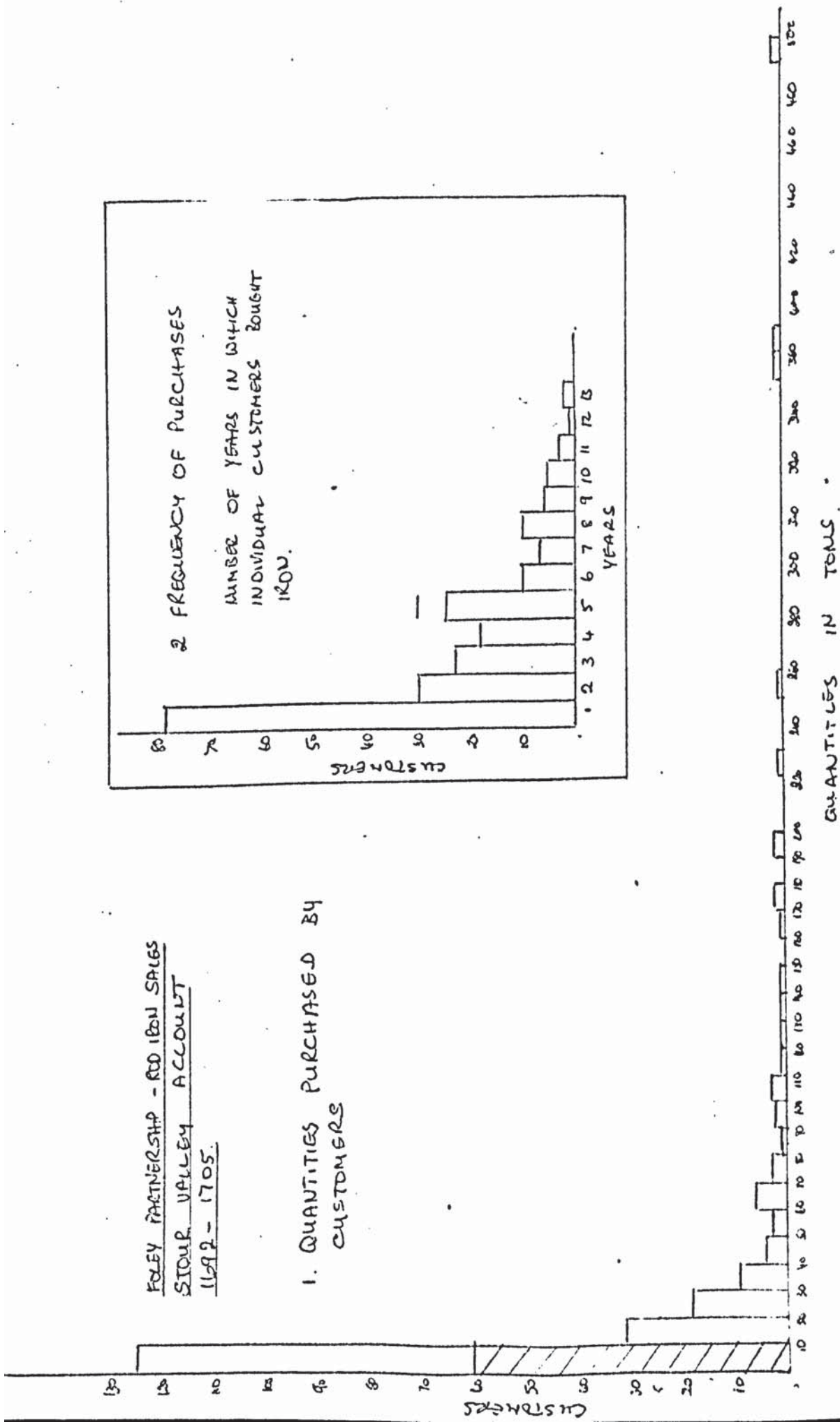
G.H. Kenyon. Petworth Town and Trades. Sussex Arch.Soc. Cill  
 Vol.96. p.54.  
Kirdworth Inventories 1611-1776 ibid.Vol.93. p.80-81

A.J. Bartley Social and Economic Development of Wednesbury 1650-1750  
 M.A. Thesis London 1967. p.229.

J.A. Johnstone The Probate Inventories and Wills of a Worcestershire Parish 1676-1775 Midland History Spring 1971

FOLEY PARTNERSHIP - ROD IRON SALES  
STOUR VALLEY ACCOUNT  
1192 - 1705.

1. QUANTITIES PURCHASED BY CUSTOMERS



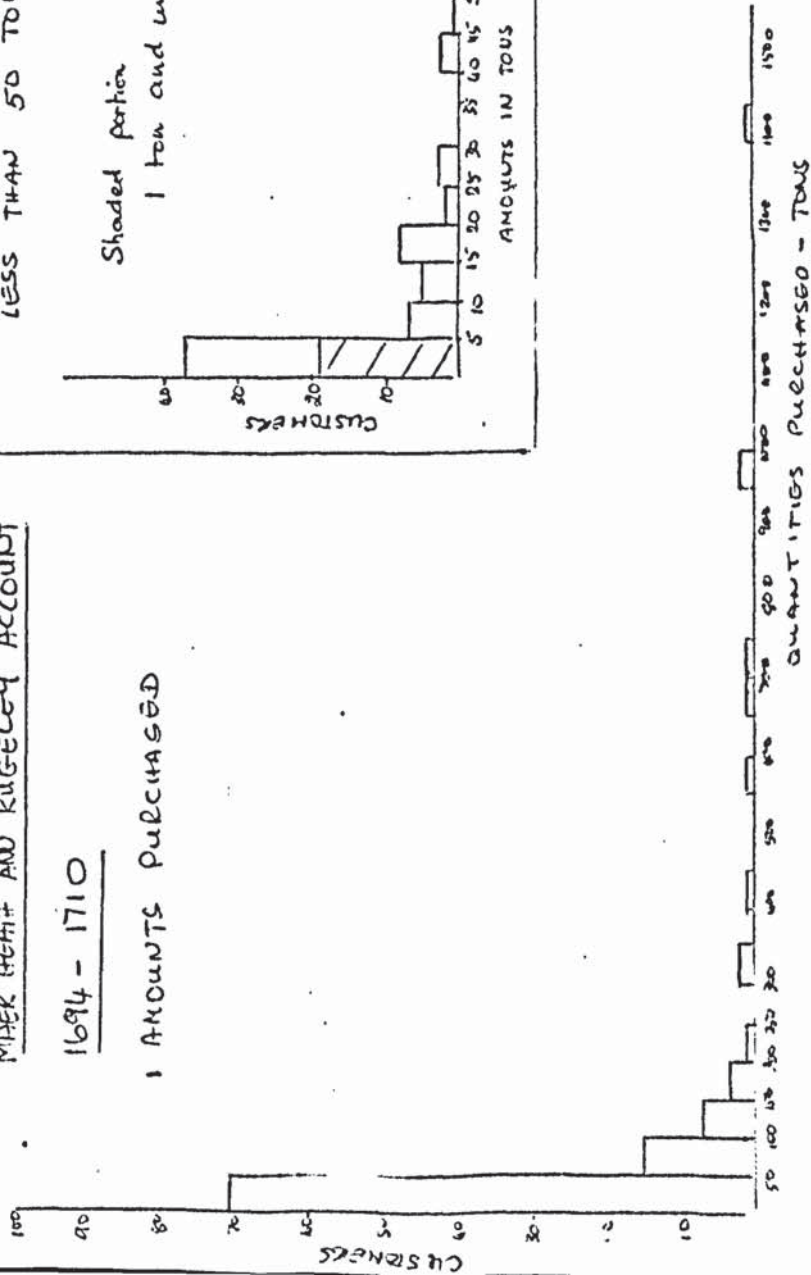
QUANTITIES IN TONS.

FOLEY PARTNERSHIP - RAIL IRON SALES

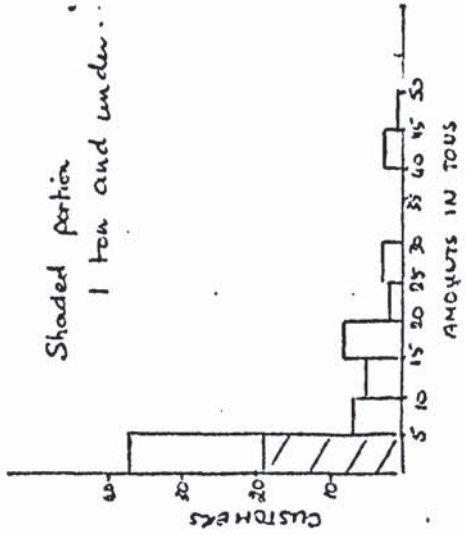
MAR HEATH AND RUGELEY ACCOUNT

1694 - 1710

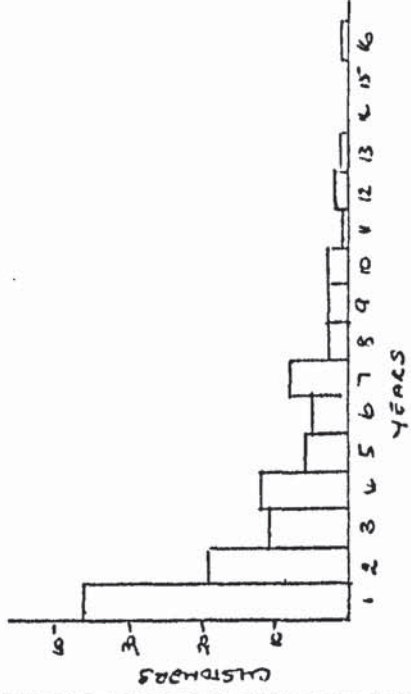
1 AMOUNTS PURCHASED



2. DETAIL OF CUSTOMERS FOR LESS THAN 50 TONS.

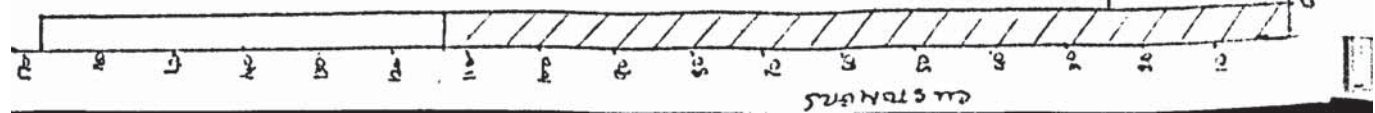


3 FREQUENCY OF PURCHASES NUMBER OF YEARS IN WHICH INDIVIDUAL CUSTOMERS MADE PURCHASES.

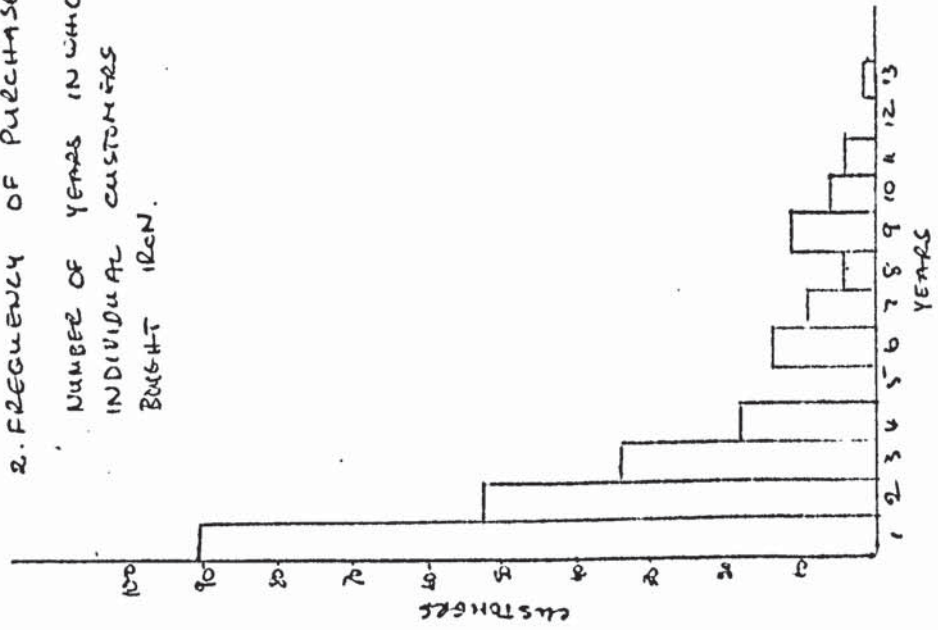


FOLEY PARTNERSHIP. BAR IRON SALES  
BEADLEY AND STOUR VALLEY ACCOUNTS  
1692 - 1705.

