

Woodwork Tools in Early Modern Oxford

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SUMMARY

Oxford apprentices were routinely promised clothes, money or other items on the completion of their apprenticeships. This article focuses on the tools promised to woodworkers in the sixteenth and seventeenth centuries, which shed light on working practices. The trades represented included those of carpenter, joiner and cooper, though the range of activities was wider than these terms suggest and even included musical instrument making, an activity which is usually thought of as a specialism. The evidence comes chiefly from apprenticeship enrolment books and is supplemented by wills and inventories.

OXFORD APPRENTICESHIP CONTRACTS

The Oxfordshire History Centre (OHC) holds seven leather-bound volumes that principally record the formal enrolments of apprentices indentured in Oxford and admissions to the freedom of the City of Oxford. The earliest enrolments date from the sixteenth century,¹ the latest from the nineteenth. Apprentices were contracted into numerous occupations, over 130 of which are named in the first four OHC volumes. This article discusses provisions made for apprentice woodworkers in the enrolments contained in these volumes, which cover the period 1513–1662.² Woodworking trades included those of boat-builder, carpenter, cooper, fletcher, joiner, sawyer and wagon-maker.

The enrolments in the OHC volumes are abbreviated summary records of the original apprenticeship contract documents kept by the master and apprentice involved.³ Most of the early enrolments were written in rather idiosyncratic Latin, but following a city council resolution of 14 December 1622 they were written in English and Latin was reserved mainly for certain codocils and marginal comments.⁴ The structure of the enrolment records changed little over time. The information they contain generally comprises the name and domicile of the apprentice, his father and the master, the name of the occupation, and a start date and length of term for the apprenticeship. Comparable apprenticeship documents are preserved in many other record offices.⁵

TERMINAL PROVISIONS FOR APPRENTICES

Contracts usually specified that when the term of apprenticeship was completed, the master would give the apprentice clothing appropriate for someone of that social position, for both workdays and Sundays, and some money. The sum of money was typically between one and

¹ See A. Crossley (ed.), *Oxford City Apprentices 1513–1602*, OHS, ns, 44, forthcoming.

² OHC, A.5.3 includes enrolments from 1513–91, L.5.1 from 1590–1614, L.5.2 from 1613–40, and L.5.3 from 1639–62.

³ For mention of the originals see OHC, L.5.2, f. 43 (1617).

⁴ Noted in *ibid.* L.5.2, f. 109.

⁵ For example, the Bristol apprentice book Bristol Record Office, 04352(1) records many similar apprenticeships from 1532–65, with tool provisions similar to those described below.

sixty shillings, though occasionally substantially more.⁶ Often the apprentice received just a few pence, and sometimes no money at all. Additionally, a master might commit to provide what could be described as 'tools of the trade' to his apprentice on completion of his term of apprenticeship,⁷ though very few promised such extras routinely. While nothing beyond the standard cash and clothing was ever offered in most trades, extra provision was reasonably common in some. Especially among the earlier contracts, a significant proportion of such promises were in woodworking trades, but there are examples in many other occupations.

Sometimes this extra provision was an additional piece of clothing, but the most usual extras were tools or other equipment appropriate to the occupation in which the apprentice was to be trained. Thus one weaver was promised two bastard looms,⁸ a 'hardwareman' a horse,⁹ and a fuller a pair of shears and five dozen 'handlestockes'.¹⁰ Some apprentices were promised musical instruments. This occurred as early as 1536 in Bristol,¹¹ in 1558/9 in Norwich,¹² but not before the 1580s in Oxford.¹³ The Oxford masters who promised instruments were all musicians, but the Bristol and Norwich apprentices were bound to an innkeeper and a roughmason who perhaps supplemented their earnings by performing music.

