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KIRK IRETON near WIRKSWORTH

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THE ALABASTER ANGELS OF CHELLASTON

(by Howard Usher)

The alabaster tomb of Ralph and Katherine Green at Lowick in Northamptonshire is one of the few extant tombs for which a construction contract has survived. The contract was granted to Thomas Prentys and Robert Sutton, carvers, of Chellaston and is dated 4th February 1418/9 (see Appendix). The effigies of Ralph and Katherine lie on a tomb chest with the details as described in the contract except that the arch over the tomb has been broken and removed. Around the walls of the tomb chest are eighteen angel weepers in niches and these have been described in detail by Colin Ryde (Ryde, 1976). He suggested that the carved angels seen at Lowick could be considered as a Chellaston workshop pattern and used to identify Chellaston work elsewhere.

The decorations on the walls of tomb chests seem mainly to be a matter of what was fashionable at the time, consistent with what the purchaser could afford. Early alabaster tombs may have plain undecorated walls (Newton Solney, c1375) or a single shield (Repton, c1400) or a shield in a quatrefoil (Polesworth, 1418). A blind arcade of empty niches was employed for Edward II's tomb at Gloucester (1327) but this was constructed of stone; a similar blind arcade in alabaster can be seen at Tong, Shropshire (1409). On later tombs, these empty niches become filled with weepers and, initially, in the first half of the fifteenth century, these are the figures of angels only. Later, the angel becomes intermixed with other figures such as apostles, saints, monks or members of the family (Norbury, 1473; Swarkestone, 1482) and eventually the angel disappears altogether.

Some angels on tomb chests bear resemblances in a number of features to the Lowick type pattern, but it is rare that exact duplicates are found. Eighteen tombs have been located with angels bearing some resemblance to the Lowick type, but only about three of these are virtually identical with Lowick. A very different type of alabaster angel with bent elbows and spiky wings can be seen in churches from Birmingham St Martins to Boston Stump and although contemporary with the Chellaston angel, it is almost certainly the product of another workshop. Another common pattern is of two angels kneeling, facing each other and holding a shield between them. This is known as the 'Yorkshire Angel' from its proliferation in that county, and there are three examples of Yorkshire angels on the short side of a tomb chest with Lowick type angels on the long side. This can only be explained by assuming that the tomb was constructed by two different workshops or that one workshop used two different patterns. This juxtaposition casts some doubt upon the theory that all angels of the Lowick type were carved by the Chellaston workshop. It could be that all workshops had similar pattern books for a variety of angels from which could be chosen the one which the client preferred. Other workshops active at this time existed in London, Nottingham, Burton, York and perhaps several other places. The tomb of Sir John Blaket (d 1431) in Icomb church, Gloucs, exhibits a number of figures on the walls of the tomb chest, among which are four angels resembling the Lowick type. However, these are carved from local oolite, not from alabaster, which tends to support the theory that they are merely a general popular pattern. By the middle of the sixteenth century, angels and weepers in niches had disappeared completely and were replaced by the monumental wall tombs of alabaster which became popular in the 16th and 17th centuries.

In the medieval period the only sources of alabaster suitable for carving into effigies were Chellaston and the Tutbury Castle Hayes - Fauld area (Firman, 1984). Documentary evidence on the topic in this period is sparse. We know that in 1367, Peter the Mason of Nottingham carved an alabaster altarpiece for St George's Chapel at Windsor. The altarpiece cost £200 and required ten eight-horse carts to transport it (Cheetham, 1962). In 1374, John of Gaunt, 2nd Duke of Lancaster, ordered some alabaster from his alabaster demesne at Tutbury or any other convenient place, for the construction of a tomb for his wife, Blanche, and himself, in Old St Paul's Cathedral. The blocks were carved in London by Henry Yaveley of Tutbury and Thomas Wreak at a cost of £486 (Camden Society, 1937). In 1414, the Abbot of Fécamp sent a party to Chellaston to choose alabaster for carving at Fécamp by Alexander de Barneval, master mason of Rouen, who accompanied the party to Chellaston. They travelled by boat to Newcastle and then by horse to Nottingham and Chellaston where they met "the merchant who sells it, named Master Thomas Prentis" (Stevenson, 1907). Thomas Prentis appears nearly five years later as the carver of the Lowick tomb. The only other extant contract for this period is that for a tomb in Bisham Abbey, Berks, for Richard

Hartcombe in 1421 at a cost of £22 13s 4d. The carver is Robert Brown of the Savoy, London, but unfortunately the tomb was destroyed at the Dissolution (Gardner, 1951). The Savoy was the London palace of the Dukes of Lancaster, who were also Lords of the Manors of Tutbury and Melbourne-with-Chellaston and thus had a strong interest in alabaster. Robert Brown has also been suggested as the carver of Henry IV's tomb in Canterbury Cathedral (1413).

In the absence of a contract, it is not possible to be certain of the date of construction of a tomb. We may know the date of the death of the person commemorated, but the tomb may have been constructed many years on either side of this event. It was quite common for a tomb to be built in the lifetime of the person depicted. Of the eighteen tombs showing features of the Lowick angel, the death dates lie roughly between 1410 and 1450. Thomas Prentiss flourished in 1414 and 1419, so he is unlikely to cover the whole period and the workshop could have been carried on by his family. This period coincides with the second phase of the Hundred Years War between 1413 when Henry V asserted his right to the French throne and 1453 when all English possessions in France except for Calais had been lost. It is not surprising that many of the knights depicted had fought in France and at least three of them died there. It was thus a boom time for monuments and the alabaster carvers were there to take advantage of it.

GAZETTEER

Lowick, Northamptonshire - the type pattern

The church of St Peter at Lowick, with its octagonal lantern tower, contains much medieval work in its windows, roofs and pew ends.

The alabaster effigy of the Earl of Wiltshire (d 1499) is a fine example of the carver's art, but it is the tomb with the effigies of Ralph and Katherine Greene with which we are concerned. Ralph Greene was a benefactor of the church and rebuilt the north chapel and chancel. He lived at Drayton House nearby where he died in 1417, but no will has survived. The two effigies lie side by side, clasping hands, with the details as described in the contract (see Appendix). They lie upon a tomb chest around which are 18 standing angels, 6 on each of the long sides and 3 on each of the short sides. The angels stand in pairs within niches under an ogee arch, the pairs of angels being separated by plain pilaster strips on the long sides. They have their hair brushed up in circlets and are holding a triangular shield called a 'heater' type. Characteristics which can be used for comparison purposes are the hair, wings, collar, gown, feet and shield. Eighteen tombs which have some or all of these characteristics are now described.

Ashbourne, Derbyshire

The alabaster effigies of Sir John Cockayne and his wife, Joan, lie in the Boothby Chapel of St Oswald's Church on an alabaster tomb chest. Sir John was with Henry V on his French expedition of 1411 and supported the Burgundian army at the Battle of St Cloud. Joan was his first wife and he later married Isabel Shirley who died in 1415 and whose monument stands at Polesworth in Warwickshire. Isabel's effigy at Polesworth lies upon a tomb chest with carved shields in quatrefoils in place of standing angels. Sir John did not die until 1447, but the fact that the Ashbourne monument depicts his first wife suggests that it may have been commissioned many years earlier (Sadler, 1941).

The hands of the two effigies are in the praying position and not clasped as at Lowick. The tomb chest has three angels on each of the long sides and two angels on one short side, standing in niches separated by two-stage blind arcades with 3-cusped heads. The angels are very similar in all details to the Lowick type.

Ashwellthorpe, Norfolk

There are only two pre-Reformation alabaster tombs in Norfolk and the one in All Saints Church at Ashwellthorpe, to the south of Norwich, shows characteristics of the Lowick angel. The effigies of Sir Edmund de Thorp and his wife, Joan, lie on a tomb chest between the chancel and the north chapel. Sir Edmund was also in the French wars and was with Henry V in the Normandy campaign of 1417, but was killed at the siege of the

Chateau de Louviers, near Rouen, in 1418. Ten angels are disposed around the tomb chest in plain rectangular niches with plain pilasters separating them. They are similar in details to the Lowick angel. The tomb was restored and arms painted upon the shields by Stuart Milner in 1967. The heraldry may be inaccurate as it is taken from a later window but the painting is most attractive (Purcell, 1968).

Aston-upon-Trent, Derbyshire

The tomb at All Saints Church, Aston, only two miles from Chellaston, shows a civilian and his wife clasping hands as at Lowick. There is no inscription and the tomb is attributed to the Hunt family from the heraldic devices carved on the shields carried by the angel weepers. The south side of the tomb has three angels which are very similar to Lowick, but are on a plain background without niches or decoration. On the west side of the tomb are two kneeling angels holding a shield between them, of the 'Yorkshire' type. The juxtaposition of the Chellaston angels on the long side of the tomb with Yorkshire angels on the short side can also be seen at Dodford and Harewood.

Pevsner accepted the style of the effigies as early 15th century (Pevsner, 1979) and the angels suggest the Chellaston style of c1420. However Mrs Wood at the Derbyshire Record Office has shown that the Hunt family settled in Aston only after 1513, when John Hunt bought the Aston Hall estate. There is an inconsistency here of about a century, suggesting either that the Hunts bought a family tomb with them to Aston or had their arms carved on the shields of someone else's tomb.

Barmston, East Yorkshire

In All Saints Church, Barmston, on the east coast of Yorkshire lies the effigy of a knight who is believed to be William Monceaux, who died in 1446. The style of the armour suggests a slightly earlier date, so like Cockayne at Ashbourne, it may have been carved before his death. Pauline Routh's photograph shows six angels separated by two-stage blind arcades similar to Ashbourne. The design of the angels approximates to Lowick except that they are holding large rectangular shields whereas the shields at Lowick are the 'heater' shape (Routh, 1976)

Bottesford, Leicestershire

In the chancel of the church of St Mary the Virgin, among the monuments to the Dukes of Rutland, are two tombs to members of the Roos family, ancestors of the Dukes, which were brought here when Belvoir Priory was suppressed. On the south side of the chancel is the effigy of Sir William de Roos who died in 1414. Eight angels on the tomb chest stand in niches separated by blank panels. The wings are similar to Lowick, but the hair has a middle parting and is curly, having features in common with Strelley. The angels hold rectangular shields as at Barmston.

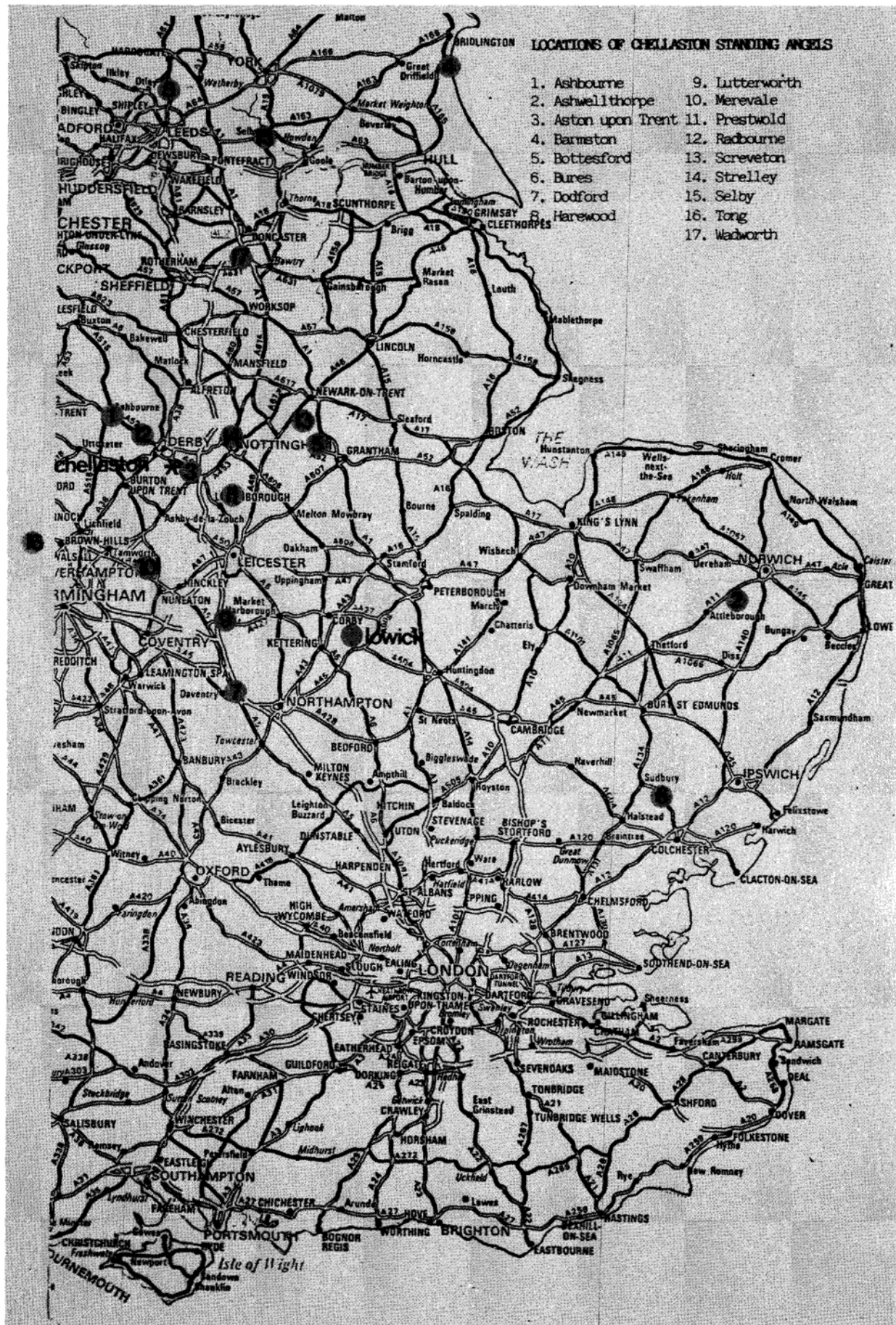
On the north side of the chancel lies Lord John Roos who died in 1421. He was with Thomas, Duke of Clarence, who, hoping to achieve another Agincourt, led a small English force against a superior Dauphinist army at Bauge, near Angers. Clarence, along with John Roos and most of their men, was killed. His effigy lies on a tomb chest with eight angels in niches separated by blind arcades as at Ashbourne. The shields are rectangular and the wings are tightly folded in. Some angels have circlets in their hair and some have centre parted hair; others are badly worn.