1. QUANTITIES PURCHASED  
 BY CUSTOMERS  
 SHADED PORTION  
 1 TON AND UNDER.

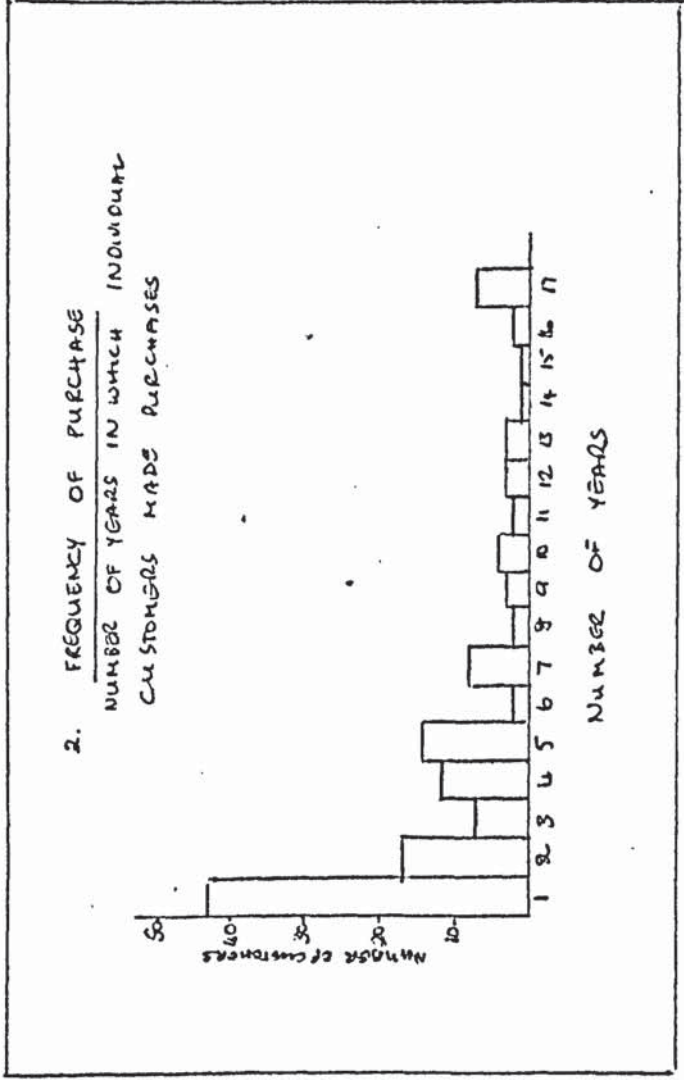
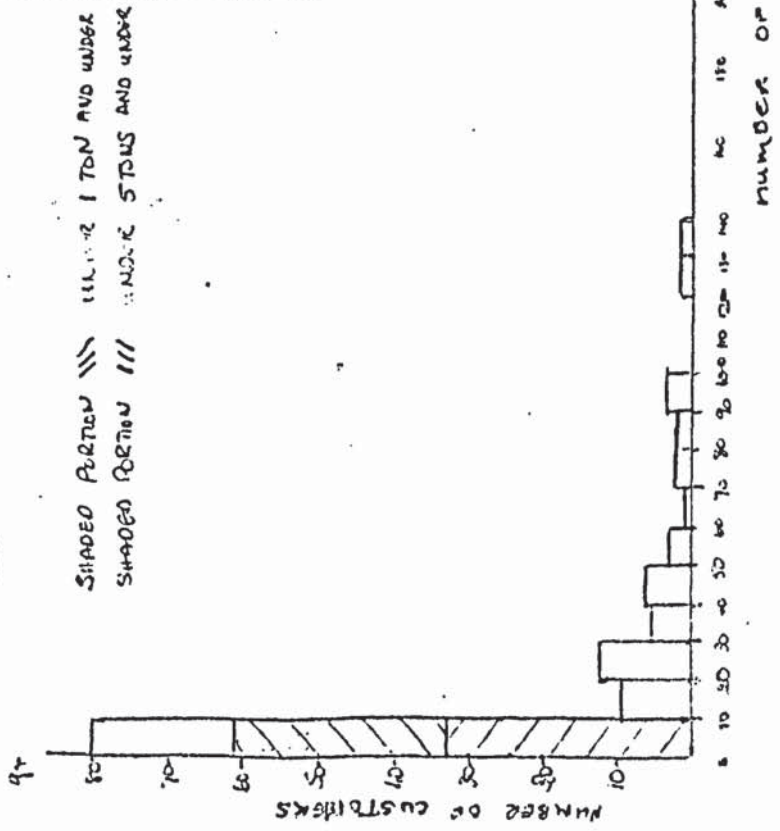


2. FREQUENCY OF PURCHASES  
 NUMBER OF YEARS IN WHICH  
 INDIVIDUAL CUSTOMERS  
 BOUGHT IRON.



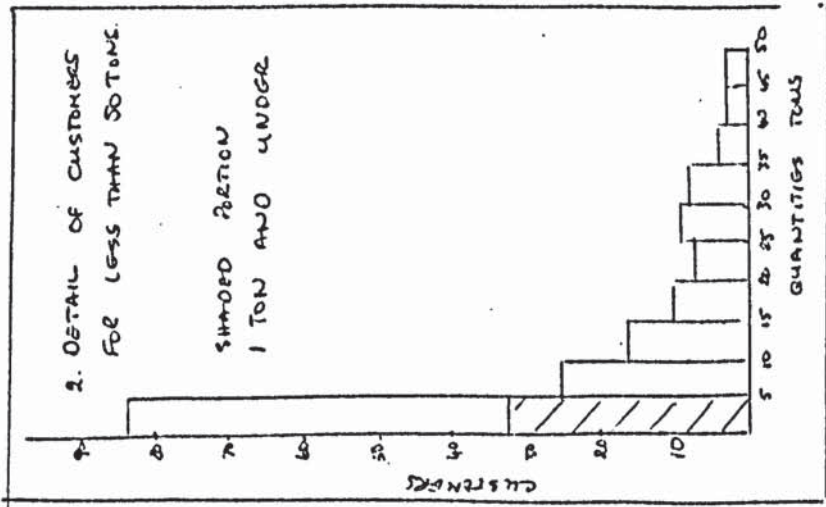
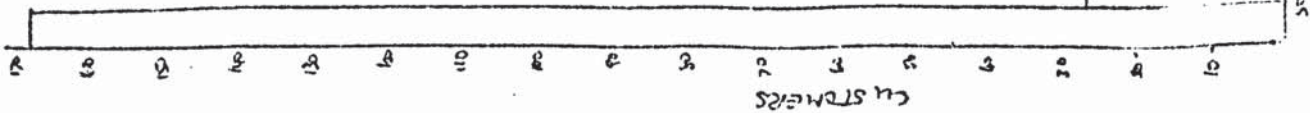
KNIGHT PARTNERSHIP. SALES OF  
BRIDGEWOOD IRON AT BENDLEY  
1735 - 1750

1 QUANTITIES PURCHASED BY  
CUSTOMERS

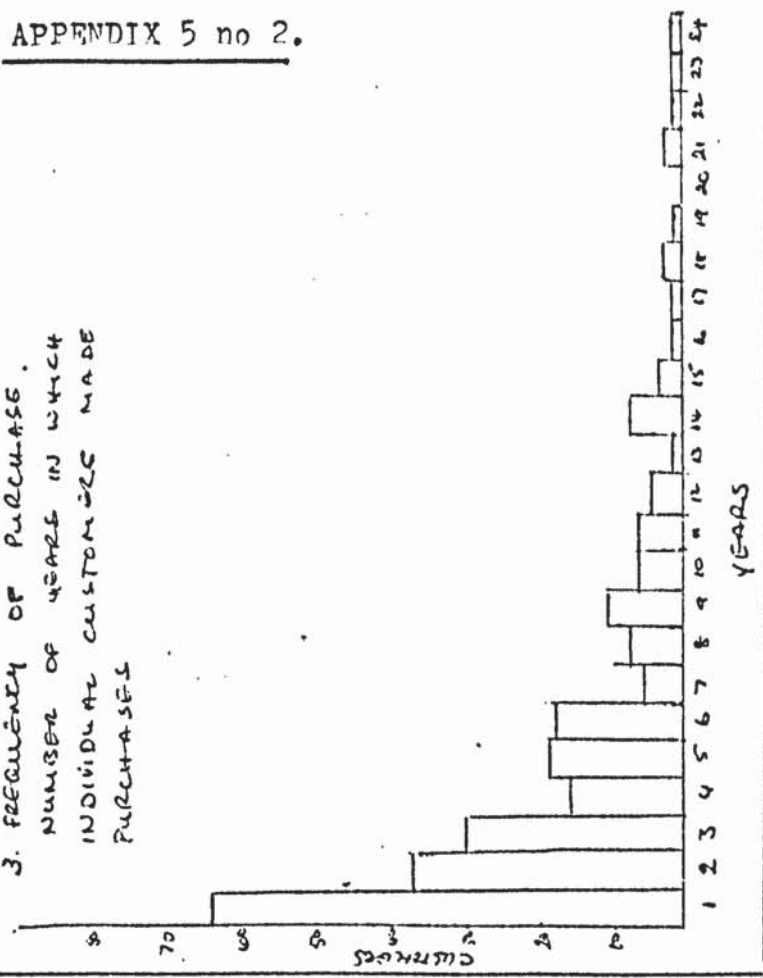


WIGHT PARTNERSHIP  
SALES OF ROD AND BAR  
STOUR VALLEY ACCOUNTS  
1727-1750

1. QUANTITIES PURCHASED  
 BY CUSTOMERS



3. FREQUENCY OF PURCHASE.  
 NUMBER OF YEARS IN WHICH  
 INDIVIDUAL CUSTOMERS MADE  
 PURCHASES



Principal purchasers of rod and bar from the Foley Partnership.  
(Stour Forges Maer Heath and Bewdley)  
1692 - 1705

CUSTOMERS	PROVENANCE	TONS	WTYS	NO. OF YEARS
Ambrose Crowley Junior	London	838	18	10
Mr. Pemberton	Birmingham	739	7	13
Bailey Brett.	West Bromwich	720	13	13
Henry Fidge	Wednesbury	674	3	9
Richard Wheeler *	Woolaston (Ironmaster)	587	2	7
Samuel Fidge	Wednesbury	583	15	4
Richard Parkes	Wednesbury			
	Birmingham	572	1	5
Thomas Russell Senior	Birmingham	518	18	13
William Fingh	Dudley	486	2	13
Samuel Careless	Birmingham	361	9	7
John Jemmens	Birmingham	324	0	6
Richard Horton	Dudley	303	8	10
Sampson Lloyd	Birmingham	293	10	5
Joseph Allen	Birmingham	259	7	8
Richard Lee	Wordsley	241	0	11
Thomas Russell Junior	Birmingham	224	15	10
Benjamin Careless	Birmingham	203	11	10
Josiah Lowbridge	Hartlebury	203	9	6
George Abell	Birmingham	195	12	7
Henry Parkes		180	7	6
William Burton	Wolverhampton	178	1	10
William French	Dudley			
	Bristol	176	2	6
Roger Machin	Birmingham	174	15	4
Samuel Walford	Birmingham	168	13	5
John Clare	Kidderminster	165	2	7
Daniel Hickman		155	14	8
William Russel	Portway			
	Rowley Regis	152	19	8
John Rhoades	Dudley	149	19	9
William Russel	(no place)	138	10	5
Thomas Tomkys	Wednesfield	126	8	7
John Oliver	Stourbridge	112	16	5
Richard Lee Junior	Oldswinford	111	18	7
John Turton	Rowley Regis	110	14	8
William Russel	Birmingham	109	7	8
Joseph Woodhouse	Wolverhampton	108	14	13
Ben Lowe	West Bromwich	102	18	9
Thomas Fulwood	Whittington			
	(Warwickshire)	103	7	11
Sam Wallis	Bristol	97	3	10
John Lowe	West Bromwich	95	11	9
Thomas Cox	Cradeley	93	12	4
John Hawks		89	19	4



Principal purchasers of rod and bar from the Foley Partnership.  
(Stour Forges Maer Heath and Bewdley)  
1692 - 1705

CUSTOMERS	PROVENANCE	TONS	CWTS	NO. OF YEARS
William Gosnel	Halesowen	89	16	5
Joseph Hunyatt	Bromsgrove	86	9	4
John Ratley	Wednesbury	84	0	5
Obadian Lane	Normacote Grange	82	15	4
Joseph Finch	Dudley	82	5	6
John Wood		80	17	7
William Grace		80	1	4
Henry Wakeman	Bromsgrove	79	3	8

✕ Ironmaster.