The monetary value of extra provision was clearly important, and sometimes the apprentice was offered the choice of a cash equivalent of the clothes or tools. For example, in 1613 the apprentice of Henry Bonner, fisherman, was to have the choice of 'one fishing net to the value of 20s. or 20s. in money, and also one boat of the price of 33s. 4d. or 33s. 4d. in money'.¹⁴ In 1621 the cutler John Randall promised Walter Bishop that he would provide '40s. in tools, if he chance to die in the interim'.¹⁵ In contrast to these, an apprentice to the cooper Richard Stringer was promised nothing at all on completion, but 'the master shall and will yearly... during the said term give unto the said Richard Kennistone his apprentice the sum of five pounds towards his apparel'.¹⁶

The rationale for provision is unclear as masters were very inconsistent in both the nature and quantity of what they promised to different apprentices. In most cases nothing was offered other than cash and clothing, even in occupations where specialist equipment might be thought essential or at least highly desirable, such as locksmith, gunsmith, clockmaker and surgeon/bonesetter. A considerable amount of time may be devoted to refining and keeping a tool such as a chisel or plane in good working order, so possibly some apprentices were allowed to keep equipment they had used and developed during their apprenticeship. A less kind master may have disposed of old worn tools to the apprentice and acquired new ones for himself. Or tools may have been more readily available to, or more effectively selected by, established practitioners of an occupation than neophytes, so the master would acquire tools on their apprentice's behalf. The quantity of provision may have been affected by the circumstances of the apprentice (for example, if his father gave the master some money). Evidence to prove any of these speculations is generally lacking, though a tailor's contract of 1611 that specified 'one pair of new taylor shears and one new pressing iron'¹⁷ is one of several

⁶ Ten pounds was promised in 1586 (OHC, A.5.3, f. 338); there are a few examples of even greater sums.

⁷ Few female apprentices appear in the books, none before Susana Phipps, who was born in the Bocardo (prison) and apprenticed in 1602 to a painter called Henry Clynych 'ad artes de huswivry et knitting': *ibid.* L.5.1, f. 104.

⁸ *Ibid.* A.5.3, f. 278 (1576).

⁹ *Ibid.* A.5.3, f. 132v. (1570/1).

¹⁰ *Ibid.* L.5.1, f. 145 (1606).

¹¹ Bristol Record Office, 4352(1), p. 69.

¹² D. Galloway (ed.), *Records of Early English Drama: Norwich 1540-1642* (Toronto, 1984), p. 46.

¹³ The first was a sackbut: OHC, A.5.3, f. 320v.

¹⁴ *Ibid.* L.5.2, f. 13v.

¹⁵ *Ibid.* f. 85v.

¹⁶ *Ibid.* L.5.2, f. 170v. (1628). This apprenticeship was later cancelled.

¹⁷ *Ibid.* L.5.1, f. 212.

where 'new' is part of the description, which suggests that used items might otherwise have been expected.

The occupations where extra provision was most common were those of woodworker, then mason and, to a lesser extent, plumber/glazier, barber and smith. Butchers tended to offer more money than many other trades, but only one promised any tools.¹⁸ Many of the apprenticeship contracts do not specify particular tools but simply mention a number of tools, or a description indicating one tool of each sort,¹⁹ or the tools needed for a particular task, for example 'all tools sufficient to make a piece of wainscot ceiling'.²⁰ Outstanding among the latter type is a promise which occurs twice, almost identically, to apprentices of Edward Ilsbery, joiner:²¹ 'so many and such tools as shall be sufficient and fit for the making and finishing of a chest of viols',²² and 'so many and such tools as are necessary to make and finish a chest of viols'.²³ These two contracts provide crucial evidence that musical instruments (viols) were made in Oxford by artificers described as joiners,²⁴ and incidentally confirm that a standard number of viols for a 'chest' was six,²⁵ but frustratingly they do not specify the tools used to make them.

TYPES OF WOODWORK EQUIPMENT SPECIFIED IN ENROLMENT BOOKS

Tools are generally named in English in the enrolment books, even in early examples where the rest of the text is in Latin, though they are sometimes given in both languages. This was probably either because scribes did not know suitable Latin words or to eliminate any possibility of misunderstanding by recording this detail in terms the parties would understand. The tools mentioned are mostly standard types that might be expected in any woodworking context. Most commonly specified are various types of axes, hammers, saws, chisels, planes and augers – the full range is given in Table 1.