Bures, Suffolk

The tomb of Richard, 11th Earl of Oxford, and his wife, was originally at the De Vere manor of Earls Colne in Essex, but was later moved to Bures where it has been split between two monuments (Routh, 1985). Richard de Vere was in the invasion force with Clarence in the summer of 1412 and marched from Calais to Bordeaux. In 1415 he was with Henry V at Harfleur and Agincourt and died in 1420.

Dodford, Northamptonshire

The church of St Mary the Virgin lies in the valley of the infant Nene between Northampton and Daventry. The alabaster tomb has retained its inscription which tells us that "hic jacit Johes Cressey miles ... qui obiit apud (sic)



toul in lorrina iij die martii anno dni mCCCxliiii". So John Cressey, knight, died on 3rd March, 1444/5, towards the end of the French wars, at Toul in Lorraine, and his body was brought back to rest in this quiet village.

On the south side of the tomb chest are four angels of the Lowick type, separated by single stage blind arcades. The triangular shields are carved with a lion rampant and other devices. On the west side of the chest is a pair of Yorkshire angels and on the north side are four more Chellaston angels and a knight. The knight is carved in stone, not alabaster, and seems to belong to the adjacent tomb of Wentiliane de Keynes who died c1375.

Harewood, West Yorkshire

The church of All Saints is situated in the park of Harewood House, and contains a unique collection of alabaster tombs, of which one is in the Lowick style. It is the tomb of Justice William Gascoigne and his wife, Elizabeth. Judge Gascoigne was the Chief Justice to Henry IV, but was discharged when Henry V became king in 1413. He died on 17th December, 1419. Pauline Routh observed that there are five standing angels on both the north and south sides of the tomb chest, holding triangular shields on a plain background without niches or decoration. On the east end are two more angels of the Lowick type and the west end displays two kneeling angels of the Yorkshire type (Routh, 1976).

Lutterworth, Leicestershire

In St Mary's Church are the effigies of a knight and his wife, built inside a recess apparently designed for the purpose, so that only one side of the tomb chest is visible. On this side are three angels in niches with complex traceried gablettes overhead, the angels being separated by small and large rosettes. Although the angels resemble Lowick in their gowns, collars and wings, the faces and hair are of a different style. The identity of the knight is unknown; unusually he wears a long gown over his armour and it has been suggested that he is either John Fielding (d 1403) or Sir William Ferrers of Groby (d 1444). As there are other monuments to the Fielding family nearby, perhaps the former is likely (Bloxham, 1861).

Merevale, Warwickshire

The Chapel of St Mary outside the Gate of Merevale Abbey has an alabaster knight with his lady lying on a tomb chest. There are six angels on the tomb chest separated by plain pilaster strips, and although they resemble Lowick closely in the face and gown, the hair has thick curls and the wings are long and sweeping to a point. The tomb may be that of William de Ferrers of Chartley (d 1449) and his wife, Elizabeth Belknap, although Chatwin suggests Edmund Ferrers of Chartley (d 1426) and Dugdale records a monument to Robert de Ferrers of Chartley (d 1412) (Chatwin, 1921; Dugdale, 1730).

Prestwold, Leicestershire

In St Andrew's Church is a 15th century tomb chest with the engraved alabaster tomb of a civilian in robes with his wife. Part of the inscription remains, so that we know that the tomb is that of Richard Neel, a Marshal of the King's bench, and Isabella, his wife. No date is given. Only two sides of the chest are visible, with two angels on one side and three on the other, the angels alternating with other figures which appear to be monks or scribes. Although the style of the angels has some points in common with Lowick, the wings are different and taper to a point as at Merevale. The wing feathers are not delineated and the projecting tips have disappeared and are shown inside the wing line, a feature observed at Swarkestone (Rolleston, 1482), which also has an engraved slab in place of effigies. The Chellaston provenance of this tomb is doubtful unless produced at a later date.

Radbourne, Derbyshire

In the north aisle of St Andrew's Church, close by the Radbourne Park home of the Poles, are two fragments of a tomb chest, with five angels. The angels resemble Lowick except that the wings are very tightly folded inwards, as on the John Roos tomb at Bottesford. Nearby is an incised tomb to a knight and his wife, which may have come from the same tomb. Pevsner suggested Peter de la Pole who died in 1433 (Pevsner, 1979).

Screveton, Nottinghamshire

Under the west window of the tower in St Wilfred's Church is the side of a tomb chest cemented to the wall and partially hidden behind a cupboard. It shows three angels separated by 2-stage blind arcades as at Ashbourne. The heads of the angels are severely worn and the hair scarcely visible; the wings are thin and tightly folded as at Radbourne. There is no monument in the church which can be associated with these angels.

Selby, Yorkshire

The much mutilated and rebuilt tomb of Lord John Darcy (d 1411) now stands at the west end of the north aisle in Selby Abbey church. Mrs Routh notes that there are six angels in plain niches separated by 2-stage blind arcades as at Ashbourne. The angels are of the Chellaston type but hold rectangular shields (Routh, 1976).

Strelley, Nottinghamshire

In a peaceful backwater between the vast Bilborough estate and the M1 motorway, stands the parish church of All Saints, Strelley. In the chancel are the effigies of Sir Sampson Strelley (d 1390) and his wife Elizabeth (d 1405). For a pillow, Sir Sampson rests his head on the head of a decapitated Saracen, but the tomb is now sadly much affected by damp. Around the tomb chest are 14 angels in niches, but the space between the niches is plain. The two angels at the west end are separated by a shield. The angels are clearly similar to Lowick, but have a variety of hairstyles - some with centre partings, some with rolls above and some with curls falling down. The monument is dated 1405-1410.

Tong, Shropshire

The Collegiate church of St Mary's & St Bartholomew at Tong has some wonderful examples of medieval craftsmanship, including seven table tombs of which five are constructed in alabaster, dating from 1409 to 1632. The tomb with Chellaston type angels is that of Sir Richard Vernon (d 1451) and his wife Benedicta. Sir Richard was Treasurer of Calais from 1444 to 1450. The effigies lie on a tomb chest which contains, on three sides, 12 standing angels in niches alternating with 11 apostles, all in a good state of preservation or carefully restored. On the north side of the tomb are two heavily restored Chellaston angels and the missing apostle. The alternation of angels with other figures seems to be a late development, and can be seen at Prestwold, Swarkestone and on early 16th century tombs such as Castle Donington and Clifton Campville.

Wadworth, South Yorkshire

The church of St John the Baptist contains the alabaster tomb of Edmund Fitzwilliam (d 1431) and his wife Maud. The tomb chest has been damaged but five angels remain on the north side and two complete angels with some shattered fragments on the south side. The angels are on a plain background without niches or decoration. They are holding heater type shields and their wings are narrow and compressed as at Radbourne.

APPENDIX

The Lowick Contract: Northants Record Office, Stopford-Sackville No 4329

This indenture made between Katherine, late the wife of Rauf Grene Esquire, William Aldewynde and William Marshall, clerk, of the one part, and Thomas Prentys and Robert Sutton of Chellaston in the County of Derby, carvers, of the other part, witnesses that the said carvers have covenanted and agreed, to make and carve, honestly and profitably, a tomb of stone called Alabaster, good, fine and pure, containing in length nine feet overall and in breadth four feet and a half overall, upon which tomb shall be made two images of alabaster; one the counterfeit of an Esquire, armed at all points, containing in length seven feet overall, with a helm under his head and a bear at his feet, and the other image to be the counterfeit of a lady, lying in her open surcoat, with two angels holding a pillow under her head and two little dogs at her feet, one of which said images holding the other by the hand, with two tabernacles called gablettes at their heads. The tomb shall contain in height at the two sides with the legerment three feet overall, on which side shall be the images of angels with tabernacles, holding shields

according to the device of the said Katherine, William and William. And also the said carvers shall make an arch above the said tomb in length and breadth with pendants and knobs and a crest at the ridge and other works appertaining to such a tomb. The tomb, images and arch shall be proportioned, gilded, painted and arrayed with colours well and sufficiently in the pure, honest and profitable manner appertaining to such a work. And all the said works shall be presently done and performed in all points in the manner aforesaid, shall be set up and raised by the said Thomas and Robert in the parish church of Lufwyk in the County of Northampton, at the costs and peril of the said Thomas and Robert in all manner of things between now and the feast of Easter which will be in the year of grace 1420. For the work in the aforesaid manner, matters and performances, the said Katherine, William and William will pay or will have paid to the said Thomas and Robert, or one of them, forty pounds of sterling which will be paid ten marks at these feasts: and ten marks at the feast of St Mark next ensuing and ten marks at the feast of the Nativity of St John the Baptist next ensuing and ten marks at the feast of St Michael the archangel next ensuing and ten marks which is to come will be paid when all the said works have been made and raised in the manner aforesaid. By all that aforesaid covenant the said Thomas and Robert will perform the work faithfully to which messrs Thomas and Robert are obliged.....In witness of these things, the aforesaid parties have interchangeably put their seals on the fourth day of February in the fifth year of the reign of King Henry the fifth.

Notes:

1. The above is a free translation from the original French.
2. Punctuation has been added.
3. On the copy seen, the last two lines were damaged and difficult to transcribe.

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THE BRASSINGTON MANORS - LAND TENURE AND USE 1550-1770: PART II

(by R. Slack,

CONTINUED FROM VOL 12, PART 3

ENCLOSURE

In the sixteenth and seventeenth centuries the land lying to the south and west of Brassington, where the steep valley levels out, was a mixture of arable land, growing corn, peas and beans, and pasture. On the eastern slopes of the valley below the plateau stretching to Carsington Pasture, were the village's common pastures. The rest of the land within the parish boundary was the 'moors and wastes', not to be enclosed until the early years of the nineteenth century. The old cultivated land was enclosed during the three preceding centuries, and by the time of the nineteenth century enclosures was referred to as "ancient inclosed lands". A glance at the map or, better, at the fields themselves, makes it plain that the fields here had been formed from the original 'lands' or strips, cultivated in that way for centuries. The field boundaries, here consisting of hedgerows, are quite unlike the geometrical stone walls of the later enclosure. Their curves clearly follow the lines of the old strips, and the strips themselves are easily seen as linear hollows and ridges. The village was surveyed for poor rate and land tax in 1835 and the fields named. Those names in the south of the parish are the same names as are regularly referred to in the wills, rentals and manorial land transfers surviving from earlier centuries. These fields had been created by enclosing parts of the original fields, the enormous patchworks of lands and their dividing 'balks'. An example is seen in the fields with the words "Ralph Furlong" in their names. They had all been carved from the original Ralph Furlong, which lay between Nether and Middle Lanes, and amounted to about fifty acres. The villagers had worked the original fields co-operatively, before the lords and, no doubt, some of the tenants, saw the profit to be made in smaller, hedged, field, grazed by the sheep whose wool was intermittently so profitable from the fifteenth century onwards. The process of enclosing adjacent lands had begun before the mid-sixteenth century,

Sheep farming was the main reason for the early enclosures, but by the closing years of the sixteenth century lords and tenants were enclosing for more efficient arable farming. The open fields hampered crop-growing in a number of ways. They could only be worked as efficiently as the least efficient farmer managed his strips since everyone had to grow the same crop as his neighbours and sow and reap it at the same time. The strips were manured only by the sheep which were folded on them for half of the year and by the sheep, cattle, pigs and horses which grazed them during the year when they were left fallow - they were in consequence poor producers. The scattered strips, scattered in order to ensure a fair distribution of good and poorer ground, were a further hindrance to efficient farming - many were difficult for a farmer to reach without crossing his neighbours' land. Nevertheless the very complicated tenure systems, combining copyhold bound by the custom of the manor, leasehold for specified periods, and freehold, made change difficult and therefore slow. A will of 1665 seems to show that sometimes adjacent strips, amalgamated into enclosed fields, continued to be sub-let as strips and cultivated as before. This is the will of Richard Knowles in which he leaves "two lands or sellions lyeing in his Close called Bandlong furlong", stipulating that the present tenant should keep them for a year after his death, at the existing rent. There is evidence showing how some of the sixteenth century enclosures were accomplished, and how they left a mix of enclosed and open-field holdings in the same manor. A document¹⁰ in the Arundel Castle Manuscripts reveals that in the early 1580s George, Earl of Shrewsbury, was "treating about Exchange of some freehold & copyhold lands with some tenants at Brassington for the better Division of the Lordship". These transactions had the effect seen in a 1588 rental of the manor, which includes entries for both open-field holdings and individually farmed fields. In the following entry John Harrison's holding on the open fields is charged as 20s per annum:

Jo harrisson for v pcells of land in the Towne feilds called parr
furlong lowe cliffe Balke and the short brech & the buck leather p an

xx^s

The fields called Lowcliffe Back are numbered 536-539 on the nineteenth century parish map. They are on the south west of the village and amount to 9a 2r 22p. Buxlether (Bucksleather) is at number 646 (3a 2r 36p). Short



Brassington Enclosure - the earliest citations of enclosed ground bearing field names used in the 1835 Survey. (Map adapted from Parish Map c. 1820 - D1297/P1)

- | | |
|---|---|
| 1. Pater Noster. 1565. (DL 30 625 51) | 14. Span Close. 1640. (166M/M1) |
| 2. Holme Yard. 1565. (DL 30 625 51) | 15. Great Flats. 1640. (166M/M1) |
| 3. Caldwell Sitch. 1580. (DL 30 639 52) | 16. Refurlong (Ralph Furlong). 1640. (166M/M1) |
| 4. Gorse (Goast) Furlong. 1581. (ACM 5114) | 17. Longholme Close. 1655. (166M/M1) |
| 5. Elme Yarde. 1587. (DL 30 643 52) | 18. Bandlong Furlong. 1665. (Will, Richard Knowles, probate 1672/3) |
| 6. Peaselands. 1587. (ACM 5118) | 19. Brookehurst. 1665. (Will, Richard Knowles, probate 1672/3) |
| 7. Blackfurlong Croft. 1619. (DL 30 664 54) | 20. Clipshead. 1665. (Will, Richard Knowles, probate 1672/3) |
| 8. Upper & Nether Yards. 1620. (DL 43 1 19) | 21. Holloway Close. 1665. (166M/M1) |
| 9. Grosse Greene. 1620. (DL 43 1 19) | 22. Banwoods. 1666. (Will, Thomas Tissington, probate 1672/3) |
| 10. Means. 1631. (Will, Richard Buxton, PRO PROB 11/61) | 23. Town End Close. 1665. (166M/M1) |
| 11. Catgreave. 1631. (Will, Richard Buxton, PRO PROB 11/61) | 24. Spellow. 1667. (166M/M1) |
| 12. Lowcliffe. 1640. (166M/M1) | 25. Bent Close. 1667. (166M/M1) |
| 13. Washehills. 1640. (166M/M1) | 26. Bucksleather Close. 1667. (166M/M1) |
| | 27. Meadow lands. 1688. (Will, William Buckley, probate 1693) |

Brech is not named in the 1835 Survey which identifies the fields on the map, but it is safe to assume that it was near Lowcliffe, Bucksleather and Parr (Spar, Spur) Furlong (numbers 500-503, 10a 0r 03p), all in the area adjoining the south-western end of the village, and all apparently parts of one of the original open fields - Town Field. Other entries show the origin of some of the enclosed fields

Jo. Lane for a close pcelld of the demesne nowe enclosed p an	ix ^{li} ijs vii ^{id}
Rich Knowles & Tho Buxton for a nother close nowe enclosed	
pcelld of the demesne there	iii ^{li} xiijs iii ^{id}
Jo. Wright for a peece of a close callyd the pease lands pcelld of the	
demesne lands and for a nother close p an	xxvi ^s vii ^{id}

The Pease Lands are numbered 613-617 on the parish map (7a 3r 34p), and are to the south of the village, half a mile from Harrison's holding and a good illustration of how scattered one manor's territory could be. The references to demesne land suggest that Shrewsbury's negotiations with his tenants had resulted in parts of his own land being let out for rent as separate holdings. In the case of John Lane at least the ground may have supported sheep - his inventory listed seventy-four ewes and thirty-one lambs, presumably profitable enough to justify the high annual rent of £9 2s 8d. These enclosures amounted to ninety-four acres, or nineteen percent of the four hundred and ninety seven acres of the Shrewsbury Manor.

Enclosure of the demesne lands of the King's manor had by the meeting of the court in 1641 proceeded to the extent that the jury could identify only four oxgangs (probably about sixty acres). Each oxgang gave pasturage rights for four cattle and commons grazing right for thirty sheep. The juryman went on to claim that they "have heard of" demesne land in a number of closes. Clearly, by the time that Edward Pegge and John and George Buxton set about tracing where their newly-acquired demesne property lay, most of it had been enclosed and was held by tenant farmers. The sixteenth and seventeenth centuries saw the disappearance of the cultivated open-field land in both manors by enclosure of adjoining strips and the conversion of some of them of sheep- and cattle-farming. In 1667, in the course of a dispute over the non-payment of tithes, it was stated that "all ye fields of Brassington have been inclosed about 50 yeares, except part of a field wch was inclosed 30 yeares since or thereabouts". These enclosures were not carried out unopposed by the villagers who saw their rights of common pasture disappearing. The same document includes a statement that in or about 1653 William Savile had enclosed a "sheepwalk", or area of sheep pasture on the wastes, "not wthout a tryall at law wth ye townesmen who opposed him". Enclosure may in fact have been incomplete by 1670, as a manor court penalty in that year against leaving mine shafts open referred to "ye lands of ye said Liberty of Brassington either inclosed or uninclosed". This reference would include the wastes, where most of the mine shafts were, but there may have been fields in the old cultivated south still not enclosed. By 1670 however, there seems no doubt that Brassington was essentially an enclosed village.

The will of one of the more substantial seventeenth century farmers, the 'aged' yeoman Thomas Tissington, shows the variety of land holding. Tissington had been farming for most of the century when he died in 1668. He was very exact in his bequests. He had farmed several "parcells of inclosed ground", including Lowcliffe, Banwoods, Shortholmes, Grove Crofte and Bucksleather. Some was held freehold and for this he paid chief rent, some by copyhold. Tissington paid "levies & assessments for ye Church and King", or tithes and rates, which varied from "rateable to the fifth pte of an oxgang" on some land to two thirds on some other. In addition to his freehold and copyhold land Tissington had been leasing Wall Lands for a fixed term, and he left to his children the "reversion or tearmes of yeares yett to come". Each bequest of land included beast gates on the "over pastures and Sydes" and sheep gates on the "wastes or moore of Brassington with turbary". In 1640 he had been farming his ancestors' "three Oxgangs of land wanting a pcell" on the open fields, for which he paid 14s per annum to the Pegge Manor, the same rent as his father had paid to the King's manor in 1619. Tissington's will also describes his farmhouse and buildings and it is worth quoting one bequest. He left his house to his daughter Alice Travis, wife of Henry "from the east end as it is now builded to the west end of the stable adjoininge to the saide dwelling house & one swinehull att the west end of the said stable & also the yard of the back side of the said dwelling house from the north end of the Long peare tree westward to the north side of the round pear tree & soe westward to the north side of the pear tree in the wall att the west side of the said yard and so southward to the street as it is now taken in: and also that part of the Garden Lying att the back or north side of the said dwelling house from the growing

hedge on the west side of the Garden & soe down to the Long-peare tree aforesaid and also the midding places usual to the said Messuage house & Liberty & passage through the fould to the close Crofte & yard hereafter given And ... all the said close croft & yard on the north side of the said messuage house & Bakehouse except Liberty to repaire and mend the Cowhouse end, And all that one Close or parcell of inclosed ground called the Banwoods or parcell Pingle Lying at the Towne end". Banwoods is to the south-west of the village between the Bradbourne Road and Middle Lane, and was one of several enclosed fields which Tissington left to his daughter. He had lived to a great age, in his father's house, farming his father's land. The house and garden were copyhold of the Pegge manor as well as the "3 oxgangs wanting a pcell" of arable land. The number of Tissington's animals is known from an entry in the manor court roll in 1665 when he surrendered his property "to uses", that is to the uses of his will, a legal device to ensure the succession of his heirs to his copyhold. It included pasturing for eight cattle on Over and Sides Pastures and one hundred and twenty sheep on the moors and wastes.

Tissington's farmhouse was in the village and seems to have been a south-facing building on the north side of a street running east-west, which puts it at the west end of the village, near Banwoods and Bucksleather. He had a garden and a yard with a pear orchard. His farm buildings were attached to his house and included a stable and a pig-sty. Bequests to other daughters included parts of a barn which was at least sixteen yards long. Tissington had his own bakehouse and, from his inventory, a cheese press, wool scales and spinning wheels. Clearly a self-sufficient farmer. He had a "great bible & other books". His inventory goods, grossly under-valued at £28 18s 8d, included two feather beds, four chaff beds and plenty of bedding, two brass pans, four brass pots, five brass kettles, table napkins, fifteen cushions, three tables. No doubt it was all old, like its owner, but Tissington's farming had clearly left him well provided. All his livestock, save three milk cows and one pig had been passed to his daughters and their husbands before his death or at least before his goods were appraised. Tissington, one of the small group of comfortably prosperous farmers in the village, had freehold, leasehold and copyhold land. He pastured cattle and sheep on his closes, on the common fields, on the wastes and on the fallow of the open fields, where he tilled almost three oxgangs (or about fifty acres) of land of the old manor. Here his strips would be in separate parts of the fields. He would plough at the same time as his neighbours, sow the same crops as them and harvest them at the communal harvest time. He would pasture his cattle and sheep on the common pastures, under the care of the hayward, and would receive his share of the hay crop from the meadows. At the same time he had the personal use of about twenty-five acres of enclosed land.

ANIMALS

Almost everyone on the village who left a will owned animals. Even widow Dorothy Gratton, dying in 1604, left a cow, six sheep, one "ould mare" and "the third pte of one ox", in an inventory whose total valuation was £6 13s 0d. The animals accounted for £4 10s 6d of this. Most of the men were in fact described as yeomen or husbandmen, but the few who were officially in different trades kept animals too - Roger Jackson, miner, left three "kine" and twenty-two sheep in 1614, and Henry Spencer the blacksmith had three cows and a horse in 1633. Of the ninety three sixteenth and seventeenth century wills and inventories, eighty four listed animals. They include cattle, sheep, pigs, poultry, horses and oxen. Of these, poultry are only mentioned five times and may usually have been omitted by the appraisers. When they are mentioned they seem from their position in the inventories to have had the run of the house. This is explicit in Laurence Alsop's inventory in 1610, which lists his "housecocke".

The holdings of cattle were generally small. Only two men before 1650, Thomas Westerne and Anthony Lane, had more than twenty cattle and only one other has as many as twelve. Westerne was an inn-keeper. His twenty-nine indicate that very little milk or beef could have been produced for sale - there were only ten "kyne" or milk cows and five "twinter" heifers. The term twinter meant that the heifers had lived through two winters. They were presumably there to replace losses amongst the cows. Ten cows could have produced little surplus milk in a large household, which consisted of Westerne and his wife, their six adult children and servants, though butter and cheese, as well as milk, may have been sold as part of the Westernes' alehouse trade. Westerne's six twinter bullocks may have been there for his table. Two bulls and six calves completed the herd. Smaller households than Westerne's required fewer cattle - his son-in-law Henry Trevis Senior left four cows, four heifers and two calves. The numbers were similar in the second half of the seventeenth century, with most people leaving five or fewer. However, there were six with twenty or more, an increase in cattle farming which was described in the tithe document referred to above. It stated that some villagers had converted arable land to meadow which incurred

lower tithes and required less labour, the latter important because "the poorer sort who are numerous employ theyr labour in lead grounds". The six larger cattle farmers probably sold beef, either to the butchers in the village or at Wirksworth market.

Sheep formed the main element of the stock up to 1650. Westerne and Lane had large flocks of one hundred and twenty and one hundred and forty respectively, but theirs were not the largest. Edward Knowles had one hundred and sixty in 1628 and his son, George, a husbandman, had one hundred and forty thirteen years later. There were six others who had fifty or more, and while the wool trade had greatly diminished from its best days in the sixteenth century, when Hugh Cryclowe had a flock of two hundred and eighty five, Brassington had plenty of 'wastes and moores' suitable only for grazing sheep. The land transfers in the manor court rolls characteristically refer to a man's beast gates in Over and Sides pasture and to his sheep gates on the "wastes and moores of Brassington". In 1652 German Buxton left a flock of two hundred and sixty sheep. His inventory listed thirty three stones (five hundred and sixty two pounds) of wool, priced at 11s 6d per stone (£18 19s 6d). This wool was the product of shearing one hundred and ninety 'old' sheep, making it possible to calculate the annual yield of wool per sheep (under two and a half pounds) and the income (2s). The sheep themselves were appraised at £74 (7s 9d each), and if the valuations are correct there can have been little profit in sheep farming at that time. The flocks diminished as the seventeenth century proceeded and the export of wool to the Continent fell. The tithe document ascribed this to the farmers' letting their meadows for winter pasture for miners' cows, and said that of the village land "35 oxgangs have not one sheep belonging unto them".