Principal purchasers of rod and bar iron from the Knight Partnership  
(Stour Forges and Bewdley)

1733 - 1750

CUSTOMER	PROVENANCE	TONS	CWTS	NO. OF YEARS
William Smith	Wolverhampton	1488	6	9
Thomas Phillips	Sedgley	1477	6	17
John Cook <sup>k</sup>	Cookley Mill.	1220	9	17
Joseph Male	Birmingham	1148	0	17
Thomas Orford	? Bromsgrove	1110	0	6
William Bowyer	Stourbridge	1106	10	15
Ambrose Crowley	London	1106	10	10
Joseph Turton	Wolverhampton	943	10	15
Sampson Lloyd	Birmingham	880	8	17
John Russell	Birmingham	835	5	9
Richard Parkes	Stourbridge	653	9	11
Thomas Bissel	Birmingham	612	10	10
Abraham Spooner	Birmingham	483	16	17
Thomas Dudley	Tipton	468	0	10
Sam Hawksford	Willenhall	430	10	15
Edw. Oliver	Bristol	401	16	8
John Jevon	Tipton	401	5	9
Simon Burrows	Birmingham	397	8	17
John Gibbons	Dudley (N.G.)	387	0	6
John Finch	Dudley	363	15	14
Francis Homfray	Stourbridge	339	3	7
Abel Walford	Birmingham	330	16	6
Thomas Daniel		315	16	5
John Finch	Dudley	305	14	14
John Bradley	Wolverhampton	286	9	6
William Finch	Dudley	267	11	9
William Holden	Wednesbury	243	11	9
John Jervis	Tipton	239	11	16
Randle Bradburne		235	12	7
Theodosia Crowley	London	220	9	6
Ben. Molineux	Wolverhampton	219	5	12
Thomas Finch	Dudley	215	0	8
Daniel Clarke	Wolverhampton	214	0	13
Thomas Fox	Birmingham	207	0	11
Thomas Molineux	Wolverhampton	182	6	13
William Toms	Bromsgrove	169	13	9
William Machin	Birmingham	161	8	7
Joseph Smith	Birmingham	143	3	10
Robert Abney	Birmingham	137	0	5
Ambrose Jevon	Tipton	136	12	4
Joseph Farmer	Birmingham	125	16	9
Stephen Podmore	Cradeley	122	2	4
Waldron Hile	Oldswinford	115	7	17
Bernard Wilkes	Wolverhampton	108	18	6
Jeremiah Caswell	Hyde	107	8	12
Charles Blackham	Birmingham	103	18	8
James Phillips	Gornal	103	12	4
Jeremiah Smith	Wolverhampton	103	5	6
Francis Horton		102	15	6
Richard Pardoe	Birmingham	100	13	9

10th - 9 - for 1677

Contracted the day and year about said 10th the Principal Officers and Commissioners of his Majesty's Navy by mee Robert Foley of Stourbridge in the County of Worcester. Esquire and I do hereby oblige myself to deliver unto his Majesty's Stores at Deptford, Woolwich, Sheerness and Chatham for supplying all his Majesty's stores except Portsmouth free of all charge to his Majesty all such quantities of nailes, locks and other materials of iron work herein after named as I shall have order for from time to time from the Principal Officers and Commissioners of his Majesty's Navy or their purveyors in that behalf according to size and quantity and that I will deliver the same so seasonably after demand as that his Majesty's service shall not at any time suffer the want of them - the nails to be made of good tough iron and not brittle and to be of the sizes and weights against each sort expressed or of such other size and weight as upon special occasion the Principal Officers and Commissioners shall give particular direction for provided that the nails of the former sizes and weights which shall before the time of the alteration have been made by me by order of the said Principal Officers and Commissioners upon the account of this contract and are then lying by mee be not left lying upon my hands but be received into his Majesty's stores within six months of the time of the said alteration in case the quantity of the remaining sort or sorts so altered do not exceed the quantity following VIZ One tun of sixpenny or two tun of tenpenny or three tun of twenty penny or four tun of thirty penny or four tun of forty penny or four tun of weight nails but if the quantity which shall remain of the sort or sorts whose weight or size shall be altered shall exceed the quantity or quantities before expressed for the nailes of the same denomination then the overplus of the said remainder of nailes shall be received into his Majesty's stores within six months more provided the quantity of the said overplus be not greater than the quantity which is to be

received by virtue of this contract within the first six months after the time of the said alteration and all nails from a sixpenny nail upwards the six penny nails included as also all the cross-garnetts to be marked with a broad arrow - VIZ the nails to be marked under the head and the cross garnetts in such places as shall be most proper - The locks, hinges and all other plate works to be made strong jointed and well plated with a sufficient number of holes of convenient bigness for the nails fit to be used for the fastening of them and as well the said locks and hinges and the other plate works as all other particulars in this contract contained to be in all respects equal to the dimensions in this contract expressed and to the patterns left by mee at the signing thereof in the Navy Office sealed with the seal of the said Office and my own seal And I do oblige myself that all the particulars mentioned in this contract shall be good, servicable substantially and workmanlike wrought and in all respects fit for the service of his Majesty's Navy - in consideration of the rates and prices following and each particular expressed more than which prices are not to be allowed for any of those goods upon any pretence whatsoever - that the said goods wear better than the patterns or than by contract they were obliged to have been - to be paid in course, that is to say the quarter part of the value of what shall be delivered into any of his Majesty's stores within one quarter of a year to be paid by Bill of Imprest as soon as the Bill for the said stores shall be taken out from the yard and brought to the Navy Office and the remainder when the said Bill shall be its number and times of entry come in to be paid but if by this manner of payment any bill or bills for goods delivered by mee into the King's stores happen to be unpaid above six months from and after the day on which the said Bills shall be brought to the Navy Office and there entered or numbered then to be paid interest after the Rate of six per cent - per annum for so much of the said Bills as shall have not been paid by Imprest but shall remain unpaid over and

above six months from the day on which the said Bills wear brought to the Navy Office and there entered and numbered as before expressed - in regard the prices are brought lower in this Contract. It is further agreed mutually that if at any time hereafter either the said Principal Officers and Commissioners of his Majesty's Navy or the said Robert Foley shall be minded to determine or to discontinue this Contract or the Rates herein now agreed upon that then and in such cases upon twelve months notice or warning thereof given in writing by either party to the other the same is to cease and determine accordingly and either party is wholly at liberty and no way further obliged thereby only that - what sorts of iron work herein mentioned shall be made use of or received into his Majesty's Stores until the said twelve months time of warning shall determine shall be received from the said Robert Foley and none else excepting such of the said goods as shall be wanted for the use of the thirty ships which the Parliament have appointed to be built or for any other ships which may or shall be hereafter appointed by the Parliament to be built - to the building thereof money shall be particularly appointed and appropriated by the Parliament provided the said Robert do furnish the same upon the conditions in the foregoing contract expressed -

A true Copy -

B. Haddock -

Thos' Allin

J. Southerne -

Provisions Names	Wt. of a 1,000	Length in inches	Price per lb
Waite Naailes	3 not to exceed one lb.	6 to 9	
Double Port Naailes	120	5	
Single port	60	3	
Double Deck	120	6	
Single Deck	60	4½	4¼
40d Naailes	90	5	
40d Shething Naailes	90	4	
30d Naailes	60	4½	
30d Shething Naailes	60	3½	
24d Naailes	50	3¼	
24d Shething Naailes	50	3¼	
24d Bradds	40	4	
20d Naailes	35	3½	
20d Shething Naailes	35	2½	
20d Bradds	30	3½	
10d Naailes	22	3	
10d Shething Naailes	22	2¼	
10d Bradds	20	3	4¼
6d Naailes	14	2½	
4d Naailes	5½		
Scupper	5½		5¾
Lead Naailes	5½		
Lead Naailes	12	1	
Wooling Naailes	20	3	6
3d Naailes	3½	-	
2d Naailes	2½	-	6¾
Pump Naailes	2	-	7
2 Inch Bradds	4	-	
1½ Inch Bradds	2¾	-	9½
1 Inch Bradds			
		From 1¼ to 1½ same shall be demanded	
Weighty Cross	From 8 to	From 18 to	4¼
Garnetts	10	22	
Pitch pots			2½
20d Row and	36	3	
16d Clench	26	2½	
10d	16	2	5¼
8 Inch Row			
Clench	224	8	4½
Andirone			
Spits			
Furnaces			4
Jacks			
Wherry Ro & Length Breadth			12
Clench			10

345  
329

Provisions Names	Wt. of a 1,000	Length in inches	Price per lb	
Revitts		4	6	per
Revitts		3	4½	doz
Revitts		2	3	
Double Spring Locks				
Single Warded to the hollow cross warded without hollow keys	7	3¼	2. 4d each.	per doz
Single Spring Lock	6	2¾	1-4 each	
Extra stock locks warded	11½	6	2-4 each	
Ordinary stock locks	9½	6	1-6 each	
Hanging Locks Cross Warded with hollow keys	3½	3	14-0 per doz.	
Cupboard Locks	3¼	2¾	1-10 each	
Chest & settle Locks	4½ 4½	3 2½	1-10 each	
Dozen Garnetts Hinges	12	4 2	12 11-6	
Extra large Esses	½ 7½	3½ 3	14-0	d o z e n
Middle Esses	6½ 4½	2½ 2¼	10-0	d o z e n
London Dovetailes	3½ 3¼	2¼ 2	4-0	d o z e n
Table Hinges Side Hinges	3½ 7½	2 2¾	5-0 13-0	p e r
Lambheads	6 4½ 3½	2¼ 2¼ 2	4-6	d o z e n
Casement Hinges	4¾ 4	2 1¾	4-6	d o z e n
Tumblers	4 3½	1¾ 1½	7-6	d o z e n
Spring Latches	8	3	14-0	p e r
Long Latches	6½ 9	2½ -	8-6	p e r
Spring Bolts	7¾ 4½ 4	1¾ 1½	6-0	

JOHN GILBERT UTTOXETER IRONMONGER JAN 18 1660/1 (Probate Inventory)

In the Shopp.