The types of woodwork tools found in these records are consistent with those found elsewhere. They comprise a wide range of hand tools, most of which have been in use at least since Roman times. Roman tools, including various types of chisel, auger, plane and lathe, have been described by Ulrich.²⁶ Some of the tools in use in England slightly before the apprenticeship contract books are characters in the fifteenth-century poem *Debate of the Carpenter's Tools*,²⁷ and the following types are mentioned in both the *Debate* and the contracts: broad axe, mallet, twybill [a 'T'-shaped axe], wimble [a boring tool], compass, adze, chisel, gouge, plane, pricking knife, auger, rule and square.

In the period under investigation no apprentice was promised a work bench and only two were to receive a vice. This could have important implications for working methods, but there

¹⁸ Ibid. A.5.3, f. 84. (1558). The tools were unspecified.

¹⁹ Ibid. f. 308v. (1581).

²⁰ Ibid. f. 283.

²¹ In his will of 1609 Ilsbery described himself as joiner or instrument maker: *ibid.* MS Wills Oxon, 37/2/33.

²² Thomas Thickpeny, apprentice to Edward Ilsbery, 1606: *ibid.* L.5.1, f. 137. The enrolment was 10 May but a marginal comment notes that it was dissolved on 4 November that year.

²³ John Stacy, replacing Thickpeny, 1607: *ibid.* f. 147.

²⁴ A later example is John Baker, 'joiner and wire worker': M. Fleming, 'Instrument-Making in Oxford', *Galpin Society Journal*, 57 (2004), p. 248. In London, some viol makers belonged to the Fletchers' Company, while numerous virginal makers belonged to the Joiners: C. Mould (ed.), D.H. Boalch, *Makers of the Harpsichord and Clavichord*, 3rd edn (Oxford, 1995), pp. 715–16.

²⁵ For chests of viols see M. Fleming, 'Unpacking the "Chest of Viols"', *Chelys*, 28 (2000), pp. 3–19.

²⁶ R.B. Ulrich, *Roman Woodworking* (Yale, 2007), ch. 3. Photographic illustrations of Roman and later tools may be found in H.C. Mercer, *Ancient Carpenters' Tools* (Pennsylvania, 1951).

²⁷ Transcription and commentary in E. Wilson, 'The Debate of the Carpenter's Tools', *The Review of English Studies*, ns, 38, no. 52 (Nov. 1987), pp. 445–70.

Table 1. Tools promised to apprentices contracted into woodwork occupations in Oxford. All these appear before 1614, except where indicated.

<ul style="list-style-type: none"> ● Axes <ul style="list-style-type: none"> ○ adze (for a cooper) ○ axe ○ broad axe ○ heading axe ○ narrow axe ○ 'scoreing' axe ○ twybill ● Boring tools <ul style="list-style-type: none"> ○ auger <ul style="list-style-type: none"> ■ draw bore auger ■ half-inch auger ■ inch auger ■ mortice auger ■ three-quarter auger ○ wimble ● Chisels <ul style="list-style-type: none"> ○ broad chisel ○ 'former' (firming chisel) ○ heading chisel ○ mortice chisel ○ paring chisel ○ gouge ● Knives <ul style="list-style-type: none"> ○ drawing knife ○ heading knife ○ paring knife ○ pin knife ● Marking and measuring tools <ul style="list-style-type: none"> ○ compasses ○ line ○ pricker ○ pricking knife ○ square 	<ul style="list-style-type: none"> ● Planes <ul style="list-style-type: none"> ○ bit for a half round ○ croze ○ foreplane ○ French plane; French plane bit ○ howell ○ jointer ○ mitre plane ○ ogive plane bit ○ plane ○ plane irons ○ 'rabut' (rebate plane) ○ short plane ○ smoothing plane ● Saws <ul style="list-style-type: none"> ○ hand saw ○ 'tenant' (tenon saw) ○ whip saw (1641) ● Other <ul style="list-style-type: none"> ○ brand tool ○ cutting tools ('one dosen of cuttynge tolles') ○ files (for a cutler) (1621) ○ hammer; hand hammer ○ heading tool ○ mallet ○ spokeshave (for a cooper) ○ trestles (for a sawyer) (1631)
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is at least one good reason why workbenches might not have been provided: in relatively modern times, it has been common for woodworkers to make their own workbench as part of their training, so perhaps such a tradition was already present in this period. Similarly, vices are promised only twice in the apprenticeship contracts, neither to a woodworker. This does not mean that woodworkers did not use vices (see Benet Pryme, cited below); it suggests that vices were, or were considered, part of the structure of the workbench, and/or that other methods were employed to hold wood securely while it was being worked. Workbenches were certainly known in the area. For example, the inventory of an Oxford joiner Charles Rainsford (d. 1617) includes 'in the shop his working tools and benches',²⁸ and that of a Thame joiner John Groome (d. 1624) includes 'four working benches and a lathe'.²⁹ Vices were often valued in the probate inventories of smiths and cutlers. No cramps have been found from earlier than