Oxen were in use as draught animals until the second half of the seventeenth century, when they were finally ousted by horses. The fall in their use can be seen in the fact that of the fifteen who owned oxen between 1535 and 1650, thirteen died before 1630. The total number of oxen in the wills between 1535 and 1650 was forty three. Thirty two people in those years owned sixty three horses, and mention of a "hackney saddle" in William Westerne's inventory, also of "2 pacsadles" in William Adams' will, are reminders that horses were more versatile than oxen. Ownership of both horses and oxen was restricted to the more substantial farmers in the sixteenth century, and this was true of oxen in the seventeenth. During this century, however, horses are found in the inventories of men with the smaller land holdings and it seems likely that oxen were by then used only on large arable holdings, where their slowness was counter-balanced by their superiority in the heavy work of ploughing, while horses, cheaper to buy and requiring less pasture, were used for riding, light transport and harrowing. The survival of oxen into the seventeenth century may also have been due to their value for meat. Whatever the reasons, these massive, immensely powerful animals, yoked in teams of two, four or six, depending on the ground they were ploughing or the weight they were hauling, continued until the second half of the century the work they had done since the first settlers in the village relied on them to break the ground in their newly cleared fields.

With the exception of Dorothy Gratton's one-third of an ox in 1604, the oxen in the first half of the century were owned by men with sizeable holdings of arable land, including Thomas Westerne, who left thirteen oxgangs, or about two hundred acres, to his widow. Others were German Buxton, with five oxgangs listed in the King's manor rental of about 1620, Richard Gretton, Edward Knowles and George Wilcocke (three, two and four oxgangs respectively, in the same rental) and Richard Walton. Walton, whose inventory in 1629 included one ox, is not listed in any of the surviving manor rentals, but his goods were valued at over £100 and he may be assumed to have held arable land. These men farmed over four hundred acres of the arable land in the village in the early part of the seventeenth century. Slightly later Anthony Lane had four oxgangs (about sixty acres). Lane was the first since George Wilcocke in 1637 whose inventory contained oxen. He died in 1649 and left "two yoke of oxen". Lane may have been an old man unwilling to change his way of farming. His inventory does not include a horse, but does list two "heames", the metal or wooden attachments to a draught horse's collar through which traces were passed. Perhaps his son Andrew had removed the horses before the arrival of the appraisers, leaving his father's unwanted oxen. Lane was not quite the last to use oxen in Brassington. German Buxton had six in 1652, Edward Lane's "two drawn bullocks" (1666) and William Toplis's "one pair of bullocks" (1686) may have been draught animals, and Francis Moseley had six in 1674.

The numbers for both horses and oxen seem very low and there are in fact two inventories which include "husbandrie ware" and no ox or horse. Alice Adam in 1594 had a plough and a harrow "with one yoke", but no animal to yoke them to. In 1641 John Buxton, gentleman and lord of the manor, had "husbandry ware" appraised

BRASSINGTON INVENTORIES - NUMBERS OF ANIMALS

	SHEEP			CATTLE		
	1535-1600	1601-1650	1651-1700	1535-1600	1601-1650	1651-1700
1-5	0	1	2	5	19	14
6-10	2	4	3	4	12	4
11-20	3	3	1	1	1	5
21-30	1	6	1	0	2	4
31-40	0	3	0			
41-50	0	4	0			
51-100	2	5	4			
101-150	1	3	1			
151-200	0	1	0			
200+	1	0	1			

	HORSES			OXEN		
	1535-1600	1601-1650	1651-1700	1535-1600	1601-1650	1651-1700
1	3	13	5	0	4	0
2	1	5	5	2	3	0
3	2	4	2	0	0	0
4	1	2	0	3	1	0
5	0	1	1	0	0	0
6	0	0	0	1	0	2
7	0	0	0	0	1	0
8	0	0	1	0	0	0

	PIGS			POULTRY		
	1535-1600	1601-1650	1651-1700	1535-1600	1601-1650	1651-1700
1	1	10	5	0	0	0
2	1	4	6	0	2	0
3	1	0	0	0	0	0
4	0	0	0	1	1	0
5	0	1	0	0	3	0
6	0	0	0	1	0	0
7	0	1	0	0	0	0

Total inventories: 1535-1600 12
 1601-1650 42
 1651-1700 38

at £6 3s 4d and "one old p saddle one bridle reyn", but no horse or ox. In Buxton's case his horses may have been given to his heirs before his death, but in Alice's the clue to why she had harness and equipment while owning no horse or ox may lie in the inventories which show that the dead man or woman had been sharing the use of horses or oxen, like Dorothy Gratton. In her case one ox was ploughing and pulling for three neighbours. The inventories for Richard Gretton, dated the fourth of September 1620, and for German Buxton on the fifth of April the following year, have such similarities as far as animals and farm goods are concerned as to suggest they were farming together. Gretton's inventory has "the praise of one yoake of oxen his halfe iiil" and Buxton's "the halfe of one yoake of oxen iiil xs", Gretton's "the prise of the halfe of one wane with halfe of the yoake harrowes and other belonginge xxs" and Buxton's "the half of one waine plowes harrowes & other husbandrie implements xxs". There are similar divisions for cows and calves, two horses and a colt, and for "the prise of the half of foure acres of barlie oates & beanes xxvis viiid" (Gretton in September) and "the half of all the barlie oates & beanes in the barnes xs" (Buxton in April). Someone presumably took Gretton's place in the partnership, leaving Buxton in possession of his half, but we cannot know since neither man left a will and their inventories are the only evidence. There must have been collaboration between neighbours in other cases than Gretton's and Buxton's, and the villagers must also have used the draught animals owned by the largest farmers in the same way the small farmers in recent times have used the services of contractors for ploughing and harvest. Horses and oxen were expensive, and a man with only a few acres relied on his richer neighbours for their hire.

The prices of all the animals rose steadily through the sixteenth century until the 1590s, when there was a sudden marked jump in the appraisers' valuations. All valuations of horses before 1590 were less than £1, from Thomas Lawne's 13s 4d for a mare in 1563 to Hugh Cryclowe's "three mares and one fole iiil" in 1582. In the 1590s all were over £1 10s, with the exception of Humphrey Buxton's "one old mare", which was priced at 13s 4d in 1595. Oxen were priced higher than horses throughout the sixteenth century - the highest price for both was in John Lane's 1591 inventory, where "ii mares & a coolte" were put at £5 and four oxen at £13 2s 8d, average prices of about 35s and 66s 8d respectively. During the first half of the seventeenth century horses were valued consistently at 40s until the 1630s, when valuations of 50s or more became normal. There was one much higher valuation - George Wilcocke's "one mare" at 80s in 1637 - and John Knowles' "bay mare" was put at 60s in 1641. A similar valuation was put on Robert Gratton's "2 mares & there furniture" in 1647. These higher valuations may have had their cause in the increased, military, demand for horses by the armies of the King and Parliament in the Civil War. Oxen continued to be valued at their early-seventeenth century prices for about thirty years before showing a similar rise to the one for horses. The last three inventories listing oxen before 1650, those for Richard Walton (1629), George Wilcocke (1637) and Anthony Lane (1649), had them priced at 100s, 120s and 107s 6d respectively. Their prices had dropped by the time they made their last appearance in the Brassington inventories - German Buxton's six were priced at 66s 8d each in 1652, and Francis Moseley's at 90s in 1674. Horses remained at £2 to £4 for the rest of the century. The prices of other animals showed the same inflation in the sixteenth century. Cattle, which had been appraised at less than £1 in the first half of the sixteenth century, ranged around £2 to £2 10s after 1600, with occasional higher valuations. The inventories in the seventeenth century mention calves (around 25s) and "sucking calves" (13s 4d); heifers were priced similarly to cows or 'kyne'. Sheep prices rose from about 1s or 2s before 1550 to about 5s during the 1660s. There were higher valuations - George Wilcocke's were put at 5s 8d and Robert Gratton's at 6s in 1647. Anne Charlton's appraisers in 1636 were discriminating enough to distinguish between one flock of eighteen sheep at £3 10s 0d (3s 10d each) and six others at 6s 8d each. Valuations of the 'swyne' ranged from 3s 4d each for John Buxton's pair in 1574, through 4s for John Wright's "one little pigg" in 1604, to 20s for Henry Trevis's animal in 1650. Most were 10s or above in the first half of the seventeenth century and the variations were presumably based on the ages and sizes of the pigs. Their price was considerably higher after 1650, the average valuation then being over £1.

Pasture for cattle was on two long-established commons - not to be confused with the 'wastes and moores' - and each man's entitlement in numbers of cattle was related to his overall holding in the village. The Pegge manor court in 1641 reported "everie Oxgang (of Demesne land) hath foure beast gates in the pastures of the said Towne", meaning that every oxgang of land entitled its holder to pasture four cattle on the precious pasture. It was vital to keep each man to his limit and the court rolls have cases of tenants being fined for exceeding it. This system was known as the 'stint' - a fine of 2d was levied on Richard Gratton "quis fregit le Stinte vocat Le Sides in pastur", which fractured Latin means that Gratton had put more cattle on Sides Pasture than his three oxgangs of King's manor land entitled him to. The fine, like most manor charges, seems to have remained static for many

years - Roger Skymer, for instance was fined the same in 1578 for one cow "super ordin" (more than the regulation). The common pastures were always named in manorial transfers and wills as "Over and Sides Pastures" and the fields on the east of the main north-south road through the village, Town Street, are still known collectively as Sides Pastures. The present fields had been created before the nineteenth century enclosure and two of the names make their use clear - Great Cow Pasture and Little Cow pasture. Sheep were grazed on the pastures or on the wastes, their numbers related to overall holdings in the same way as cattle - "And for every Oxgang of Land upon the Comon three score sheep gates" - or in the new "closes". The value of wastes to the villagers is clear from the jury's anxiety in the King's manor customal to assure the lord that enclosing them would be of little value to him, and indeed the copyholders managed to resist pressures from land-owners to enclose the wastes until the nineteenth century. The value is also shown by the court's measures against squatting on the wastes.

CROPS

The usual crops of the English open field system were wheat and rye, sown in winter, and oats, barley, peas and beans, sown in the spring. In addition, villagers commonly grew hemp in enclosed plots. Wheat and rye were grown for bread, barley for brewing and oats for fodder and for oatmeal to make porridge. Enclosed meadows were used exclusively for their hay crops. Care had to be taken during the growing season that animals were kept out and that fences were in good repair - the manor court repeated an oft-told tale in 1578 when it laid down "that noe man teyther, lesowe, nor kepe any beastes, calves, cuple or shepe in the corne fields & meadowes". It seems unlikely that any villager would break such an obviously sensible rule, but the court was kept busy levying fines on trespassers. The October 1617 meeting fined Roger Harrison, Thomas Milward, Anthony Steeple, William Briddon and John Charlton 4d each for trampling corn and John Wright 6d for allowing his horse in the fields. An earlier offender, William Buxton in 1579, was described as having pastured his horse on "le halfe grasses", or on half-grown grass, thereby preventing it from reaching its full growth. The successful operation of an open-field system depended on full and willing co-operation and it seems that by the late-sixteenth century it was not always forthcoming.

The open fields were cultivated in rotation, one being left fallow each year. Manuring was from folding sheep and pasturing cattle on the weeds and grass of the fallow, and on the whole of the open fields once the crops had been harvested. The system could only work if everyone kept to the timetables - "no person doe putt into the fallows any lambes before Sainte Barnabys day next". The cattle and sheep were also pastured on the meadows, after the harvest, as well as on the commons and wastes. This is the picture given in textbooks and during the sixteenth and seventeenth centuries the Brassington inventories supply some evidence that the villagers followed the same pattern. Forty of the inventories mention crops. They are hay, corn and beans. The particular grain meant by the word 'corn' is only specified in a few cases - oats (5 inventories), barley (four) and wheat (two). Rye is not mentioned in any inventory, but there is one clue that it was in fact sometimes grown in the mention in Anne Lane's inventory of a quantity of "blencorne", the mixture of rye and wheat. There was probably rye-bread, blencorne bread and wheat bread baked in the village. Hemp is revealed in the references in the manor court land transfers of "hempyards". The villagers made their own ropes from it. Peas appear in the Court's list of penalties, and in the cases appearing before it of villagers fined for stealing them - John Wright, for instance, 2d in October 1586. As well as the field crops, there is plenty of evidence from the almost universal inclusion of gardens in wills and in transfers of houses and cottages that the villagers grew vegetables, including, presumably, onions grown from the seed listed in the inventory of the village shopkeeper, Frances Kempe, in 1617.

The forty inventory valuations include few which allow the value per acre of a standing crop or measure of stored grain, or of any consistent amount of hay, to be calculated. There are few valuations of growing crops. On September the fourth 1640 Richard Gretton's appraisers valued "halfe of foure acres" of "barlie oates and beanes" at 26s 8d. Edward Knowles' "corn now growing & hay & gras" was valued at £30 in July 1628. Knowles farmed two oxgangs of King's manor land. Even assuming that part of this was fallow in 1628 his crop was valued at something like £1 an acre. German Buxton's sown and presumably growing corn was put at £2 in April 1621. Buxton farmed five oxgangs but since he had hay in his barns at the time of his death, as well as the previous year's crops of barley, oats and beans, an estimation of the amount of his land devoted to cereal growing rests on the assumption that the frequent mention of "half ..." in his and Gretton's inventories does in fact indicate shared

farming. If the assumption is right, Buxton's £2 was for two acres, making the valuation consistent with Knowles'. Twenty years later, in July 1641, William Kempe's "one Acre of Oates" was appraised at £2.