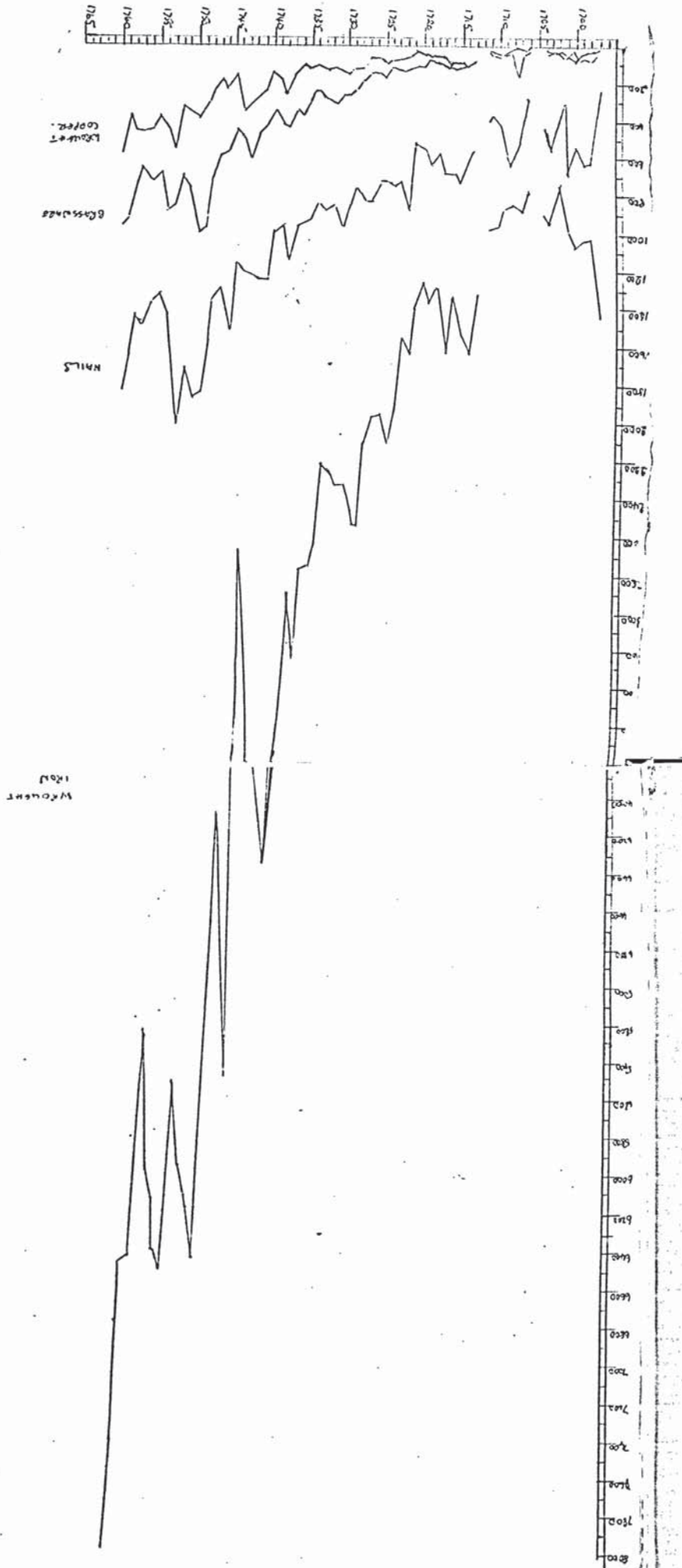
12 cwt & $\frac{1}{4}$ & 2 lbs of iron at 20 lb -	12	9	6
$\frac{1}{2}$ cwt of boards		5	0
4 doz and seven flory rollers		10	9
33 Stone of Rope & hèmpe	4	14	0
1 tub nayles (hur) 2 skips & 2 tubs	1	5	0
12 leather collars		12	0
Spunne yarne		10	0
1 doz & ii sythes	2	4	0
79 lb of steele at 5d lb	1	12	11
100 & a quarter of hops	6	13	3
81 lb of Ropes at 4d p. lb	1	7	0
thre Good shovells		2	6
6 lb $\frac{1}{2}$ of iron flat and square	7	16	0
1 doz and $\frac{1}{2}$ of whip sawes	4	0	0
4 old whip sawes and 3 framing sawes		13	0
Cwt & 24 lbs of frying pans & dripping pans	2	4	6
1 doz and 8 bridle reynes		13	0
two surcingles and a roller		1	8
2 Remnants of hayre cloth		3	0
2 fire shovels and tongues		4	6
28 lb more iron		4	8
2 bard fire shovels		2	6
Catlings for flayles		2	0
1 barrel of pitch	1	12	0
1 barrel of tarr	1	4	0
3 payre of bellowes		3	0
2 payre of horse hames			5
13 lb of Chaynes		3	9
14 swipples			6
2 Cart Saddles		7	0
3 doy & ii grators		2	8
A strike half strike & a gallon		4	6
63 stone $\frac{1}{2}$ of Hollan Hèmpe	15	15	0
3 bowes 8d a padle 8d		1	4
2 Tin (stad) pots		3	6
2 Tin Lanthornes		2	0
6 Tin pintes		2	0
4 Tin quarts		2	0
3 Tin		2	0
4 Tin covers		2	0
2 doz abd 8 candlesticks		8	0
6 driping pans		9	0
7 sause pans 2s 4 tin dredgers 12d		3	0
5 tin dishes 12d 7 little tin pans 4		5	0
an old Collender			4
One payre of fire ends		5	0
14lb of hempe ....		9	0
15 Wire Candlesticks		2	6
2 bread graters 12d 1 iron square 12d		2	0
one broyling plate		1	4
2 new forks		9	8
2 iron mortars		6	0



1 stone $\frac{1}{2}$ more hempe		7	6
33 yards $\frac{1}{2}$ of broad twill	1	0	10
34 yards narrow twill		17	0
3 Stone & 3 lb flax		11	0
$\frac{1}{2}$ Stone of English flax		3	0
21 lb of hundreds(?) more & 2 skips		4	0
3 quets (?) & 14 lb of old iron		6	2
31 lb of hayre		13	4
12 lb of Cast nayles & 1 chayne		2	6
4 lb of Gluw		1	6
$3\frac{1}{2}$ more hempe		1	10
$\frac{1}{2}$ doz wimble braces		1	0
1 doz of Lanthorne hinges		9	0
9 cubberd locks & dust locks		4	6
1 chafing dish			8
1 doz of latches and catches		5	0
2 payre of white buckles		1	8
1 doz of portall springes		7	0
5 payre of springes		1	1
6 payre more		1	0
ii payre more		1	4
7 cubbert lockes		2	4
4 payre of hinges		1	4
4 wht curry combes		2	6
6 stock locks 4 at 2s & 4 at 2s. 8.		13	6
2 at 16d & 1 at 18d			
8 old locks 2s 8d 6 cupbord locks 18d		4	2
3 smoothing irons		2	0
6 payre of lamhead hinges		2	0
4 hanging locks		2	0
6 sheepe bells 2s 6 box locks 18d		3	6
4 mayne combs 6d six iron hinges 18d		2	0
7 dog draynes		1	8
2 smoothing irons more		1	0
3 payre of wighte hinges		1	0
1 payre of brass trownes		2	0
4 doz and $\frac{1}{2}$ of Girth Webb		4	6
2 4d & one doz of files 4d		4	4
5 files		2	0
2 doz of white buckets			10
2 strings of buckles		1	4
8 wontie hookes			8
5 hanging hookes		1	3
4 gimlets			6
1 doz $\frac{1}{2}$ of horsebells		1	6
1 string more buckles		1	0
1 doz & $\frac{1}{2}$ more bells		1	6
4 f of coffin bands			10
6 p. of box hinges		1	0
6 horse locks		2	6
7 files		1	9
1 calf (?) check bit			6
6 files more		1	6
3 doz of iron Rings			3
1 doz of sircingle buckles			4
one latches & catches			4
Nalle blades & 2 punches & rackes		1	6
4 locks 12d 1 lb $\frac{1}{4}$ of wire 1. 8		2	8
9 lb of small cord		3	0
1 doz & ii lanthornes	1	3	0

3 bridle raynes		1	6
3 lb $\frac{1}{2}$ of linen yarne		3	0
1 qr. of A 1 cuvey buttons		6	0
104 lb of Hops	5	8	8
5 payre hinges		1	3
2 doz hinges		3	4
1 doz box hinges		1	4
3 payre of stirrup irons		2	6
1 doz of dog copples		2	6
8 payre of Turets		1	6
4 box locks 2s & 7 pair of spurrs log <sup>9</sup>		3	9
15 snaffles 6.8 5 bolts 12d 7 doz arrow heads 1s 2d 5p. of garter buckles 6. 6d		4	4
500 & $\frac{1}{2}$ of nayles		2	9
5 payre of large dufftayles		1	8
3 inside cupboard locks		1	6
7 pair of lamhead hinges		2	4
6 box locks 12d & 3 more 12d		2	0
4 pairs of box hinges and a locke		1	0
5 pair more garter buckles			3
5 little springing locks		1	3
8 pair of hinges			6
1 little hanging lock			3
2 inside chest locks			8
1 pair of black hinges			3
small yad (?) steel		1	0
2 pair of snuffers			6
1 doz of cast saddle trees		3	0
1 nest boxes		6	0
Callice sand & one tubb		2	6
Chalke		5	0
3 p. of brass scales		7	0
1000 clog nayles.		1	0
1 iron brand & scales		4	0
Sparrow bills			8
Counter & trussles		2	0
Clout nayles		1	0
hobnayles & tackits		1	6
600 Tenpenny nayles		4	0
$\frac{1}{2}$ of tweldepenny nayles		4	0
300 sixpenny nayles		1	6
400 $\frac{1}{2}$ of 4d nayles		1	2
2000 of 3d nayles		4	0
2 lb $\frac{1}{2}$ bell wax		2	0
9 lb of brass weights		4	6
1 old handsaw (?) & parchment		3	0
1 Remnant of pitch and tar barrel, tar tub & ladle		4	0
5 old sacks		7	0
1 piece of packcloth & horsecloth		3	6
12 old scuttles		1	0
for shelves and bords in the shop		12	0
2 framing sawes		4	0
Rosen & a hop tub			8

30 lb of long - in Cheshire	15	0
$\frac{1}{2}$ a load of kids	2	6
oulde Maile	1	0
One olde chest & od things in it and all other od things	ii	0
Thirty strike of Barley	4	10
4 Stone of hempe at Ashburne	1	0
an iron beame	2	0



The export of metal ware from England in the 18th century  
 (From statistics of E. R. Schumeter)

	1770 Wolver hampton	1770 Walsall	1770 Bilston	1770 Willen hall	1770 Dudley	TOTAL
Awl Blade Maker	-	3	-	1	-	4
Bellows Maker	1	-	-	-	1	2
Bellows pipe & malt mill maker	1	-	-	-	1	2
Bit Maker	-	4	-	-	-	4
Bolts Maker	5	-	-	5	-	10
Box iron maker	3	-	1	-	-	4
Brass Founder	20	-	-	-	-	20
Brazier Tinman	5	1	-	-	1	7
Buckle Maker (7 types)	118	118	15	-	-	251
Buckle Tongue Maker	-	22	-	-	-	22
Candlestick Maker	1	-	-	-	-	1
Clock Maker	-	1	1	-	1	3
Chape Maker	21	132	50	1	-	204
Chafing Dish Maker	1	-	-	1	-	2
Clock Hand Maker	2	-	-	-	-	2
Cock Founder	6	-	-	-	-	6
Coffin Handles Maker	-	-	-	8	-	8
Corkscrew Maker	16	-	-	-	-	16
Cutler	4	-	-	-	-	4
Curb Maker	-	1	-	-	-	1
Curry comb Maker	-	-	-	5	-	5
Die Sinker	-	3	-	-	-	3
Dog Chain Maker	-	1	-	-	-	1
Dutch Ring Maker	-	-	-	1	-	1
Enamel Box Maker	-	-	6	-	-	6
Fender Chimney Hooks	1	-	-	-	3	4
File Cutters & makers	12	5	-	-	-	17
Gimlet & Bit Maker	2	-	-	-	-	2
Gridiron Maker	-	-	-	2	-	2
Gunsmith	-	2	-	-	-	2
Gunlock Smith	-	-	4	1	-	5
Hardwareman	1	1	-	-	-	2
Hinge Maker	17	-	-	-	3	20
Iron Monger	24	7	-	7	8	46
Iron Founder	1	-	-	-	-	1
Japanner	7	-	4	-	-	11
Keymaker	14	-	-	-	-	14
Latch Maker	4	-	-	4	-	8
Locksmith (24 types)	118	6	8	138	8	278
Metal Spoon & Fork Maker	1	-	-	-	-	1
Nailer	1	5	-	-	5	11
Nail nipper & nutcrack Maker	2	-	-	-	-	2
Negro Collar Maker	1	-	-	-	-	1
Pattern Ring Maker	1	1	-	-	2	4
Pen engine maker	2	-	-	-	-	2
Powder flask & inkpot maker	-	1	-	-	-	1

	1770 Wolver hampton	1770 Walsall	1770 Bilston	1770 Willen hall	1770 Dudley	TOTAL
Ruler Maker	6	-	1	-	-	7
Saddle tree plate maker	-	2	-	-	-	2
Saddlers iron maker	-	9	-	-	-	9
Sett Maker	-	2	-	-	-	2
Sivett & Bar maker	-	2	-	-	-	2
Snuffers maker	17	-	-	1	-	18
Steel Toymaker	30	1	1	-	-	32
Steel Yard maker	2	-	-	-	-	2
Stirrup Maker	2	13	-	-	-	15
Spectacle Frame maker	1	-	-	-	-	1
Split Ring Maker	-	-	1	-	-	1
Spur Maker	-	26	-	-	-	26
Stud Maker	2	-	-	-	-	2
Swivel Maker	5	-	1	-	-	6
Temple Frame Maker	9	-	-	-	-	9
Tinder Box Maker (Pistol)	2	-	-	1	-	3
Tin Maker	2	-	-	-	-	2
Tobacco Boxmaker	1	-	-	-	-	1
Tool Maker	1	-	-	-	-	1
Toymaker	19	2	2	-	-	23
Vice Maker	4	-	1	1	3	9
Watch Maker	6	1	-	-	-	7
Watch chain maker	27	-	3	-	-	30
Watch File maker	1	-	-	-	-	1
Watch Ring maker	1	-	-	-	-	1
Whitesmith	6	2	-	1	10	19
Woodscrew Maker	28	-	1	-	1	30

BIBLIOGRAPHY1. Documentary Sources.Documents in Public Repositories.Public Record Office.