²⁸ OHC, MS Wills Oxon, 55/3/14.

²⁹ Ibid. MS Wills Pec. 39/3/35.

1703.³⁰ Workbenches and vices were probably commonly subsumed within formulae such as 'working tools' or 'other appurtenances' which are valued in many probate inventories of joiners, carpenters and other artificers (see below).

No woodworker was promised a rule. Squares are mentioned several times but compasses were promised only to a few coopers and one sawyer.³¹ Gouges were promised only to two joiners.³² The only sharpening stone, if that is the correct interpretation of 'smoothing stone', was promised to a currier,³³ though grindstones appear in numerous wills and inventories. There is no mention of scrapers, which leaves methods of finishing work unspecified as abrasive papers were unknown in England at this time. Available finishing techniques other than scrapers included the dried stems of 'mares tail' (*Equisetum arvense*), and sharkskin, but neither of these are mentioned in apprenticeship contracts – they may have been too cheap and readily available, or too ephemeral, for that sort of provision. Files were promised only by a cutler in 1621 and a sawyer in 1631.³⁴

Mention of trade-specific woodworking equipment is rare in the apprenticeship contracts. Perhaps the most specialised items are some of the equipment promised by barbers, sawyers and fishermen, and the 'one howell and one croze [both types of plane]' which were among the tools promised by the cooper John Younge in 1641.³⁵ However, some woodwork tools are mentioned in contemporary wills and inventories yet do not appear in any apprenticeship contracts, so the fact that a particular type of tool was not promised explicitly does not mean that it was absent from sets of unspecified tools, nor does it prove that it did not exist at the time or even that it was rare. It may be the case that some trade-specific tools or devices such as jigs would be made as and when required, and would not be used by anyone other than their originator, in which case they would not be mentioned in circumstances where such things change hands. By the seventeenth century, equipment was sometimes recorded in probate inventories more precisely than 'joiner's tools' or similar formulae. For example, in 1629 the possessions of the joiner Hugh Daves of Burford included 'all the planes and axes and hammers and saws and other tools in the house'.³⁶ Nevertheless, unusual specialist equipment might not have been recognized by those responsible for composing a probate inventory, and of course it might not be mentioned or valued individually even if the appraisers knew what it was.

It is possible to quantify some aspects of the apprenticeship contract data concerning tools. The earliest promise recorded was made by Robert Hamond, carpenter on 11 December 1539.³⁷ Hamond promised George Cotman that after eight years he would receive 'one axe, a handsaw, a tenon saw, a mortice auger, a draw-bore auger, a heading chisel, a broad chisel, a twybill, and a square'. This selection of tools closely resembles many from half a century later. During the following thirty years, 668 apprentices were bound, of whom forty-six (6.9 per cent) were in woodwork occupations. Promises of tools were made to twenty-nine woodwork apprentices, and to thirty-three apprentices in non-woodworking occupations. Thus 63 per cent of woodwork apprentices were promised tools, but under 5 per cent of all other apprentices. By the time of the Civil War, the practice had almost disappeared and only five apprentices were promised any sort of equipment between 1642 and 1662, though fifteen were promised a cloak or cash to its value. The practice of promising occupational equipment was at its height from

³⁰ A possession of John Addams, chandler and carpenter of Clanfield: *ibid.* 160/1/44.

³¹ The first was in 1585: *ibid.* A.5.3, f. 334.

³² The first in 1582: *ibid.* A.5.3, f. 314.

³³ *Ibid.* A.5.3, f. 267v. (1573).