This doubling may have been partly due to incompetent valuation, but the early 1620s were a period of agricultural depression, and prices were higher in mid-century. An estimate of the yield of these crops requires a September or October inventory, when the crops were harvested, a farm of known extent and stated quantities of each crop. The records for Brassington do not provide this set of figures, but it can be assumed that yields were low compared with those achieved after the improvements in farming methods of the eighteenth and nineteenth centuries. Yields for grain crops were probably about ten bushels per acre in the middle of the sixteenth century, rising to fifteen by the end of the seventeenth. There is only one valuation of a stated quantity of wheat in the inventories. This is the figure of 20s put on John Lane's three "strykes", or bushels, in 1597. In very broad terms, a standing acre of oats or wheat seems to have been valued at not more than £1, and the crop from it at £3-£4, until the middle of the seventeenth century. If William Kempe's appraisers were making a realistic valuation in 1641, the standing corn was by then worth twice as much. Presumably the crops had similarly appreciated in value.

EQUIPMENT

The villagers used only very simple equipment in their farming. Sowing, reaping and threshing were all done by hand in the sixteenth and seventeenth centuries, in ways which had remained more or less the same since the village was first settled. The tools - scythe or sickle for reaping and flail for threshing - are rarely to be found in inventories, presumably because they were regarded as insignificant parts of a man's property. Roger Jackson's detailed inventory included two sickles in 1614. In every other case they were hidden under a phrase such as "husbandrie ware". Jackson's inventory is also the only one to mention the single harvesting tool used - the pitchfork. The items which are listed separately in some of the inventories are wains, ploughs and harrows, plus the harness for the oxen (yokes), and horses (heames). The wains were by the second half of the sixteenth century beginning to be improved by the fixing of iron rims to their wheels. John Buxton's inventory included "one bouden weyne" in 1574. Forty years later the fact that Thomas Westerne's carts were iron-shod was felt worth mentioning - "2 waynes with iron bound wheeles with some old attire of another payre of wheeles". Later inventories do not have this description and it can be assumed that by the middle of the seventeenth century cart wheels were normally provided with a rim by the blacksmith of the village. John Buxton's inventory has another line giving a clue to an improvement in ploughs and harrows which was the first real improvement in farming in centuries. The entry reads "one plough ii iren teymes (chains) iii yokes one culter one sherre". Ploughs and harrows were simple wooden implements, made on the farm, or, at best, by a carpenter. The mention of a coulter and ploughshare implies that the plough had metal attachments. Adding metal tips to the sharp ends of ploughs and harrows made them much more efficient and durable. They were appraised during the seventeenth century at about 10s, a fairly low price which reflects the fact that they were short-lived wooden implements, even when improved by Henry Spencer's spikes and shares.

In some cases a correlation of will or inventory with a manor court rental gives an idea of the amount and type of equipment used on a farm of known size and it is usually apparent that little equipment was in fact used. According to his inventory Anthony Lane had been working the "messuage farm or tenement" and four oxgangs of land which he held in 1639 with one plough, one wain "and other husbandry ware". there was one yoke for his four oxen and two heames, implying that he had had horses, though none were appraised. Lane had one hundred and forty sheep and twenty four cattle and perhaps only a small amount of arable land - the four oxgangs were probably more than the four oxen could plough and harrow and perhaps some of the land was used to supplement the grazing land to which he was entitled on the common pastures - sixteen beast gates. An extreme case of a farmer apparently without the means of working his land is William Kempe's. He was farming an oxgang of land in 1639 and at his death two years later had a crop of oats on one acre. Kempe bequeathed neither equipment nor draught animals - he may have been one of the majority of villagers who relied on the larger farmers for the ploughs and harrows to work their land and harvest their crops. One of the men he may have called upon was George Wilcocke. Wilcocke's unspecified "husbandry ware of all sorts" was valued at £3 in 1636, a higher valuation than most. Prices given for equipment in the 1620s and 1630s suggest that Wilcocke's £3 would cover two ploughs, two wains and two harrows. This would match his "corne & hay in the barne" valued at £10. A comparison of this price with Thomas Knowles' inventory of 1649, the only one where a valuation is coupled with

a stated quantity of fodder, suggests that Wilcocke had twenty loads of corn and hay. This was at the end of March when most of the winter fodder could be expected to have been eaten. Wilcocke was farming four oxgangs of copyhold land in 1620. In 1636 he was keeping eight cattle, sixty sheep, two oxen and two pigs on it. Comparable to Wilcocke was Edward Knowles, whose farm included two oxgangs in the King's manor in 1620. When he died in July 1628 he had one hundred and sixty sheep but was otherwise similar to his neighbour in owning two ploughs and two harrows, valued at £3 6s 8d, and "corne now growinge & hay & gras" at £30 0s 0d.

In contrast to these men Richard Gretton, with three oxgangs, seems to have been conducting a much less productive operation - he had "husbandry geere" valued at 13s 4d, two cattle, four sheep, one horse, two oxen, one pig and hay and corn valued at £6 6s 8d when he died in November 1624. He was presumably farming on less productive ground than Wilcocke and Knowles, assuming consistent appraisals. Thomas Westerne, the largest landholder, with thirteen oxgangs in Brassington, and freehold and copyhold land in Carsington, had over three times as much corn and hay in his barn as George Wilcocke, again assuming the valuations to be reasonably consistent, and fifty per cent more equipment, though apart from the two wains no quantities are given in his inventory - "yoaks, teames, harrowes, plowes and all other husbandrie ware".

The highest King's manor holding in 1620 was German Buxton's five oxgangs. At his death in 1621 he had a half-share in "one wain, ploughs harrows & other husbandry ware", valued at 20s. There were probably, at that valuation, two ploughs and two harrows, making his picture consistent with the other larger farmers. Richard Walton, a substantial holder of Shrewsbury manor land, judging by his rent, had two ploughs and two "twinter" bullocks, which may have been his draught animals. He had hay and corn in his barn. The inventories imply that any holding of two oxgangs (thirty acres) or more of arable land required a minimum of two ploughs and harrows, and this is probably how it was. Where an inventory of one of the village's leading landowners omits mention of plough or harrow, or of "husbandry ware", the assumption must be that his farming was with animals rather than crops. Examples from the 1620s are John Lane and Ralph Charlton, who had land, cattle and sheep but no equipment. Inventories from later in the century were usually as non-committal about the farming equipment as in the earlier years, and the valuations continued to be low. There were two which included items not mentioned elsewhere. Richard Goodwyn's appraisers noted "tumbrells" and a later German Buxton's "slesides". A tumbrell was a two-wheeled cart often used for carting manure, and sometimes tools such as forks, rakes, shovels or spades. "Slesides" probably refers to sledges, or sleds. The word occurs among a list in Buxton's 1686 inventory for which the valuation has been lost. The list also has "i payre of slead bridles", making the identification of "slesides" with sledges almost certain. Sledges were in fact common on Derbyshire farms. They were used for carrying hay, corn, stone, timber or any other solid load. Buxton had considerable quantities of hay, oats and barley in his barns when in he died in January 1685. There were "about 80 strikes of oates winoed & in the Chaffe", "about six score & tenn thraves of oates in the sheaves" and "about 60 thraves of Barley in the sheaves" [a strike was a bushel]. There were also twelve "wayne loads" of hay. This evidence of extensive arable farming is supported by eight ploughs in Buxton's inventory. there were also twenty "plough-heds" (shares), spokes for his wain and "2 wayne blades" (shafts).

SUMMARY

While there were sizeable freeholdings, one hundred acres for instance in the Shrewsbury Manor at least as early as 1581, the most extensive type of tenure throughout the period was copyhold. Demesne land was "converted to their own use" (Ince) by local, unauthorised action in the King's manor and by negotiation between the lord and his tenants in the Shrewsbury manor. Landless villagers rented cottages and land from the copyholders and freeholders. By the end of the seventeenth century most of the cultivated land to the south and west of Brassington had been enclosed, though the villagers successfully resisted pressure to enclose the rough, hilly ground to the north and east. This was because of its value for grazing to both landowners and tenants. Its value as the area where most of the veins of lead were found, during a profitable time for mining, was probably a factor, since the lead mining industry's customs encouraged individual prospecting. Landowners, as well as the miners, had an interest in unfettered prospecting, since they invested in the mines. There continued to be a mix of arable and animal farming, with sheep continuing to be important, though less so in the seventeenth than the sixteenth century. The use of oxen diminished through the seventeenth century and was over before 1700.

The manor courts met regularly throughout the period, their juries, by the second half of the seventeenth century, including a few miners and craftsmen as well as yeomen and husbandmen. The courts provided the machinery for the transfer of copyhold land and made byelaws for the village which included rules for farming and restrictions on the activities of the miners.

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ACM S117 Rentals 1587-1592

ACM S118 Rentals 1587-1593

WD 924 (1596) Refers to the Earl of Shrewsbury's dealing with Brassington tenants "12 or 13 years ago".

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ANDREW HANDYSIDE AND HIS WORKFORCE

(by Sandra Henson)

PREAMBLE

Andrew Handyside, a Scot, took over the Britannia Foundry in Derby in 1848, and under his direction, the company grew and prospered, gaining a world-wide reputation for the quality of its castings. This study investigates the skills of both the labour force and management which led to the firm's prominent position not only as a supplier of quality castings, but also as "trouble shooters" brought in to replace the shoddy workmanship of other firms throughout the country. It will also show the dynastic nature of the firm and its paternalism.

In conclusion, an attempt will be made to explain why the firm, which in the early 20th century was second only in importance to the Midland Railway in Derby, should so suddenly collapse.

ANDREW HANDYSIDE

Very little is known of the man who was to make "Derby Castings", a term synonymous with quality throughout the world. He was born in Edinburgh,¹ - contrary to the obituary in the Derby Red Book 1888 which mistakenly gives his birthplace as Glasgow - on 25 July 1805, to Hugh Handyside, a merchant, and Margaret Baird.² It would appear that he inherited his engineering ability from his mother for his uncle Charles Baird was an engineer. Cassier's Magazine³ tells us that Andrew Handyside, described as a mechanical engineer, had spent most of his life in Russia prior to coming to Derby. In Russia he was manager for his uncle, Charles Baird, who had a large engineering works at St Petersburg. Andrew's brother, William, is described in the Dictionary of National Biography (1890),⁴ as being born in Edinburgh, and a producer of "important public works of various kinds" in St Petersburg, including suspension bridges and "steam vessels of all sizes", products which Andrew Handyside was to make at Derby. William returned to Edinburgh in the mid forties and died soon afterwards in 1850, two years after Andrew had taken over the Britannia Foundry at Derby.

Canon S. Cooper Scott, in his volume of reminiscences,⁵ recalled visiting the Handyside household when he was a curate in charge of St James's Church, Derby in the 1850s, where they used a samovar and ate caviar and other Russian delicacies. They often sat on a Russian swing seat in the garden at "The Cedars", their house on Ashbourne Road. Canon Scott described Andrew Handyside as "a very fine looking man with white hair and a nervous, quiet, energetic manner". Mrs Handyside, he observed, was younger than her husband. They had no children and "were most devotedly attached to each other".

Handyside was seventeen years older than his wife, Anastasia, who, according to the census of 1871, was born in Balanka, Poland. (Incidentally, in the 1881 census Handyside's wife was recorded as being born in the Ukraine, Russia.) Her mother, also Anastasia, was born in St Petersburg (now Leningrad) but both became British subjects. The Russian connections probably account for the extensive contracts the company had in the Russian market.

The Handysides appear to have been an hospitable couple as each census from 1851 to 1881 indicates that they were entertaining some members of their family at that time. In 1851 they had two nephews staying with them, Alexander Buchanan aged 21, who was later to become managing director of Handysides, and "Nicklas Andeside" aged 19, an apprentice,⁶ both being from Scotland. In 1861 a married niece, Louise Haverfield and her baby daughter, Mary, were living at "The Cedars". Louise had been born in Russia but her baby was born in Derbyshire. In 1871, Anastasia, Handyside's mother-in-law, was in residence and another "grand-niece" Eleanor Haverfield, aged 10, was being cared for in 1881.

It is possible that Andrew Handyside had been trained by his uncle, Charles Baird, just as he in turn trained his nephew, Alexander. Alexander Buchanan, who was the son of Rev. Robert Buchanan of Glasgow, was born at Gargunnock in Stirlingshire on 10 December 1829.⁷ He joined his uncle in Derby after studying engineering at

Glasgow University and moved from "The Cedars" to live at 8 Wilson Street. Buchanan became managing director under the chairmanship of his uncle who in his later years continued to attend the foundry daily until his death in 1887 aged 82. Buchanan was to be in charge until the demise of the company, two years before he died, in 1912. The dynastic nature of the firm was also reflected in the workforce.