Apprenticeship registers E.R. 1

City and town register 1711-1750

Country register 1710-1750

Chancery Depositions 1649-1714

Brydges C 5

Collins C 6

Hamilton C 7

Mitford C 8

Exchequer

Accounts of Bromley Forge E /101

Lay Subsidy Worcestershire (Hearth Tax) 1666. E 179 260

Port Books E 190

Bristol 1701-1703

Gloucester 1701-1703

Probate Records (Transferred from Somerset House).

Perogative Court of Canterbury. Wills and  
administrations 1660-1760.

Inventories 1718-1782.

East Suffolk Record Office.

Ashburnham Mss. Inventories of goods and debts of  
John Crowley Esq. 1727-8 and of Alderman Crowley  
1739 (H.A.1).

Hereford Record Office.

Foley Mss. Accounts of Staffordshire works.	1689-1710.
Accounts of ironworks in Partnership.	1692-1704.
Forest Accounts.	1706-1714.
Miscellaneous Accounts.	
Stour, Hyde, Bustlehome	1620-1674.
Correspondence of Robert Foley.	1686-1695.
Deeds and Agreements.	1665-1711.
Miscellaneous working papers of Philip Foley and others	1670-1677.

Lichfield Joint Record Office.

Probate Records Peculiar and Consistory.

Staffordshire Parishes 1660-1760.

Sheffield Record Office.

Spencer Stanhope Mss. (Cannon Hall)

Shrewsbury Record Office.

Coalbrookdale Mss. (Labouchere) 1987.

Reference Library Shrewsbury.

Coalbrookdale Mss. (Shrewsbury)

Stafford Record Office.

Sutherland Mss. D 593

Vernon Mss. D 1790

Paget Mss. D 1734

Hyde Deeds D 35

Wolverhampton Parish documents. Registers and Church-  
wardens accts.

Wolverhampton Manor Court Rolls.

Deanery Manor.

Stow Heath Manor.



Stafford. William Salt Library.

Hand Morgan Mss. (uncalendered)

Wilkes Mss.

Fernyhough Transcriptions of items relating to Staffordshire from the Burney Collection of newspapers in the British Museum.

Staffordshire Parish Register society transcriptions of Parish Registers of Darlaston (1539-1837).

Great Barr (1654-1749). Sedgley (1684-1701).

Wednesbury (1562-1812). West Bromwich (1650-1754).

Worcestershire Record Office.

1. Probate Court of Worcester 1667-1710. Wills inventories and administrations of Parishes of North Worcestershire.

E A 3585/28 2-556.

2. Parish Records. Oldswinford.

Registers. Vestry Minutes 1667-1760. Poor Law Overseers. 1694-1728.

3. Solicitors accumulations.

Marcy Hemmingway Acc 4600

Harvard and Evers Acc 4000

Palfrey Collection Acc 3762

Friends House Library Euston.

Records of Friends' Meetings Bromsgrove, Kidderminster, Dudley.

Transcript of Diary of John Kelsall 1722-1735.

Bilston Public Library.

Lawley Collection of Transcripts and Documents relating to Bilston.

Birmingham Reference Library.

"Birmingham Deeds"

"Staffordshire Deeds"

"Worcestershire Deeds"

Caddick and Yates Mss.

Lloyd Mss.

Hagley Mss.

Registers of Harborne Parish 1660-1760.

Dudley Reference Library.

Earl of Dudley Mss.

Dudley Borough Court Rolls 1643-1760.

Sedgley Manor Court Rolls 1660-1760.

Kingswinford Manor Court Rolls 1660-1760.

Rowley Regis Manor Court Rolls 1660-1760.

Kidderminster Public Library.

Knight Mss. Accounts of Knight partnerships in ironworks.  
Family Mss. Knight. 141,142,243,245,247-289.

Accumulation of miscellaneous papers relating to the district.

West Bromwich Public Library.

Jesson Mss.

Lissiemere transcripts of parish and manorial documents  
in the P.R.O. relating to West Bromwich.

Wolverhampton Public Library.

Mander collection of transcripts of documents in national  
collections relating to Wolverhampton.

Lawley collection of transcripts of Wolverhampton wills.

Documents in private collections.

Bolton and Sons Limited, Froghall, North Staffordshire.

Bolton Deeds. Accounts and deeds of the Cheadle  
Copper Company. 1723-1850.

Humphrey Lloyd Esquire, Wootton-under-Edge, Gloucester-  
shire.

Lloyd Family Mss.

THESES.

- BARTLEY (A.J). Social and Economic Development of  
Wednesbury 1650-1750.  
M.A. University of London 1967 .
- BEBBINGTON (P.S). Samuel Garbett. A Birmingham  
Pioneer. 1717-1803. M.Com.  
University of Birmingham 1938.
- BLUNDELL (D.W). Transport in the West Midlands. M.Com.  
University of Birmingham. 1933.
- DAVIES (E.I). The Homemade Nail Trade of Birmingham and  
District. M.Com.  
University of Birmingham. 1933.
- HUFFER (D.B.N). The Economic Development of Wolverhampton.  
1750-1850. M.A.  
University of London. 1958.
- HENN (K). The Hand Made Nail Trade. M.Com. University  
of Birmingham. 1926.
- LEWIS (R.A). Two partnerships of the Knight family in the  
18th Century iron industry. M.A.  
University of Birmingham. 1949.
- YOUNG (D.W). History of the Birmingham Gun Trade. B.Com.  
University of Birmingham. 1936.
-

Printed Sources.

Aris Birmingham Gazette 1741 - 1770.

Berrows Worcestershire Journal 1710 - 1760.

Almanacks, especially Fly and Swallow. 1620 - 1750.

Directories London 1692, 1748, 1750, 1767, 1788.

Birmingham (Sketchleys) 1767 and 1770.

House of Commons Journals 1660 - 1760.

House of Lords Journals 1660 - 1760.

Bristol Record Society.

Deposition Books of Bristol Vol.1. 1643-7 ed  
H.E. Nott (1935)

Deposition Book of Bristol Vol.II. 1650-1654 ed  
H.E. Nott and E.Ralph (1948)

Dugdale Society Publications.

The registers of Edgbaston Parish Church 1636-1812  
ed C.S. James Vol.1. 1928. Vol.2. 1936.

Harleian Society Publications.

Staffordshire Pedigrees 1663-4 ed. G.Armytage and  
H.H. Rylands (1912).

The Visitation of the County of Worcestershire 1569 ed  
W. Phillimore (1888).

The Visitation of the County of Warwickshire 1683 ed  
W.H. Rylands (1911).

## Staffordshire Parish Register Society.

Bilston Register	1684-1746	ed. H.R. Thomas	1937-8
Bushbury Register	1560-1812	ed. N.W. Tildesley	1956
Rowley Regis	1539-1812	ed. P.W. Adams	3 Vols. 1912-15
Sedgley	1558-1684	ed. H.R. Thomas	1940
Tipton	1575-1736	ed. P.W. Adams	1923
West Bromwich	1608-1658	ed. F.J. Wrottesley	1909
Wolverhampton	1639-1660	ed. H.R. Thomas	1932
marriages	1660-1734	ed. H.W. Tildesley	1952

Staffordshire Record Society. (Until 1936 the William Salt  
Archaeological Society. Collections for a History of  
Staffordshire).

Lay Subsidy 256/31 Hearth Tax for Seisdon and Offlow  
Hundreds. 1666. ed. E. Grogan.

Collections for a History of Staffordshire. Third  
Series 1923 (1924)

3. Lists and Calendars.

Calendars of State Papers Domestic 1600-1780.

Index of Wills proved in the Perogative Court of  
Canterbury.

British Record Society Library.

Calendar of Wills and Administrations in the Consistory  
Court at Worcester. ed. E.A. Fry.

Worcestershire Historical Society

Vol.1. 1451-1600 (1904)

Vol.2. 1600-1643 (1910)

Calendar of Deeds and documents relating to Birmingham

1289-1800 ed. L.Chubb (1925)

Calendar of Quarter Sessions Papers of Worcestershire.

Worcestershire Historical Society.

1591-1643 2 Vols.(1900) ed. J.W.Willis Bund.

Calendar of the Quarter Sessions Order Books and Papers  
of Warwickshire ed. H.E. Johnson.

Vol.I. 1625-37 1935

Vol.II. 1637-50 1936

Vol.III. 1650-57 1937

Vol.IV. 1657-65 1938

Vol.V. 1665-74 1939

Vol.VI. 1631-74 1941

Vol.VII. 1674-82 1946

Vol.VIII. 1682-90 1953

Calendar of Quarter Sessions Rolls of Staffordshire.  
 Staffordshire Record Society. (Until 1936 the  
 William Salt Archaeological Society Collections  
 for a History of Staffordshire).

1581-89	ed. S.A.H. Burne	Third Series 1929	(1931)
1586	ed. G.P. Mander	Third Series 1927	(1928)
1590-93	ed. S.A.H. Burne	Third Series 1930	(1932)
1594-7	ed. S.A.H. Burne	Third Series 1932	
1598-1602	ed. S.A.H. Burne	Third Series 1935	(1936)
1603-1606	ed. S.A.H. Burne	Third Series 1940	
1608-9	ed. D.G.H. Salt	Third Series 1948-9	(1950)



BIBLIOGRAPHYSECONDARY SOURCES1. BOOKS

- ALBION (R.G). Forests and Sea Power. 1926.
- ANON. The Beauties of England and Wales (Worcestershire). 1808.
- ASHTON (T.S) & SYKES (J). The Coal Industry of the 18th Century. 1929.
- ASHTON (T.S). An 18th Century Industrialist. 1939.
- ASHTON (T.S). Economic History of England in the 18th Century. 1955.
- ASHTON (T.S). Economic Fluctuations in England (1700-1800) (Ford Lectures 1953) 1959.
- BARLEY (M). English Farm House and Cottage. 1961.
- BAUGH (D.A). Naval Administration in Age of Walpole. 1968.
- BAXTER (R). Poor husbandman's advocate against rich racking landlords in R.B. Schlatter, The Social ideas of religious leaders, 1944
- BESSE (T). Collections of the sufferings of the people called Quakers. 1753.
- BERGIER (J.F). The Industrial Bourgeoisie and the rise of the Working Class (1700-1914). Fontana Economic History of Europe Vol.3. Section 7. 1971.
- BEVAN (G.P). The British Manufacturing Industries. 1876
- BINING (A.C). British Regulation and the Colonial Iron Trade Pennsylvania. 1933.
- BISHOP (J.L). A History of American Manufactures from 1608-1860 Vol.I. 1868 repr. 1967.
- BRASSINGTON. W. SALT. Historic Worcestershire 1894.
- BURTON (J.R). History of Bewdley 1883.
- BYTHELL (D.) The Hand Loom Weavers. 1969.