³⁴ *Ibid.* L.5.2, f. 82v.; L.5.2, f. 216.

³⁵ Promised at the enrolment of William Coomes, 13 September 1641: *ibid.* L.5.3, f. 16. In the *OED* the earliest citations for howel (a plane with a curved sole) and croze (a tool for making the groove in cask staves) are currently 1846. The earliest apprenticeship promise of a croze was in 1558/9: OHC, A.5.3, f. 85.

³⁶ *Ibid.* MS Wills Oxon, 296/4/65.

³⁷ *Ibid.* A.5.3, f. 35.

1570 to 1641, when such promises were made to 175 apprentices. Of these, sixteen were to receive musical instruments, seventy-four were to receive tools for a woodworking trade and the rest were for other occupations, including mason, smith, plumber, glazier, tailor and barber. Among woodworkers, tools were promised most frequently to carpenters and sawyers, while a smaller proportion of joiners and coopers were to receive any. In 1641 the sawyer Humphrey Hannes promised quite a specialised set of equipment 'one new whip saw, one pair of trestles, one rist [a saw wrest], one file, one hook, one axe, one line, one pair of compasses, one saw box and one budget [probably a tool bag or case]', but usually he was less precise, as in 1658/9, when he mentioned 'small tools belonging to the said trade of sawyer'.³⁸

OTHER EVIDENCE ABOUT TOOLS

Apart from apprenticeship contracts, documents such as accounts, correspondence and legal reports provide limited but sometimes useful evidence about woodwork practices in sixteenth-century Oxford. Many categories of document from the sixteenth century and some from the seventeenth century were sampled for this research and those that seemed promising were examined in detail. Relevant material was found to be extremely scarce, so any information about further sources of evidence on tools would be most welcome.³⁹

One of the more useful sources is probate material, including wills and their associated inventories. Probate inventories assign values to the possessions identified, though these are often grouped together as 'lumber', 'appurtenances', or similar catch-all terms, or by the location of the items. Sometimes this is a 'shop' or 'work house', either of which can mean workshop,⁴⁰ which often contains materials and equipment of the owner's trade. Nicholas Temple, yeoman, of Burford had a bucket and a spade and 'other lumber' in his 'shop', together with an axe and a hatchet, typical tools of very general use.⁴¹ Where unspecified, the general nature of the tools mentioned may be deduced from the occupation of the owner. For example, in 1599 Thomas Walburge of Burford left to his wife 'all my instruments of music, my case of tools, books and other things not before given'; he was a barber-surgeon so these tools were probably barber-surgeon equipment as specified in other barber-surgeons' inventories.⁴²

The types of tools promised in apprenticeship contracts are comparable with those in the probate inventory of one of the most distinguished woodworkers in sixteenth-century Oxford, the master carpenter Robert Carow (1491–1531). He owned chisels, compasses, augers, a gouge, an axe, adzes, a handsaw, planes of various types, a square, a hammer, a wimble and a grindstone.⁴³ Many further examples of tool possession exist in probate inventories. It is notable that the tools that are identified individually in inventories tend to match those promised to apprentices. This could suggest that a fairly standard selection was deemed necessary for a particular occupation and that, once so equipped, the set could be maintained, with repairs or replacements, throughout a working life but there are too few examples of fully specified sets of tools to confirm this.

In the wills of Oxfordshire joiners, carpenters and turners, tools are mentioned in about one

³⁸ Ibid. L.5.3, ff. 19, 172.

³⁹ Please send information about such sources to m.fleming@hud.ac.uk.

⁴⁰ A stall in Debenham, Suffolk was described as an '*officinam Anglice* a shop', that is 'a workshop called in English a shop': L. Alston, 'Late Medieval Workshops in East Anglia', in P.S. Barnwell et al. (eds.), *The Vernacular Workshop: From Craft to Industry, 1400–1900* (York, 2004), p. 59.

⁴¹ OHC, MS Wills Oxon, 66/1/28.

⁴² Ibid. MS Wills Oxon, 69/3/24 and Archdeaconry Register 190, f. 385. For a survey of musical instruments in wills and inventories from Oxford and elsewhere, see M. Fleming, 'An "Old Old Violl" and "Other Lumber": The Physical Remains of Music in Provincial, Non-Noble England c.1580–1660', *Galpin Society Journal*, 58 (2005), pp. 89–99.