Andrew Handyside represented Bridge Ward, where many of his workforce lived, on the Borough Council for one term. He served at an interesting time (1855-58) when it was trying to improve sanitary conditions following a critical report by Inspector Cresy of the General Board of Health.⁸ The *Derby Mercury* was scathing about the Council's efforts and no doubt expressed the views of the ratepayers when deriding the Liberal councillors for being altogether "too liberal" with public money in building roads where none were needed and opposed the proposal to build public baths and washhouses.⁹

Handyside was on the Sewerage and Construction Committee and his expertise and experience must have been valuable. Many iron foundry workers lived in the insanitary, overcrowded courts of Derby in the vicinity of Bridge Gate and Bridge Street near Handyside's home and he obviously stood with those who wished to do something about it.

He was also a church warden at St John's Church in Bridge Street until his death. His predecessors at Britannia Foundry, Weatherhead & Glover, supplied the cast iron columns, the iron windows with cast iron tracery and the fashionable iron railings which surrounded the church which was built in 1827 as a result of the 1818 Church Building Act. This authorised the expansion of one million pounds towards the construction of churches to meet the demands of the increased urban population. Francis Goodwin, who also designed the gaol in Vernon Street, was the architect.¹⁰

Like many 19th century industrialists, Handyside was ready to take advantage of opportunities for investment and involvement in the developing banking industry. He became a director of the successful Derby and Derbyshire Bank.^{11,12}

He was also associated with the Derby Waterworks which stood to gain considerably should the new public wash-house and bath house be built.¹³ The Waterworks Company was formed in 1848.

Andrew Handyside was often "in the chair" at the Temperance Hall, where the Derby Working Men's Association provided "literary and musical entertainment"¹⁵ with, on occasions, the Britannia Foundry band and members of staff, including Ewing Matheson and Alexander Buchanan, providing the entertainment.¹⁶

THE BRITANNIA FOUNDRY

Why did Andrew Handyside settle in Derby and take over the Britannia Foundry?

Derbyshire, being landlocked, had not been able in the pre-canal era to exploit its potential pig iron production fully, as roads were impassable in the winter. Coal and iron products had sometimes to be stockpiled until they could be transported in the spring. However the development of the canal system changed all this. The Britannia Foundry was sited on the banks of the River Derwent which was linked with the Derby Canal and thereby with the Midlands canal system. Ewing Matheson, an engineer who worked for Handyside stated that "there is direct communication with the leading canals in the country" by means of the Derwent.¹⁷ The canal was so important that it was still being used by the company in 1873, even though the foundry had its own railway sidings by then. Matheson saw advantage in that "manufactory can be conveyed to a distant town, or alongside a ship in dock or river without transshipment on the way". Both raw materials and finished goods could be transported by narrow boat. Light castings which suffered "occasional damage due to concussion of trucks while shunting" could be transported by boat free from breakages. Canals were less rapid but transport time had "accelerated of late years by the use of steam tugs instead of horses". Matheson continues "the cost of transport by canal is generally the same or rather less than by railway between the same places". As Hadfield states "Railway pressure in 1840 made canal companies make drastic reductions in tolls from 1s 5d to 10d".¹⁸

Andrew Handyside always aimed for quality, even when this made his tenders higher, so he must have been attracted to the Britannia Foundry because it had already earned a reputation for producing quality castings. It had been built by Weatherhead and Glover in 1818. Thomas Wheeldon managed the foundry, under Glover, whom the then Earl of Shrewsbury "pronounced to be the most eminent ironfounder of his day in Europe, and the castings he produced at the Britannia Foundry, now to be seen at Alton Towers are universally admired for their taste and excellence".¹⁹ The foundry produced ornamental urns, temples and cast iron window frames for churches and chapels as far afield as Portsea, Bordesley, near Birmingham, Walsall, West Bromwich and Kidderminster.²⁰

The firm was taken over by Marshall Baker and Wright in 1835 with Wright becoming sole owner in 1843. The quality of castings remained good, but Wright took advantage of the "Railway mania" and began to produce goods for the developing railway system, particularly as Derby became a centre after 1840. When Handyside took over the firm in 1848 from Wright, it was producing railway turntables, carriage wheels, locomotive tenders, castings for steam engines, retorts for gas-works, water and steam pipes, slide lathes, baths, pans, stoves, stove grates and spouts. The firm also made Gothic and Grecian windows for churches and cottages, ornamental vases, gates, palisadings and "every other sort of castings to model or diminish".²¹ Large castings were being produced at the foundry, such as the 60ft cast iron footbridge with semi-elliptical arch across the Oxford Canal clearly marked "1837 - Britannia Foundry, Derby".²³

Handyside must have seen the great potential for the company when he took over. He extended the range of windows alone to 1500 patterns. Although the backbone of the railway system had been laid down by 1848, there was still much work to be done: for example the 400 bridges for the London Brighton and South Coast Railway, which had been formed in 1846.²³ The acres of railway terraces being built for railway workers formed a vast market for the fashionable iron railings, as did the more expensive houses where cast iron was demanded for balconies, ornamental gates, fountains, balustrading, vases and "lamp pillars".

Finally, Andrew Handyside, with his engineering experience, must have seen that he could use the Britannia Foundry to develop large engineering structures. His continental knowledge and the ease of transportation afforded by the canal system would lead to a successful export business. His overseas products included the Mazagon Pier, Bombay, 336ft long and 30ft wide, which had iron sheds for storing goods and 30ft long cranes attached to overhanging eaves. 200 tons of cast iron and 250 tons of wrought iron were used for the structure which cost £7,300 in 1868.²⁴

THE WORKPLACE

The original foundry that Handyside took over in 1848 on Duke Street had an iron arch over the gate inscribed "Britannia Foundry". There were two cupolas, lit each day, and the men had to "knock the bottom out" each night.²⁵ This was an unpleasant job because of the smoke and dust. There was a fitting shop where castings were finished off and a pattern-makers' shop where wooden patterns were made for the shapes to be cast in sand.

By 1868 a brass foundry had been added where castings of 30cwt could be made, smaller castings being made in crucibles. By 1877 Handysides had a malleable cast iron foundry. Francis Ley, later knighted, who joined the firm as a young man of 18 and rose to the position of director by the age of 26, was aware of the potential market for this product. It seems that the rest of the Board did not share his vision and he left after three more years to found a company which prospered considerably, based on "black heart" (malleable) castings. Ley secured the sole British right of manufacture of the American product "Ewart's drive chain belts".

The "malleable" Ley produced was cast iron that had been subjected to heat treatment to make it less brittle. It is used for many types of casting which need to be tough but able to be easily machined, for example engine blocks.²⁶

Alexander Buchanan became Managing Director in 1873 when the firm became a limited company with Handyside acting as Chairman. Ewing Matheson became a director of the company at this time, but also "established himself in London in that year (1873) in partnership with R.C. Grant, to carry on an engineering business almost entirely foreign and colonial".²⁷

The foundry was extended to both sides of Duke Street by the time the Great Northern Railway completed its section through Derby and sidings were developed on each side to connect the foundry with the railway system by "a spur running Northwards (from the mainline) into a headshunt, a link then diving back beneath the main route and entering the foundry".²⁸ A larger site across the river, known as Fox Street, had been developed to utilize the Midland Railway system. It was here that the large products were made: the bridges and girders.

By 1891 the labour force in these three works had increased to 1200 hands. Twelve steam engines were utilised to drive the machinery. Large pits had been dug in the foundry in which the cylinders or screw piles for bridge piers were made together with large engineering castings and "cylinders of all kinds, and for these carefully selected and refined metal is used".²⁹ For example, the Glebe Island (Australia) swing bridge was erected in the yard prior to shipment.³⁰

The works were further extended into Clarke Street adjacent to the Fox Street works in 1904. This was a remarkably well designed extension, which allowed a virtual "production line" system to take place, and is described in "*The Engineer*"³¹ The whole site was dominated by a moving crane. As with Fox Street, the works were connected to the Midland Railway system. The Duke Street works covered 7.28 acres, the Fox Street works 6.86 acres and Clarke Street a further 2.54 acres. A fire which devastated the fitting shop at Duke Street on 10 November 1900 caused damage estimated at £4,000 with the loss of much valuable machinery. It is possible that this incident and the insurance money may have inspired the Clarke Street extension.

In 1907 there was a motor cylinder foundry, despatching 400 to 500 cylinders a week for the emerging motor car industry. Cylinders were supplied to Jowett Motors of Bradford and big fly wheels for Guy Motor Buses of Wolverhampton. The firm also supplied Maudsley Cars with castings. Sleeping cars for the Egyptian railway were on the production line in 1907. Ornamental fountains were still being supplied ranging from £5 to £2,000 in value.

The Clarke Street extension to the works provided for the production of large structures, particularly bridges. Production by 1904 "largely consisted of bridge and roof making".³² The two buildings of the new works were constructed of steel girders and wood and steel combination principals "which is a method of roofing largely made by Messrs Handysides".³³

One of their last commissions before the untimely collapse of the company was the erection of the first Rolls Royce factory workshop. In 1907 Royce himself wrote to Derby solicitor C.R.B. Eddowes "Mr Royce and Mr Johnson are of the opinion that if the work of erecting the buildings is entrusted to such a firm as Messrs Handyside of Derby it would be quite unnecessary to employ an architect to prepare drawings or to supervise the erection of the buildings as Messrs Handyside are engaged and have for some years been engaged in erecting buildings of a similar nature and are a thoroughly competent and trustworthy firm".³⁴

A tribute from one eminent firm to another! Yet how ironic that by 1910 the company should have collapsed. The OS map of 1914 tells all, written over the Fox Street and Clarke Street works: "BRIDGES AND GIRDERS - DISUSED".

THE WORKFORCE

Much of the work of Handyside was designed by first-rate architects and engineers: Rendell, Ordish, Sir Charles Fox of Melbourne, Tarbotton of Nottingham, to name a few. They obviously contributed greatly to the quality of the product. However, they undoubtedly selected the Britannia Foundry to produce their works because of the recognised skill in casting of the workforce.

"This firm received noted distinction at the Universal Exhibition at London 1851, and at the International Exhibition in 1862 when medals were awarded for their iron castings and for their machinery. A gold medal for ornamental fountains and vases was awarded to them at Birmingham in 1872 and a similar honour secured at the Cordova Exhibition of the Argentine Republic in 1871 ... Bridges have also been built for the Governments of Japan, S. America, Australia, Austria, and the Presidencies of India."³⁵

The skill of the moulders and pattern makers was astounding. Friargate Bridge, Derby, Handyside's answer to the problem of passing a couple of railway lines over one of the most prestigious streets of the town, is a fine example of the intricacy and detail of casting work which contrasts markedly with the functional bridge over the Derwent. In 1868, Nottingham Corporation chose Handyside to provide the ironwork for their "new" bridge over the River Trent designed by Ogle Tarbotton. Wrought iron was employed for the structural elements of the bridge but fine casting was done to provide the ornamentation. The "enrichments" vary in each compartment both in size and detail and were all modelled and prepared by Messrs Farmer and Brindley of London, sculptors, but cast at Derby.³⁶

Modern ironfounders say they cannot replace the large cast iron window frames in one casting like the originals.³⁹ Mr H. Cordery, who worked for Handyside's in 1926, tells of one ingredient which, together with the fine moulding sand, may have contributed to the quality of the castings. The first job the young lads had to do every morning was to fetch manure in barrows which they brought from the railway yard on Mansfield Road over St Mary's Bridge ready to be milled up with the sand!

Ewing Matheson, who became "well known in engineering circles on both sides of the Atlantic"³⁸ obtained his early engineering experience in a seven year apprenticeship with Andrew Handyside in the late 1850s.³⁹ He left Handysides after his apprenticeship to seek experience elsewhere, returning to manage Handyside's London office at the early age of 26. He later became a director in the firm and managed their London and Foreign business. "He dealt for many years with incidents and difficulties connected with the erection of large structures in England and elsewhere ... the arrangement and modifications of design to meet these exigencies was the work that interested him most."⁴⁰

The large covered market in Madrid, with 2,000 tons of ironwork and the substitution of ironwork for wooden bridges on the Nicolai Railway between St Petersburg and Moscow and a bridge over the River Pruth at Czernowitz "took Mr Matheson to Spain, Russia and Austria. A journey was also required for the erection at Alexandria of powerful cotton pressing machinery".⁴¹ Matheson was obviously a great asset to the firm. His extensive knowledge of the iron industry can be judged by a paper he gave to the Society of Engineers in October 1867 and from his own writing.⁴² The first edition of his book *Works in Iron* published in 1873 described sixty examples of recent major iron structures carried out by Handysides, many of which were exported.⁴³

The census enumerator's returns of 1851-81 show a remarkable range of occupations connected with the iron foundries in the town. Handyside employed 270 workers in 1858, Phoenix foundry 170, Derwent 70, Brook Street 120-130, Swingler 200 and Eastwood and Sons 120-150.⁴⁴ Handyside increased their workforce to 350 by 1861 and 360 by 1871. Haslam's foundry, across the river from Handyside's Britannia Foundry, was employing 150 men in 1881. Handysides had a workforce of 1200 men by 1907 and was the second largest employer in the town.

Many of the workers migrated into the town. Out of the 225 iron workers in 1871 over a half were born outside Derby. Most migrant workers had come into the town from Derbyshire, some a considerable distance but others from places nearby such as Breadsall and Allestree. Twenty came from Lancashire, mainly Manchester, and ten from Yorkshire. Some workers came from as far afield as Ireland, Scotland, Middlesex and Kent. Some workers were born abroad, in Paris and Russia for example. It was curious that some who gave their birthplace as Manchester in 1871 put Derby in the 1881 census!