- CHALONER (W.H). & MUSSON (A.E). Industry and Technology. 1963.
- CHALONER (W.H). Lombes Derby Mill. History Today Nov. 1953.
- CHAMBERS CYCLOPAEDIA. 1741 Edition (Slightly revised version of 1721 edition).
- CHANDLER (G). & HANNAH (I.H). DUDLEY. The Town as it was and is 1949.
- CHAPMAN (S). The Early Factory Masters. 1967.
- CHAPMAN (S.D). The History of Working Class Housing. 1970.
- CHITHAM (E). The Black Country. 1972.
- CLARK (G.N). Guide to English Commercial Statistics 1696-1782: 1959.
- CLARKSON (L.A). The Pre Industrial Economy in England. 1500-1750 1971.
- COLMAN (D.C). British Paper Industry 1495-1860. 1958.
- COPE (T). Bilston Enamels 1966. Staffordshire County Museums Publications.
- COTTON (W.A). Coins Tokens and Medals of Worcestershire. 1885.
- COURT (W.H.B). The Rise of the Midland Industries 1600-1838. 1938.
- CULLEN (L.M). Anglo Irish Trade. 1968.
- CURZON (W.D). Manufacturing Industries of Worcestershire. 1881.
- DAVIES (K.G). The Royal African Company. 1957.
- DAVIS (N.J). Token Coinage of Warwickshire. 1895.
- DAVIES (V). and HYDE (H). Dudley and the Black Country. 1760-1860. Dudley Public Library Transcripts No. 16.
- DAVIS (R). The Rise of the English Shipping Industry in the 17th and 18th Centuries. 1962.
- DAVIS (W.J). Token Coinage of Warwickshire. 1895.
- DEAN (K) & LIDDIE (P). The Urban Growth of Walsall. 1763-1967. 1968.
- DEANE (P). The Industrial Revolution in England. 1700-1914. Fontana Economic History of Europe Vol IV Section 2 1969.

- DEANE (P). & COLE (W.A). British Economic Growth 1688-1959.  
1962.
- DEANE (P). The First Industrial Revolution. 1967.
- DEFOE (D). The Complete English Tradesman. 1726.
- DEFOE (D). Tour Through England and Wales. <sup>1724-6</sup> Pelican Edition  
1970.
- DEFOE (D). Plan of the English Commerce. 1728 ed. Cole 1 84.
- DENT (J) & HILL (C). Memorial of the Old Square. 1897.
- DENT (J). The Quest for Nonesuch 1962.
- DODD (A.H). Industrial Revolution in North Wales. Cardiff.  
1933.
- DRAKE (M). Population in Industrialisation. 1969.
- DUDLEY (D). Metallum Martis. 1665. (reprinted 1854).
- EAST (W.G). The Severn Waterway in the 18th and 19th  
Centuries. 1951.  
In Random Essays in Geography. Strang  
& Wooldridge.
- EDE (J). A History of Wednesbury. 1962.
- EDEN (F.M). State of the Poor. 1794.
- ELWELL (C.J.L). The Iron Elwells. 1966.
- ERDESWICK (S). Survey of Staffordshire. Edition of 1820.  
ed. by T. Harwood.
- EVERITT (A). Change in the Provinces. University Leicester.  
1969.  
Department of English Local History.  
Occasional Papers 2nd Series No.1.
- EVERSLEY (D.E.C). Population Economy & Society in  
Population in History. Glass & Eversley.  
1965.
- EVERSLEY (D.C). Home Market and Economic Growth 1750-1780 in  
Jones E.L. (ed) & Mingay G.  
Land Labour and Population 1967.
- FELL (A). The Early Iron Industry in Furness & District. 1908.
- FISHER (P.J). (ed) Essays in the Social and Economic and  
Social History of Tudor and Stuart England.  
1961.

- FITTON (R.S) & WADSWORTH (A.P). The Strutts and the Arkwrights 1758-1830. 1958.
- FLETCHER (M). NETHERTON Edward I to Edward VIII. Dudley Public Library. Transcript No.15.1969
- FLINN (M.W). Men of Iron. The Crowleys in the Early Iron Industry. 1962.
- GALE (W.K.V). The Black Country Iron Industry. 1966.
- GALE (W.K.V). The British Iron and Steel Industry. 1967.
- GAUT (R.C). A History of Worcestershire Agricultural and Rural Evolution. 1939.
- GENTLEMAN'S MAGAZINE. Library Vol. XIII Staffordshire ed. G.L. Gomme. 1899.
- GENTLEMAN'S MAGAZINE. Library Vol. XIV Worcestershire.1902.
- GEORGE (M.D). London Life in the 18th Century. 1925.
- GILBOY (E.W). Wages on Eighteenth Century England. 1934.
- GILL (C). Studies in Midland History. 1930.
- GLAMANN (K). European Trade 1500-1750. Fontana Economic History of Europe Vol.II Section 6. 1971.
- GLASS (D.V). & EVERSLEY (D.E.C). ed. Population in History. 1965.
- GOUGH (J.W). The Rise of the Entrepreneur. 1969.
- GRAZEBROOK (H.S). The Barons of Dudley. Staffordshire Historical Collections Vol. IX.
- GREENE (W.) The Gun and its Development. 1881.
- GREENSLADE (M). & STUART (D.G). History of Staffordshire. 1965.
- GRIFFITHS (S). Guide to the Iron Trade of Great Britain. 1873.
- GRIFFITHS (G). Free Schools of Worcestershire. 1852.
- GRIFFITHS (G). Free Schools and Endowments of Staffordshire. 1860.
- GUTTERY (D.R). The Story of Pensnett Chase. 1950.
- HABINGTON (T). Survey of Worcestershire. 1641.

- HACKWOOD (F.W). Wednesbury Papers. 1884.
- HACKWOOD (F.W). History of Darlaston. 1887.
- HACKWOOD (F.W). Wednesbury Workshops. 1889.
- HACKWOOD (F.W). History of Tipton. 1891.
- HACKWOOD (F.W). Some Records of Smethwick. 1896.
- HACKWOOD (F.W). Sedgley Researches 1898.
- HACKWOOD (F.W). History of West Bromwich 189
- HACKWOOD (F.W). Wednesbury Notes and Queries. 1900.
- HACKWOOD (F.W). Wednesbury Ancient and Modern. 1902.
- HACKWOOD (F.W). Religious Wednesbury. 1900.
- HACKWOOD (F.W). The Story of the Black Country. 1902.
- HACKWOOD (F.W). Chronicles of Cannock Chase. 1903.
- HACKWOOD (F.W). Handsworth Old and New. 1908.
- HACKWOOD (F.W). Annals of Willenhall. 1908.
- HACKWOOD (F.W). Oldbury and Roundabout. 1915.
- HACKWOOD (F.W). Staffordshire Sketches. 1916.
- HACKWOOD (F.W). Odd Chapters in the History of Wednesbury.  
1920.
- HADFIELD (C). Canals of the West Midlands. 1966.
- HAMILTON (H). The English Brass and Copper Industries to  
1800 2nd.ed. 1967.
- HARRIS (J.R). ed. Liverpool and Merseyside. 1970.
- HARRISON (W). & WILLIS (G). The Great Jennens Case. 1879.
- HARTLEY (N). Iron Works on the Saugus. 1957 (Oklahoma).
- HARTWELL (R.M). ed. Causes of the Industrial Revolution in  
England. 1967.
- HARTWELL (R.M). The Industrial Revolution and Economic  
Growth. 1971.
- HARWOOD (T). A Survey of Staffordshire. 1820.
- HAVINDEN (MA). Household & Farm Inventories in Oxfordshire  
1550-1590. 1965.

- HAYES (W). & CARTER (W.F). Hayes of Wolverhampton. 1940.
- HECHT (J). Domestic Servant Class in 18th Century England.  
1956.
- HENN (E). The Handmade Nail Trade of Dudley and District. c.1926
- HILL (C). Reformation to Industrial Revolution. 1967
- HILL (J). & BICKLEY (W.B). Register of St. Martin's Church,  
Birmingham. 1889.
- HILTON (R). A Mediaeval Society. 1966.
- HINTON (R.W.K). The Eastland Trade and The Common Weal in  
the Seventeenth Century. 1959.
- HOLLAND (J.S). Ships of British Oak. 1971.
- HOMESHAW (G.J). Corporation of the Borough and Foreign  
of Walsall. 1960.
- HOMESHAW (E.J). The Story of Bloxwich. 1955.
- HOSKINS (W.G). The Industry Trade and People of Exeter.  
1688-1800. 1935.
- HOSKINS (W.G). Provincial England. 1963.
- HOSKINS (W.G). The Midland Peasant. 1957.
- HOUGHTON (J). A Collection for the Improvement of Husbandry  
and Trade. 1692.
- HUGHES (T). & HUGHES (B). English Painted Enamels. 1951.
- HUGHES (E). North Country Life in the Eighteenth Century.  
1952.
- HUGHES (G.B). English Snuff Boxes. 1971.
- HUTTON (W). History of Birmingham. 1781. 1808 (edition)
- JOHN (A.H). The Industrial Development of South Wales. 1952.
- JOHN (W.D). Pontypool and Usk Japanned Wares. 1953.
- JONES (E.L). (ed) Agriculture and Economic Growth in England  
1650-1815. 1967.
- JONES (W.H). History of the Congregational Churches of  
Wolverhampton. 1662-1894. 1894.
- JONES (W.H). The Story of the Japan, Tin Plate Working, Bicycle  
and Galvanising Trades in  
Wolverhampton. 1900.

- JORDAN (W.K). Philanthropy in England 1480-1660. 1959.
- KING (G). Two Tracts. ed. G.E. Barnett. 1936.
- LANGFORD (J.A). A Century of Birmingham Life. 1868.
- LASLETT (P). The World we have lost. 1965.
- LATIMER (J). Annals of Bristol in the 18th Century. 1893.
- LAWLEY (G.T). History of Bilston. 1868.
- LAWLEY (G.T). History of Bilston. 1893.
- LAWLEY (G.T). Bilston in the 17th Century. 1920.
- LEADER (R.E). Sheffield in the 18th Century. 1901.
- LEADER (R.E). The History of the Company of Cutlers in  
Hallamshire in The County of  
York. 1905-6.
- LELAND (J). Itinerary. L. Toulman Smith (ed).
- LLOYD (G.B). The Cutlery Trades . . . . . 1913.
- MANDER (G.P). Transcripts of Minute Books of Charity  
School 1716-1881.
- MANDER (G.M). Case for the Preservation of the Old Deanery.  
1914.
- MANDER (G.P). Wolverhampton Chancery and other records.  
(Ms. a-d).
- MANDER (G.P). History of Wolverhampton Grammar School. 1913.
- MANDER (G). & TILDESLEY (N.J). History of Wolverhampton.  
1960.
- MANTOUX (P). The Industrial Revolution in the 18th Century.  
1928.
- MARSHALL (J.D). Industrial Revolution in Furness. 1958.  
Barlow.
- MATHEWS (A.G). The Congregational Churches of Staffordshire.  
1924.
- McINNES (C). Bristol, Gateway of Empire. . 1939.
- MILLER (G). Parishes of the Diocese of Worcester. 1890.
- MINCHINTON (W.E). The British Tin Plate Industry. 1957.
- MINCHINTON (W.E). (ed). The Growth of English Overseas  
Trade in the Seventeenth and  
Eighteenth Centuries. 1969.

- MINGAY (G.E). English Landed Society in the Eighteenth Century. 1963.
- MITCHELL (B.R). & DEANE (P). Abstract of British Historical Statistics. 1962.
- MOFFIT (L). England on the Eve of the Industrial Revolution. 1925.
- MOLS (R). Population in Europe 1500-1700. Fontana Economic History of Europe Vol.II Sec.I. 1972.
- MUSSON (A.E). Science Technology and Economic Growth.1972.
- NASH(T). Collections for A History of Worcestershire. 2 Vols. 1799.
- NICHOL (J). Worshipful Company of Ironmongers. 1928.
- NOAKE (J). Guide to Worcestershire. 1868.
- PARES (R). War and Trade in West Indies. 1936.
- PARES (R). West India Fortune. 1950.
- PARES (R). Merchants and Planters. 1960.
- PERKIN (H). The Origins of Modern <sup>English</sup> Society 1780-1880. 1969.
- PERKINS (M). Dudley Tradesmens Tokens and History of Dudley Banks, Bankers and Banknotes. 1905.
- PETERS (J.E.C). Development of Farm Buildings in West Staffordshire. 1969.
- PHILLIPS (E). History of the Welsh Coalfields. 1925.
- PITMAN (F.W). Development of West Indies. 1700-1763. 1917.
- PITT (W). A General View of the Agriculture of Staffordshire. 1794.
- PITT (W). Topographical History of Staffordshire. 1817.



- PLOT (R). Natural History of Staffordshire. 1686.
- POOL (B). Navy Board Contracts. 1660-1832. 1966.
- PRESNELL (L.S). Country Banking in the Industrial Revolution. 1956.
- PRESNELL (L.S). Studies in the Industrial Revolution. Essays Presented to T.S. Ashton. 1960.
- PREST (J). Industrial Revolution in Coventry. 1960.
- PRICE (J). Story of Bilston. 1951.
- PRILE (G). Treatise on Fire and Thief Proof Repositories Locks and Keys. 1856.
- RAISTRICK (A). Dynasty of Ironfounders. 1953.
- RAISTRICK (A). Quakers in Science and Industry. 1951.
- RAMSAY (G.D). English Overseas Trade. 1957.
- REDFORD (A). Labour Migration in England. 1800-1850. 1926.
- REES (W). Industry before the Industrial Revolution. 2 vols.
- REEVES (J). History and Topography of West Bromwich. 1836.
- ROEKPE (H.G). Movements of British Iron and Steel Industry. Illinois. Studies in the Social Sciences. 1956.
- ROGERS (J.E). THOROLD. Six Centuries of Work and Wages. 1884.
- ROLLASON (A.A). The Old Non-Parochial Registers of Dudley. 1899.
- ROLL (E). An Early Experiment in Industrial Organisation. 1930.
- ROLL (L.T.C). Worcestershire. 1949.
- ROPER (J.S). History of Coseley. 1952.
- ROPER (J.S). Historical Buildings of Wolverhampton. 1957.
- ROPER (J.S). History of St. John's Church. 1958.
- ROPER (J.S). Transcript of the Constables Accounts of Wolverhampton. 1688-1750. 1960.
- ROPER (J.S). The Register of St. Edmunds Dudley. Vol.1. 1540-1611. 1961.

- ROPER (J.S.). <sup>Dudley</sup> The Town in the Sixteenth Century. 1964.  
Dudley Public Libraries Transcript No.4.
- ROPER (J.S.). Dudley the 17th Century Town. Dudley Public  
Libraries Transcript No.5. 1965.
- ROPER (J.S.). Wolverhampton Deeds. 1965.
- ROPER (J.S.). Wolverhampton the Early Town. 1965.
- ROPER (J.S.). The Hand Inn; Tunwall St. 1966.
- ROPER (J.S.). Wolverhampton. The Early Town and its History.  
1966.
- ROPER (J.S.). Stourbridge Probate Inventories. 1966.
- ROPER (J.S.). Wolverhampton Borough Charter. 1263. 1967.
- ROPER (J.S.). Wolverhampton Attornies and Solicitors. 1967.
- THOMAS (H.R.). The Enclosure of Open Fields and Commons in  
Staffordshire. William Salt. Historical  
Collections Relating to Staffordshire.  
Third Series. 1931. 1932.
- THOMAS (A.L.). Geographical Aspects of the Development of  
Transport and Communications affecting  
the Pottery Industry of North Stafford-  
shire. William Salt Society. Historical  
Collections for Staffordshire. Third  
Series. 1934 Part 1.
- 
- TILDESLEY (N.W.). History of Willenhall. 1952.
- TILDESLEY (N.W.). Dr. Richard Wilkes. 1960.
- TIMMINS (S.). Birmingham and the Midland Hardware District.  
1866.  
the
- THOMPSON (E.P.). Making of English Working Class. 1963.
- TREVOR ROPER (H.R.). The Gentry. Economic History Review  
Supplement. 1953.
- THRUETT (S.). Mediaeval Industry. 1000-1500. Fontana Economic  
History of Europe. Vol.I. Section 6.  
1971.
- TUNNICLIFFE (G.). Topographical Survey of the counties of Staffs  
and Chester, Nantwich. 1787.

- TWAMLEY (W). History of the Castle and Priory of Dudley. 1867.
- UNDERHILL (E.A). Story of the Ancient Manor of Sedgley. 1942.
- UNWIN (C). Industrial Organisation in the Sixteenth and  
Seventeenth Centuries (reprint) 1957.
- VAISEY (D.G). Probate Inventories of Lichfield and District.  
1568-1680.  
Staffordshire Record Society.  
Collections for a History of Stafford-  
shire. Fourth Series. Vol.V.
- VEALL (J.S). Old Houses of Wolverhampton. 1889.
- VICTORIA COUNTY HISTORY. Staffordshire. Vol.I. ed. W.Page.  
1908.  
Staffordshire Vol.II. ed. M.Greenslade. 1967.  
Worcestershire Vol.I. A.E. Doubleday. 1901.  
Worcestershire Vol.II. J.W. Willis-Bund 1906.  
Worcestershire Vol.III. J.W. Willis-Bund 1913.  
Worcestershire Vol.IV. J.W. Willis-Bund 1924.  
Worcestershire Vol.VII. W.B. Stephens. 1964.
- VIDALENC (J). La Petite Metallurgie Rurale en Haute Normandie.  
Sous L'Ancien Regime. 1946.
- WADSWORTH (A.P). & MANN (J de L). The Cotton Trade and  
Industrial Lancashire. 1600-1780. 1931
- WALTON (J). Nailmakers of Darton. T.S. (Sheffield Lib.914)
- WEST (J). Village Records. 1962.
- WEST MIDLAND GROUP. Conurbation - A Planning Survey of  
Birmingham and The Black Country. 1948.
- WESTERFIELD (R.B). Middlemen in English Business. 1660-1760.  
1915.
- WHITE (L). The Expansion of Technology 500-1500. Fontana  
Economic History of Europe. Vol.1. Sect.4.  
1969.
- WILKINS (C). History of Iron and Steel and Tinsplate and other  
trades of Wales. 1903.
- WILLAN (T.S). The Navigation of the River Weaver. Chatham  
Society. Third series. Vol. III. 1951
- WILLAN (T.S.) The English Coasting Trade. 1938

- WILSON - CARUS~~E~~(ed). Essays in Economic History. Vol.1.  
1954  
Vol.2.  
1962.
- WILSON (R.G) ~~Gentleman~~Merchants. 1700-1830. 1971
- WILLAN (T.S). River Navigation in England 1600-1750. 1936.
- WILLETT (M). West Bromwich. 1882.
- WILLIAMS (D). History of Modern Wales. 1950.
- WILLMORE (F). A History of Walsall and its Neighbourhood.  
1887.
- WILSON (C). England's Apprenticeship 1603-1763. 1966.
- WILSON JONES (J). The History of the Black Country n.s.  
(c.1951).
- WISE (M.J). (ed). Birmingham and its Regional Setting.  
A Scientific Survey. 1950.
- YARRANTON (A). England's Improvement by Sea and Land.  
2 parts. London 1671-1681.
- YOUNG (A). A Six Months Tour of the North of England.  
4 Vols. London. 1770-71.
- YOUNG (A). A Six Weeks Tour through the Southern Counties  
of England and Wales. 1769.

2. ARTICLES

- ALLEN (J.S). John Fidoe's 1727 Newcomen Engine at Wednesbury. Staffordshire. Translations of the Newcomen Society Vol.XXXVI 1963-4.
- ANDERSON (B.L). Provincial Aspects of the Financial Revolution in the 18th Century. Business History. Vol.XI. No.1. Jan. 1969.
- ANDERSON (B.L). Money and the Structure of Credit in the 18th Century. Business History Vol.XII No.2. July 1970.
- ASHTON (T.S). Domestic System in Early Lancashire Tool Trade. Economic History Vol.1. 1926-9.
- ASHTON (T.S). Bills of Exchange and Private Banks in Lancashire 1790-1830. Economic History Review Vol. XVI. 1945.
- AWTRY (B.J). Charcoal Iron Masters 1600-1785. Lancashire and Cheshire Record Society Vol.109.1957.
- BARROW (W). Birmingham Markets and Fairs. Transactions of the Birmingham Archaeological Society. Vol.XXXVIII. 1912.
- BAXTER (R). Last Treatise. ed. F.J. Powicke. Bulletin of John Rylands Library X, 1926
- BENTON (R). The Bilston Enamellers. Transactions of the English Ceramic Circle. Vol.IV. No.3.1971
- BLACKMAN (J). Food Supply of an Industrial Town. Business History. Vol.V. 1963.
- BUCHANAN (K.McPh). Localisation of Seventeenth Century Worcestershire Industry. Transactions of the Worcestershire Archaeological Society New Series. Vol. XVII. 1940. Vol. XVIII. 1941. Vol. XIX. 1943.
- BUCKATZSCH(E.J). Places of Origin of a Group of Migrants into Sheffield 1624-1799. Economic History Review. Vol.II. No.3. 1950.
- BUCKATZSCH (E.J). Geographical Distribution of Wealth in England 1086-1843. Economic History Review 2nd Series. Vol.III. 1950.
- BUTTERWORTH (R). Ecclesfield Nailers. Transactions of the Hunter. Archaeological Society.Vol.II.

- CHAMBERS (J.D). Enclosure and Labour Supply in the Industrial Revolution. Economic History Review. 2nd Series. Vol.V. No.3. 1953. Economic History Review. Vol.XI. 1958.
- CHAMBERS (J.D). The Vale of Trent 1670-1800. Economic History Review Supplement 3. 1957.
- COATS (A.W). Changing Attitudes to Labour in Mid-Eighteenth Century. Economic History Review 2nd Series. Vol.XI. No.1. 1958-9.
- COLEMAN (D.C). The Scriveners. Economic History Review. 2nd Series. Vol.IV No.2. 1951.
- COLEMAN (D.C). Lancashire and the Estate Market. Economic History Review. Vol.IV. 1951.
- COLEMAN (D.C). Naval Dockyards under the Later Stuarts. Economic History Society Review 2nd Series. Vol.VI. No.2. 1953.
- COLEMAN (D.C). Labour in the English Economy of the Seventeenth Century. Economic History Review. Series II.Vol.VIII.No.2. 1956.
- COLEMAN (D.C). Technology and Economic History 1500-1750. Economic History Review Series 2. Vol.XL. 1959.
- COURT W. H. Industrial Organisation and Economic Progress in 18th Century Midlands. Transactions of the Royal Historical Society. 4th Series. Vol.XXVII. 1946.
- CROSSLEY (D.W). The Management of a Sixteenth Century Ironworks. Economic History Review 2nd Series. Vol.XIX. 1966.
- DAVIES (A.S). The Charcoal Iron Industry of Powysland. Montgomeryshire Collections XLVI. 1950.
- DAVIES (A.S). The Early Iron Industry of North Wales. Trans. Newcomen Society XXV.1947-49
- DAVIES (M.C). Country Gentry and Payments to London.1650-1714 Economic History Review 2nd Series Vol.XXIV. No.1. 1971.
- DAVIS (R). English Foreign Trade 1660-1700. Economic History Review. 2nd Series. Vol.VII.No.2. 1954
- DAVIS (R). English Foreign Trade 1700-1774. Economic History Review. 2nd Series. Vol.XV. 1962.