The workforce was mobile within the town. Out of over 200 studied in 1871, only two could be found at the same address by 1881. Some people were forced to move to make way for the Great Northern Railway which was being built in 1876. 265 dwellings were lost where there was already a shortage of accommodation for the labouring classes.⁴⁵ 23 families were evicted in Duke Street and in Arthur Street, Henry Street and Brook Street a further 27 families were affected.⁴⁶ But the railway "stimulated enlargement"⁴⁷ of the company.

The dynastic nature of the management was reflected in the workforce. The firm did not appear to advertise for labour as it was usual for people to be taken on only when they had family already working there. Handysides was a desirable place to work as can be seen in an article in the *Derbyshire Advertiser*: "In his (Buchanan's) early years engineering was the superior industry in the town and youths who were merely "bobbin runners" at the silk mills envied those few whose fathers were employed at the Britannia Foundry who were allowed the privilege of apprenticing their sons".⁴⁸

A good training scheme was already established before Handyside took over the firm, as can be seen from the rest of the article: "John Ley a foreman at this foundry had established a night school where apprentices were taught machine drawing and here in 1842 ... a "bobbin runner" came one evening out of curiosity. He managed with a pencil to make a presentable copy of one of the standard drawings ... John Ley who had no son to apprentice insisted on placing the name of this "town arab" on the books. The boy rose to considerable eminence in the firm ... John Ley's right to apprentice a stranger was strongly resented by the workmen".

In the 1871 census there are many examples of whole families of ironworkers. John Hesketh an iron moulder of 17 Garden Street had two sons, John and Harry, both moulders. In Arthur Street Joseph Willans, an iron moulder foreman, had two sons, Thomas, 16, a pattern maker, and George, 14, an iron turner. Sam Savage, a Yorkshireman, joined the firm when he married the daughter of a Handyside worker in 1896: he lived in Waterloo Street and had four sons. His wife Anne remarked: "he was a strict Victorian father who made his sons follow him" (ie to work at Handysides).⁴⁹ "My mother as a girl of 8, had to run from school in Devonshire St, up to Waterloo St, off Babington Lane, and carry the dinners in a basket to Handyside's in Duke St., and woe betide her if she dawdled in the way."

One family lived appropriately at the "Moulders' Arms": William Robinson, an iron fitter, and his son John, 20, a moulder. There were other hostelrys to provide for the thirsty iron workers including the "Furnace Inn" adjacent to the works in Duke Street and the Britannia Inn in River Street. There was also the Boars Head in King Street and the Cross Keys in Brook Street. On Saturday, payday, demand was so great that the public houses used to have their bars covered with ale-filled containers so as not to keep the customers waiting.⁵⁰

The building of bridges was rarely entrusted to the workmen who made them, but to men who, though perhaps unfitted for the work of the foundry, had acquired a particular skill. Such a man needed to be familiar with many methods of unloading ironwork and moving it on rollers and wedges and he must be able to judge the strength of ropes, chains and timber in order to direct the workmen with confidence. Matheson was conscious of the hazards involved "where a bridge is being erected over a river, lifebuoys and ropes should be kept ready to protect life. A boat provided with oars and easy to unmoor should be attached to the staging in an accessible position." .. and "where riveting hearths or forges are placed on timber scaffolds, water should always be kept at hand for extinguishing fire".⁵¹

When the Czernowitz Bridge was erected in 1870 on staging over the River Pruth in East Austria, a sudden flood swept away the scaffolding. Debris from upstream including wooden houses and a sawmill were swept against the bridge which was held in position only with a few cold rivets on the "pin system". The key to the success of Handyside's work was that by careful and accurate fitting at the workshop the putting together of the parts at the site was rendered easy and there was no chance of bad workmanship on site as "the bridge must be united properly or not at all".⁵²

There is little information about Andrew Handyside's relationship with his workforce except one incident in 1852 when the workers felt it was their "moral duty" to witness an execution in Vernon Street. Handyside tried to stop them leaving in work time for he believed in value for money with labour as well as materials. He forbade them to leave but the crowd surged forward and went to the execution. Mr Handyside kept to his office in the afternoon while some of the workers re-enacted the hanging by hanging the apprentices with a noose and pulley block. One, on being lowered to the ground "showed no signs of animation" and had to be roughly rolled around the floor⁵³ - a tale no doubt embroidered with time.

SKILLS OF MANAGEMENT

Although the construction boom was over in Britain by the 1850s the demand for foreign railways was expanding. Exports of the gross product of the iron foundry rose to 39% in 1850.⁵⁴ Handyside exploited this. In the case of the Nicolai Railway built between St Petersburg and Moscow the firm supplied 17 railway bridges. Other bridges were built as far afield as Japan and South America. The Indian Railway was being developed in the 1860s mainly to facilitate the rapid transport of troops, and once again the company was a supplier.

The organisational skills were tremendous, particularly in the case of overseas orders. The bridge designers needed to know not only the site conditions but also what facilities existed for transport. "It is often the case that bridges must be designed with special reference to the incidents of transport, and in riveted girders it is especially necessary that the joints shall be arranged to as to afford facilities for division."⁵⁵

When a bridge was intended for the railway itself, large girders could be carried using several trucks, especially where it was desirable to use the minimum amount of labour on the site. Bridges were easily transported to Europe where the railways were nearly all the same gauge, European Russia being an exception. Pieces 60ft long could be carried this way, unless there were curves or other hazards which had to be accounted for. Where roads had to be used "carts can be procured or made sufficiently strong for the purpose, but where bridges and other ironwork are required for new or mountainous districts, special arrangements must be designed so as to allow division into small parts".⁵⁶

Here again the skill of the Handyside organisation is revealed, for when the ironwork was conveyed to the site labour was saved by conveying the parts in the order that they were required for assembly "so that they can be unloaded and put into place at once".⁵⁷ This would avoid the cost of storage, unloading and reloading.

The necessity for skilful casting was crucial to the success of the company. Matheson wrote that "conveyance by sea was very cheap compared with land carriage ... it costs less to send ironwork from London to Australia by sea, than from Glasgow to London by railway"⁵⁸ and he continues "The shipment from England of bridges, locos and other railway material are on such a large scale ... that ships and steamers are now more commonly than before constructed to carry pieces of considerable weight and size." The cost of transport by steamer was always dearer than by sailing vessel. The low rates of freight for ironwork were because the general cargo of a ship was so light that iron was needed as ballast. "The rate of freight for ironwork from London to Calcutta, or to Melbourne, is for the above reasons sometimes as low as 10s per ton."

Careful organisation was required to offset any possible losses at sea, so it was arranged that complete spans "or other well defined portions shall go complete in one vessel".⁵⁹ Should the vessel be lost at sea, it would be known exactly what replacements were required "and as little inconvenience as possible will be caused in the erection of the remainder".⁶⁰ The time of year that the shipment was dispatched affected the cost considerably. Marine insurance premiums were very low in the summer months but rose rapidly "and largely" towards the autumn and winter, "the increase in some cases being as great as from 10s% in Summer to five or six pounds % in the winter".

Another problem for exporters, as now, was the "great inconvenience often occasioned from want of a common standard".⁶¹ Matheson strongly recommended the superiority of the decimal system of weights and measures.⁶² In 1872 in the UK, India, the Colonies and USA the foot was the unit of length. Austria had a foot measurement but it measured 1.037 of an English foot! Similarly in Norway, Sweden and Denmark, English measures were used but did not agree exactly with the English measure. Meanwhile in France, Belgium, Holland, Switzerland, Italy, Spain, Portugal and Germany, the decimal system based on the metre had been legally adopted by 1872. In Russia the English foot had been adopted by Peter the Great, but French measures were also used!

The company was always aware of cost, and Matheson wrote with regret of the bridge at Osaka, in Japan, which was designed in England with inadequate information about the site, which resulted in the bridge being made "rather heavier, and stronger than was necessary". Concern to give service and value to the customer was paramount; although the company would have made some extra profit by supplying more iron than necessary, this was a cause for regret, not pride.

Each bridge was assembled in Derby and subjected to rigorous testing before shipment. *The Derby Mercury*, in 1925, reported that "many residents will remember the Glebe Island (Australia) swing bridge, gracefully and serenely revolving" in Handyside's Fox Street yard, prior to shipment (1870).⁶³

The normal procedure for testing a bridge before despatch was to run a train of several locos over it, but in addition rigorous tests were carried out on the iron used for the products: "continued and repeated experiments were made by Andrew Handyside at the works with meltings that take place twice a day".⁶⁴

There were six varieties of pig iron available to Handyside and he saw it as the business of the ironfounder to know what was the best mixture of iron for any special purpose. He avoided the inferior kind of iron produced by the Middlesbrough iron works, even when the best of Derbyshire and Yorkshire was sold at higher rates. Skill

again was involved in "the judicious mixture of local ore with other better sorts (when) a good standard may be reached".⁶⁵ The expertise of the firm in selecting iron was shown in tests at Woolwich, ordered by the House of Commons to ascertain the strength of different irons for use in cast-iron ordnance. Out of 50 kinds tested in "tension, compression, and transverse strain" the irons from the iron furnaces of Derbyshire and from the Scottish furnaces, which Handyside patronised, "stood highest". Handysides devised special tests for ironwork subject to "heavy and sudden shocks ... during the passage of trains",⁶⁶ but for ordinary purposes the beam test was accepted by engineers. For their cast iron, which was subject to "transverse strain" they submitted the test bar 2 inches deep, 2 inches wide and 3 feet between bearings to a breaking weight of between 25cwt to 30cwt. "This precludes (the use of) the large quantity of cheap iron."⁶⁷

The "Railway mania" had resulted in some shoddy ironwork being produced and Government concern resulted in the Woolwich tests. Much of the firm's prosperity was built up by substituting iron bridges for weaker wooden ones, and replacing inferior earlier work, as for example on the North Midland Railway at Belper. One dramatic example of poor ironwork involved the collapse of the station roof at Charing Cross where Handysides were called in to remove the entire "great arched roof at a few hours notice".⁶⁸ They were used as "trouble shooters" at Finsbury Park where the successful replacement of a bridge was described both by the *Derbyshire Advertiser*⁶⁹ and the national press. The expertise of the firm for sending bridges abroad and ease of erection on the site was utilised in this instance where the bridge was quickly and efficiently built without disturbing the flow of the railway and road traffic below.

It appeared that no job was too difficult for Handysides. Bridges that swung aside to allow ships to pass up rivers and canals were a feature of the firm's production. The Manchester Ship Canal Company commissioned Handysides just over one hundred years ago to produce the Barton Aqueduct where a section of the Bridgewater Canal crossed the Ship Canal. The Aqueduct could be swung aside to allow ocean-going boats to pass through. Handysides also made high level bridges at Latchford and Warrington as well as Sutton Bridge and swing bridges at Hull.

THE DEMISE OF HANDYSIDE & CO

The final meeting of the company took place on 28 September 1910. A new company of the same name was registered in 1915 which went into voluntary liquidation in 1923. Again a new company with the Handyside name was registered in 1924, which was dissolved in 1931, its final meeting return being registered in February 1933.⁷⁰

Andrew Handyside & Co Malleable Dept. Angling Club held their Annual Handicap at Findern on 27 September 1910 presumably unaware of the fate of the company, for the weigh-in was followed by an enjoyable musical evening at the Greyhound Inn.⁷¹

The company could no longer keep the event secret after they were summoned by the factory inspector on 14 October 1910 for failing to report a fatal accident. The unfortunate William Walklate had broken his leg at the Clarke Street works and died later at the Infirmary. The inspector found "no report of the accident had been made and found that this instance of neglect was not an isolated one".⁷² The company pleaded guilty before the Mayor and other magistrates and was fined £1 3s costs. However Mr Claude Hughes, the accountant to the company, declared "The company as such has ceased to exist and all the property and assets are in the hands of the receiver. He will deny responsibility owing to the occurrence of the accident prior to his appointment."⁷³

An employee of 1926 recalled that there was a desire by local firms to keep the company going. Smaller castings work was sub-contracted to the company by those foundries which had prospered such as Haslams, Derwent and Parker Foundries.⁷⁴

Why did the company collapse? Unfortunately there was a fall in demand for ornamental castings, railings, balustrades and so on which were no longer fashionable in the early 20C. Architects had over-used the medium and produced work that was not tasteful which caused a rejection of iron for embellishment. "An immense amount of skill was available in foundries: some of the early mould-makers were superb craftsmen; but owing largely to the absence of the designer from industrial production, this skill was undirected."⁷⁵

Cast iron had become unpopular, too, due to the chore of blackleading. However, there was a growing market for vitreous enamel, for the new gas cookers and fires as well as kitchen ware; a market which the French hold today.

It would appear that the Handyside management lost their "eye for the market" for iron products were still in demand. Bicycles, for instance, formed a large market in this period. The sanitary improvements to houses created a huge demand for enamel ware and, of course, pipes, drainpipes and gutters. There would be an increasing demand for road signs, manhole covers and other street furniture which Handyside had already begun to produce, eg lamp posts. The building of tunnels created a demand for iron ribs and setts. The Mersey tunnel was being built (a contract obtained by the Stanton ironworks) and the London Underground system developed.