- DAVIS (R). Merchant Shipping in the Economy of the Late Seventeenth Century. Economic History Review. 2nd Series. Vol. IX. No.1. 1956.
- DOWNES (R.L). The Stour Partnership 1726-1736. Economic History Review. 2nd Series. III 1950.
- DY. (A.D). The Economy of Tudor Worcester. University of Birmingham Historical Journal. Vol.X.No.2. 1966.
- DY. (A.D). Probate Inventories of Worcestershire 1545-1614 Transactions of the Worcestershire Archaeological Society. Vol.XIV.1967
- EVANS (I). Charcoal Iron Industry of Denbighshire. Transactions of the Denbighshire History Society Vol.9. 1960. Vol.10. 1961.
- EDWARDS (I). A Shropshire Iron Partnership. Transactions of the Shropshire Archaeological Society vol. LXI 1956/7
- EVERSLEY (D.E.C). A Survey of Population in an Area of Worcestershire 1660-1850. Population Studies Vol.X. London 1956-7.
- FISHER (F.J). London's Export Trade in the Early Seventeenth Century. Economic History Society Review. 2nd Series. Vol.III. No.2. 1956.
- FLINN (M. ). Growth of the English Iron Industry.1660-1760. Economic History Review Aug. 1958. 2nd Series. Vol. XI.
- FLINN (M). The Lloyds in the Early Iron Industry. Business History Vol.II. No.1. Dec. 1959.
- FLINN (M). & BIRCH (A). The English Steel Industry before 1856 with special reference to the development of the Yorkshire Steel Industry. Yorkshire Bulletin of Economic and Social Research, VI. 1954.
- GIBBS (F.W). The Tinsplate Industry. III. John Hanbury. Annals of Science Vol.VII. 1951.
- GIBBS (F.W). John Hanbury 1663-1734. Annals of Science. Vol.VII. 1951.

- GIDDENS (P.H). Trade and Industry in Colonial Maryland. 1753-1789. Journal of Econ. & Business History. Vol.IV.No.3.
- GRASSBY (R). English Merchant Capitalism in the late 17th Century. Past & Present vol. XLVI 1970
- GRASSBY (R). The Personal Wealth of the Business Community in 17th Century England. Economic History Review. 2nd Series. Vol.XXIII Aug. 1970.
- GRAZEBROOK (H.S). Heraldic Visitations of Staffordshire. William Salt Society. Collections for a History of Staffordshire. Vol.V. part 2.
- GUTTERY (D.R). Stourbridge Market in Tudor Times. Transactions Worcestershire Archaeological Society Vol. 1952.
- HAMMERSLEY (G). The Crown Lands and their exploitation in the Sixteenth and Seventeenth Centuries. Bulletin of the Institute of Historical Research. Vol. XXX 1957.
- HEY (D.G). A Dual Economy in South Yorkshire. Agricultural History Review. Vol.XVII. No.2. 1968
- HOSKINS (W.G). Harvest Fluctuations 1670-1759. Agricultural History Review Vol.XVI. Part 1. 1968
- HULME (E.W). Statistical History of the Iron Trade of England and Wales. Trans. Newcomen Soc. IX 1928-1929.
- JENKINS (R). The Oliver. Transactions of the Newcomen Society Vol.XII 1931.
- JOHN (A.H). Coal and Iron on a Glamorgan Estate 1700-1740. Economic History Review Vol.XIII 1943
- JOHN (A.H). War and the English Economy. Economic History Review. 2nd Series. Vol.VII No.3.1955
- JOHN (A.H). Aspects of Economic Growth in the first half of the Eighteenth Century. Economica vol. XXIX May 1961.
- JOHN (A.H). Agricultural Productivity of Economic Growth in England 1700-1760. Journal of Economic History vol. XXV 1965
- JOHNSON (B.L.C). The Foley Partnerships; the iron industry at the end of the charcoal era. Econ. History Review 2nd Series. IV.No.3. 1952



- JOHNSON (B.L.C). The Stour Valley Iron Industry in the late Seventeenth Century. Transactions of the Worcestershire Archaeological Society. Vol. XXVII. 1950
- JOHNSON (B.L.C). The Charcoal Iron Industry in the early Eighteenth Century. Geographical Journal CXVII 1951.
- JOHNSON (B.L.C). New light on the iron industry of the Forest of Dean. Transactions of the Bristol and Gloucester Archaeological Society LXXII 1953.
- JOHNSTONE (J.A). The Probate Inventories and Wills of a Worcestershire Parish. 1676-1775. Midland History Vol.1. No.1. Spring 1971.
- JONES (E.L). Agricultural Origins of Industry. Past & Present. vol. XL 1968
- JONES (E.L). Agriculture and Economic Growth. Journal of Economic History. Vol.XXV. 1965.
- KENYON (G.H). Petworth Town and Trades 1610-1760. Sussex Archaeological Collections. XCVI, 1958; XCVIII 1959; XCIX 1961;
- KENYON (G.H). Kirdford Inventories 1611-1776. Sussex Archaeological Society Collections. Vol. XCIII 1954.
- LANDOR (W.N). Staffordshire Incumbents and Parochial Records 1539-1680. William Salt Society. Collections for a History of Staffordshire. 3rd Series. 1915.1916.
- MANDER (G.P). The Constables. Wolverhampton Antiquary Vol.II. No.2. June 1937.
- MANDER (G.P). Samuel Proud's Snuff Box. Wolverhampton Antiquary Vol.II. No.2. June 1937.
- MANDER (G.P). The Molineux Family. Wolverhampton Antiquary Vol.II. No.1. July 1934.
- MANDER (G.P). Lost Tombstones. Wolverhampton Antiquary. Vol.I. No.10. Nov. 1927.
- MANDER (G.P). Two Voters Lists. Wolverhampton Antiquary. Vol.I. No.8. Oct. 1923.
- MANDER (G.P). Hearth Tax Returns of Bilston and Wednesfield. Wolverhampton Antiquary Vol.I. No.5. 1919.

- MANDER (G.P). Epitaph in St. Peter's Church, Wolverhampton  
Antiquary. Vol.I. No.5. 1919.
- MANDER (G.P). The Quaker Meeting. Wolverhampton Antiquary.  
Vol.I. No.6. 1919.
- MANDER (G.P). Hope of Nechells. Wolverhampton Antiquary.  
Vol.I. No.5. 1919.
- MANDER (G.P). Wolverhampton Hearth Tax Returns. 1663-1673.  
The Wolverhampton Antiquary. Vol.I.
- MATHIAS (P). The Social Structure in the Eighteenth Century  
a Calculation by Joseph Massie.  
Economic History Review. 2nd Series.  
Vol.X. 1957.
- MINCHIN TON (W.E). Bristol - Metropolis of The West in  
The Eighteenth Century. Transactions  
of the Royal Historical Society.  
5th Series. Vol.IV. 1954.
- MINCHIN TON (W.E). The Diffusion of Tinplate Manufacture.  
Economic History Review. 2nd Series.  
Vol.IX. 1956.
- MINCHIN TON (W.E). Trade of Bristol in the 18th Century.  
Bristol Record Society Vol.XX.1957.
- MINGAY (G.E). The Agricultural Depression. Economic History  
Review. 2nd Series. Vol.VIII No.3.  
1956
- MORTON (G.R). & GOULD (J). Little Aston Forge. 1574-1798.  
Journal of Iron and Steel Institute.  
March 1967. Vol.CCV.
- MORTON (G.R). & LE GUILLOU (M). The Rise and Fall of the  
Staffs. Pig Iron Industry. British  
Foundryman. July 1967.
- MOTT (R.A). The earliest use of coke for iron making. Gas  
World. 5th January 1957.
- MOTT (R.A). Abraham Darby (1 & 11) and the coal, iron  
industry. Paper read to the Newcomen  
Society. 11th December 1957.
- MUTTON (N). Charlecott Furnace. Shropshire Archaeological  
Society. vol. LVII 1967

- NEF (J). The Progress of Technology and the Growth of Large Scale Industry in Great Britain  
1540-1640 Economic History Review.  
vol. V 1934.
- NOKES (B.G). John English of Feckenham Needle Manufacturers.  
Business History. Vol.XI. No.1.  
Jan. 1969.
- PELHAM (R.A). Immigrant Population of Birmingham 1686-1726.  
Transactions of the Birmingham  
Archaeological Society. Vol.LXI.1937.
- PELHAM (R.A). Trade Relations of Birmingham During the  
Middle Ages.  
Birmingham Archaeological Society  
Transactions. LXII. 1943.
- PELHAM (R). Migration of the Iron Industry towards  
Birmingham in the Sixteenth Century.  
Birmingham Archaeological Society  
Transactions. Vol.LXVI. 1945-6.
- PELHAM (R.A). The Cloth Merchants of Warwickshire during  
the Middle Ages.  
Birmingham Archaeological Society  
Transactions. 1945-6. Vol.IXVI.
- PELHAM (R.A). The West Midland Iron Industry and the American  
Market in the Eighteenth Century.  
University of Birmingham Historical Journal  
II No.2. 1950.
- PELHAM (R.A). Establishment of the Willoughby Iron Works in  
North Warwickshire in the Sixteenth Century.  
University of Birmingham Historical Journal.  
. Vol. IV. 1953
- PELHAM (R.A). Corn Milling and the Industrial Revolution in  
the 18th Century. University of Birmingham  
Historical Journal , Vol.VI. No.2. 1958
- PELHAM (R.A). Water Mills of Edgbaston in Birmingham.  
Birmingham Archaeological Society Trans-  
actions. No.1. LXXVIII. 1962.
- PELHAM (R.A). Water Power Crisis in Birmingham. University  
of Birmingham Historical Journal.  
Vol. IX No.1. 1963.
- PHELPS-BROWN (E.H). & HOPKINS (S). Seven Centuries of The price  
of Consumables Compared with Builders'  
Wage Rates. Economica. n.s. Vol.XXIII.1956.

- POTTS (G). Early Iron Industry in Shropshire. Trans.  
Carodoc Field Club. Vol.IX. 1899
- RAISTRICK (A). South Yorkshire Industry. Newcomen Society.  
XIX. 1938.
- RAISTRICK (A). ALLEN (E). The South Yorkshire Ironmasters.  
1690-1750.  
Economic History Review IX 1939.
- ROBINSON (E). Boulton and Fothergill 1762-1782. University  
of Birmingham Historical Journal.  
Vol.VIII. 1959.
- ROBINSON (E). Eighteenth Century Commerce & Fashion. Matthew  
Boulton's Marketing Techniques.  
Economic History Review. 2nd Series.  
Vol.XVI. 1965-4.
- SCHAFER (R.G). Genesis and Structure of the Foley Ironworks  
Partnership of 1692. Business  
History Vol. XII No.1. Jan 1971.
- SCHUBERT (H.R). The King's Ironworks in the Forest of Dean.  
1612-1674  
Journal of the Iron and Steel  
Institution Vol.173. 1953.
- SITWELL (G). A Picture of the Iron Trade. Journal of the  
Derbyshire Archaeological Society X.  
1888.
- SKEEL (C.A.S). Letter Book of a Quaker Merchant. 1756-8.  
English History Review Vol. XXXI. 1916
- SMITH (B). The Galtons of Birmingham. Business History.  
Vol. IX. No.2. July 1967.
- STONE (L). Literacy & Education 1640-1900. Past & Present  
Vol. XLVII Feb. 1969.
- TATE (W.W). Worcestershire Field Systems. Transactions of  
Worcestershire Archaeological Society  
Vol.XX 1943.
- TUPLING (G.H). The Early Metal Trades and the beginnings of  
Engineering in Lancs. Lancashire and  
Cheshire Antiquarian Society  
Publications. LXX 1949.
- WESTWOOD (A). The Manufacture of Wrought Plate in Birmingham.  
Birmingham Archaeological Society. Vol. XXI  
18th March 1903.

- WHATBY (H). The Principio Iron Company. Pennsylvania Magazine of History and Biography. Vol.XI. 1888
- WILLIS-BUND (J.W). Social Life in Worcestershire in the first quarter of the Seventeenth Century Illustrated by the Quarter Sessions Records. Worcestershire Archaeological Society. Old Series. Vol.XXIII 1896.
- WILSON (C). The Entrepreneur in the Industrial Revolution in Britain. History Vol.XIII No.43. June 1957.
- WISE (M.J). Some factors influencing the growth of Birmingham. Geography. Vol.XXXIII 1948.
- WISE (M.J). Birmingham and its Trade Relations in the Early Eighteenth Century. University of Birmingham Historical Journal. Vol.II. 1949-50.
- YELLING (J). The Combination and Rotation of Crops in Worcestershire 1540-1660. Agricultural History Review. Vol.XVII. 1969.