It appears that Handysides suffered from financial mismanagement. The Butterley Company considered making an offer for Handyside's goodwill but after seeing some figures they simply enquired about taking over the Foundry Dept. The official Receiver replied that he would not consider splitting the firm so Butterley let the matter drop.⁷⁶ The Butterley Company were to complete Handyside's unfinished work such as the construction of Cannon Street Station.

The massive increase in capital outlay which the Clarke Street extension must have occasioned at a time when the demand for bridges had peaked may have been the main cause of the financial condition of the company which resulted in its collapse in 1910. Further the loss of a strong leader which gave this firm its dynastic complex may also have led to its demise. Had Andrew Handyside been in charge in this latter period it seems likely that he would have been able to foresee future markets and exploit all areas of production however small. He always offered a wide variety of products and was particularly aware of the overseas market.

The company should also have tried to retain Ley, who instead became a competitor and must have suffered a further severe loss when Ewing Matheson finally resigned as a director in 1903, to be free to carry on his own practice in London. "As sole remaining partner in the firm of Matheson and Grant, he acts as consulting engineer and purchasing agent for municipalities, railway companies, harbour boards, and others in the colonies who require in Europe such services as he can give."⁷⁷

Buchanan, it appears, did not take the great interest his uncle had in the company. Perhaps he was overawed by Andrew Handyside, who continued to go to the foundry up until the day he died - 9 June 1887.

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B. ORAL EVIDENCE

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- Daniels, J.E. Witnessed the Swing Bridges working at Northwich
- Maskery, V. Grandfather and Greatgrandfather worked for Handysides

WALDEWIKE - TRADING SETTLEMENT OR DAIRY FARM?

(by Jane Steele)

Derbyshire Miscellany Vol 11, Pt 6 (Autumn 1988) and Vol 12, Pt 1 (Spring 1989), contained articles on Anglo-Saxon and medieval Derby based on material gleaned from a wide variety of documentary sources, eg cartularies, borough rentals, maps, etc and reinforced, where possible, by observations on the present-day landscape. Modern-day theories on place-names, rural and urban settlements and the development of Anglo-Saxon burghs were used to help interpret this evidence. From this mass of information a picture emerged of a complex containing a royal estate centre, 'wic' and fields, probably 8C Northworthy/Derby, whose development through the 9-13C could be followed, sometimes with ease and sometimes as a vague shadow.

Originally Part II was going to be a continuation of Part I entitled 'The Implications for 12C tenures in Derby'. After the 1820-30 map of Derby was discovered during the drafting of the maps for Part I in 1988, small parts of Part I were rewritten and a new Part II 'The Emergence of Derby' written when further research revealed nothing which seriously precluded the existence of the complex. The original Part II contains further evidence for the complex as it shows that William de Heriz's and Peter de Sandiacre's land in the later St Werburgh's parish was held by at least two Sheriffs of Nottingham and Derby in the time of Henry I and Stephen. Derby at this time was probably divided into three parts: Lincoln Cathedral's part, the Sheriff's part and a third part, in the area of the present day Eagle Centre, held for the king as part of the Serjeanty of Sandiacre. Publication is delayed so more research can be done on the relationships between the various families who dominated life in Derby in the 12C.

In Miscellany Vol 12, Pt 3 (Spring 1990) Marjorie Tranter contributed a critique on the place-name and other evidence used in the articles. In Part I the discussion on *vicus* and *wic* on p132 was solely to give a brief explanation of the type of *vici*, ie settlements, in Waldewike Strete which had emerged from analysis of the documentary evidence, rather than all the alternatives suggested by place-name evidence. As Waldewike was a candidate for one of the two *vici*, Margaret Gelling's evidence on *wicham* names was quoted, even though out of context, as it seemed to show the transition from *vicus* to *wic*. As Mrs Tranter states in her concise summary of current *wic* interpretations, this is a very specialised field. It is also an ever developing field, as shown by the recent interpretation of *wic* when applied to Middle-Saxon trading settlements¹. New references emerge like the charter of 799 'dated at the royal vicus of Tome-wordig' [Tamworth] and another of 815 'dated at the king's vicus of Wicbold'² - so a *vicus* could be very grand or very unimportant! In 1987/8 when Part I was written, the standard works on place-name evidence available in Derby were quite old and none explained 'dairy farm'. Cameron (1959) defined Wardwick as 'Walda's *wic* or dairy farm', Gelling (1978) only mentioned 'dairy farm' and an Ekwall category (1960) just expanded dairy-farm to 'or cattle farm ... especially in the south-west'. By 1964 (Tranter's ref) his *wic* categories were updated. Again in 1987, recent work on rural Anglo-Saxon settlements (1983) made no mention of the concept of a 'dairy farm' and surprisingly showed experts in this field were questioning the basis of place-name evidence when explaining the origins and growth of Saxon settlements.³ It was therefore necessary to keep an open mind and, in the final event, analysis of the primary source evidence indicated that Waldewike was more likely to have been a settlement than a dairy farm. As Mrs Tranter also omitted to define or suggest an extent for a dairy farm or to define 'Anglo-Saxon' - was it pre- or post-Viking - the evidence has been examined again to see if place-name theory over-rides the other available evidence. Waldewike and the fields are considered separately as there is, as yet, no conclusive evidence that Waldewike was one of the *vici* held by Burton Abbey.

The evidence for Waldewike shows that:

- it lay on either side of the Markeaton Brook and its boundaries were defined by an area which was untithed.
- the southern part appears to have been moated on at least three sides by the Markeaton and Bramble Brooks, with a road, present day Wardwick, through the centre.
- all the roads in the vicinity leading to Waldewike from Ryknield Street, Burton Road and Markeaton originally ran alongside brooks (Bramble, Folebrook and the south bank of Markeaton Brook; Friar Gate was probably later) and converged on the crossing over Markeaton Brook to Sadler Gate.
- St Werburgh's Church was founded adjacent to this crossing and named after the saint at some time post 683.
- a suitable site for an early market exists adjacent to the crossing on the north side of Markeaton Brook. (Note: the medieval (and present day) Market Place was probably not founded until c1200.)
- the few charters refer to messuages and tofts held or granted by individuals, not major land-holders.

The evidence for the fields, later known as St Werburgh's parish, shows that:

- The acreage in 1833 was 664a 2r 30p of good land, partly consisting of strong clay and good loam, plus the land occupied by buildings.⁴ (Note: St Alkmund's parish, not including Little Chester, was called excellent.)
- the holders of this land, either wholly or partially, can be traced for many centuries:

<u>Date</u>	<u>Monarch</u>	<u>Holder</u>	<u>Land</u>
1066	Edward	King	
c1085-c1127	William I -	Burton Abbey	2 vici and caracutes in Waldewike strete
c1114	Henry I	Richard de Heriz, Sheriff	
1127-9	Henry I	Ivo de Heriz, Sheriff	probably William de Heriz's land
c1154	Stephen/ Henry II	Roger de Buron, Sheriff [Barony of Buron]	probably Sandiacre's lands [Horestan (Horsley) Castle]
c1154-59	Henry II	Peter de Sandiacre, Serjeant (m Adeline, s Roger de Buron)	meadow, arable & pasture (for extent: Darley Cartulary, A1) (incl Doggelowe (vicus))
1154-79	Henry II	Darley Abbey	meadow, arable & pasture (incl Doggelowe)
c1160	Henry II	William de Heriz, heir Ivo	the Haye (vicus)
c1160	Henry II	Walchelin & Goda	the Haye
1160-82	Henry II	Darley Abbey	the Haye
c1200	John	Darley Abbey	Tofts developed in Newlands (ex-Sandiacre land)
c1240	Henry III		First written record re St Werburgh's parish
1274-75	Edward I	Crown assumed patronage of Darley Abbey in 1266	Part or all of demesne of the Burgh
1538	Henry VIII	Darley Abbey	Dissolution
1841	Victoria		Tithe map for St Werburghs shows vestiges of 2 main fields - Stockbrook and Parcel Field

The history of the fields can be traced for 800 years and therefore they probably operated as a unit for some centuries before 1066. Their total acreage is rather large for a farm and the presence of the two vici situated at strategic points on main roads would have to be explained, as would Waldewike's urban features. Professor Cameron has shown in Nottinghamshire that English habitative names with endings such as *-wick* occur along the valleys of major rivers, probably indicating that most of these sites had already been occupied when the Danes came.⁴ This would support the pre-Viking existence of Waldewike described in Part II, but does not help to solve the problem of defining a dairy farm. The close proximity of Northworthy and Waldewike tends to support two settlements with administration and trading (including market) functions, particularly in view of the expansion of Mercia under Offa and Derby's regional function (Pt II, p10) which may have been in place long before the Vikings arrived. Some Roman roads were still being used and the Derwent provided access to the Trent, the North Sea and westwards almost to Tamworth. On the other hand, Wardwick, which connected Friar Gate to the bridge leading to St James's Street, may be a secondary feature and indicate the presence of an earlier moated site before Waldewike's urbanization. Again the Bramble Brook may have been diverted to prevent flooding at the Markeaton Brook crossing and to enable land to be reclaimed from marsh.

Concerning Mrs Tranter's other points, it was certainly not the intention to give the impression that Burton Abbey owned Weston-on-Trent. DLS Deed 6768 (Part I, p121) and its date (1545) was quoted to show when the Paget family gained Weston and Aston because the deed giving evidence of Charles Paget's attainder referred to these manors. The synopsis for the grant reads 'The Crown to William Pagett - The manors of Weston, Aston, Wilne, Shardlowe, Morley & Smalley, advowsons of the churches of Weston & Aston, late parcell of possessions of John, Bishop of Chester and of lands in Staffs, late parcel of possessions of the Bp of Coventry & Litchfield to be held of the King by the service of a twentieth part of a Knights fee'.

- 1 Gelling, M, *Signposts to the Past*, 2nd Ed, 1988, p248; Haslam, J, *Early Medieval Towns in Britain*, 1985, p15
- 2 Taylor, C, *Village and Farmstead*, 1983, p117, p122-124
- 3 *Catalogue of the Stowe Manuscripts in the British Museum*, Vol 1, 1895, Stowe Charters nos 7, 12
- 4 Glover, S, *History and Gazetteer of the County of Derby*, Vol II, 1833, p410
- 5 Cameron, K, 'Scandinavian Settlement in the Territory of the Five Boroughs: The Place-Name Evidence', reprint of a lecture in 1965 in Cameron, K, *Place-name evidence for the Anglo-Saxon settlements and Scandinavian invasions*, 1975, p121

DERBYSHIRE ARCHAEOLOGICAL SOCIETY

INDUSTRIAL ARCHAEOLOGY SECTION WINTER PROGRAMME - 1990/91

**EMIAC 40 - 200 Years of the Butterley Company
Sat 13 Oct 1990 at Alferton Hall**

A full programme with a booking form was published in the July newsletter. For late bookings telephone Mark Sissons on Hinckley (0455) 291592. To coincide with the conference, a major new hardback history of the Butterley Company by Philip Riden will be published jointly with the Derbyshire Record Society; see the January newsletter for full details.

**The Industrial Archaeology of the Calke Estate
by Marilyn Palmer & Peter Neaverson
Fri 19 Oct 1990 at the Friends' Meeting House**

Many members of the D.A.S. are already familiar with Calke Abbey and the Harpur-Crewe estate, but may not be aware of the related industrial activities, which included several quarries and lime kilns, a brickworks and an early mineral tramway running to the Ashby Canal. Since the estate came into the possession of the National Trust, the Leicestershire Industrial History Society have strayed over the border into Derbyshire to study the history of these enterprises, using both fieldwork and documentary evidence.

**Joseph Wright and Derbyshire Science and Industry
by David Fraser
Fri 23 Nov 1990 at St. Helens House**

The recent "Wright of Derby" exhibition at the Tate Gallery not only confirmed the artist's stature as major British painter, but gave a rare chance to see the faces of many of the eminent industrial and scientific pioneers of the eighteenth century whom he painted. In addition, Wright's fascination with lighting led him to depict subjects such as "An Iron Forge" and "Arkwright's Cotton Mill by Moonlight". David Fraser is Derby City Council's Museums and Arts Officer, and has made a special study of Wright's connections with science and industry. This is a Society Lecture and members must obtain tickets in advance from Malcolm Burrows, 12 Wilne Road, Draycott DE7 3NG.

**Burnaston - Birthplace of an Airline
by Tony Topps
see January newsletter for date & venue**

The airport established by Derby Corporation at Burnaston in the 1930s has now become another vanished part of our industrial past, as the site has been flattened to make way for the new Toyota factory. Tony Topps has had 40 years of experience with British Midland Airways, which was founded at Burnaston and was based there for many years before moving to Castle Donington, and his talk will recount the story of the airfield and the airline from his personal experiences.

**A.G.M., Slides and Films
Wed 20 Mar 1991 at Derby Industrial Museum**

Please bring your own slides of I.A. subjects to supplement the formal part of the meeting. We shall also be showing a video of working canal boats at Gloucester Docks, as visited on our 1989 coach trip. This is also a chance to catch up with new developments and displays at the Industrial Museum.

All meetings (except EMIAC) commence at 7.30pm. For any queries contact the I.A. Section secretary:

Ian Mitchell: 159 Draycott Road, Sawley, Long Eaton, NG10 3BX
Long Eaton (0602) 729029