⁴³ See E.A. Gee, 'Oxford Carpenters, 1370–1530', *Oxoniensia*, 17–18 (1952), p. 183.

in five wills and about one in four inventories. Among those that mention tools, at least one tool is specified by name (rather than by a formula such as 'working tools' or 'joiner's tools') in only about one in five wills but in more than a third of inventories. The most common tool to be mentioned in this way is a grindstone. Many types of tool mentioned in wills and inventories do not appear in the Oxford apprenticeship contracts, for example, lathe,⁴⁴ dung pick,⁴⁵ iron bar,⁴⁶ and quilling wheel.⁴⁷ Inventories also sometimes mention tool containers, including a saw box,⁴⁸ a 'chest of tools',⁴⁹ and even an 'old wainscot cradle full of carpenter's tools'.⁵⁰

For comparison, in Cambridge, the 1557 inventory of Benet Pryme records that in his workshop, as well as a range of musical instruments, some unfinished, were numerous planes 'great and small' and saws.⁵¹ He also had two 'staplers'; these could be tools concerned with the staple of a shawm, a precursor of the oboe, often played by waits (town musicians), or may have been devices he had made for weighing wool. 'Common beams and way [weighing] houses' are mentioned in a 1573 petition about attracting the wool trade to Ipswich,⁵² and the court book of the Worshipful Company of Carpenters (of London) records a dispute in 1583 concerning a stapler.⁵³ This was 'fixed' in someone's house, who promised to give the real owner, in compensation, a 'good sound plank' 8 ft long, 2 ft wide and 2 in thick, which could be such a beam. Another group of Pryme's tools that seem more oriented to metalwork comprises 'vices, moulds, saws, files and other tools'. Like their Oxford contemporaries, the inventories of Cambridge joiners such as John Wilson and Peter Bell include benches and working tools.⁵⁴

DISCUSSION

Apprenticeship contracts, wills and inventories all supply useful information about craft tools and techniques.⁵⁵ However, though the enrolment books delineate the range of tools promised to newly qualified woodworkers, many questions remain unanswered. For example, why were tools promised more often to woodworkers than to those in other occupations? The quantity of tools promised for apprentices was very variable between cases – what determined the provision? And apart from being presented with them at the completion of an apprenticeship, what were the normal circumstances for the acquisition of tools? The following observations and speculations may help to answer some of these.

No obvious reason for the rate of promises being higher for woodworkers than for other occupations is apparent. Butchers, for example, who surely needed a range of knives and cleavers and maybe a cutting block, almost never made such a promise. However, a number of observations can be made. In most occupations, the selections of tools promised to apprentices

⁴⁴ Oxford University Archives, Inv (Tanner-Y) (1613).

⁴⁵ OHC, MS Wills Oxon, 298/5/32 (1623).

⁴⁶ Ibid. 11/4/28 (1613).

⁴⁷ Ibid. 31/1/2 (1615).

⁴⁸ Ibid. 30/4/37 (1624). The context suggests this is probably a container, whereas the 'saw box' of Humphrey Hannes cited above seems more likely to have been a kind of jig to assist sawing, like a mitre box.

⁴⁹ Ibid. 298/5/32 (1623).

⁵⁰ Ibid. 79/3/22 (1668).

⁵¹ Pryme describes himself in his will as a launderer but worked as a Cambridge University wait. He is one of the earliest recorded stringed instrument makers in England and probably one of the earliest recorded violin makers anywhere: Cambridge University Library, Vice-Chancellor's Court, will dated 24 September 1557, inventory 12 October 1557.

⁵² R.H. Tawney and E. Power, *Tudor Economic Documents*, vol. 3 (London, 1924), p. 98.

⁵³ J.F. Ainsworth (ed.), *Records of the Worshipful Company of Carpenters*, vol. 6 (1939), p. 174.

⁵⁴ Cambridge University Library, Vice-Chancellor's Court, inventories dated 23 February 1619/20 and 24 July 1621.

⁵⁵ Cf. A. Buxton, 'Domestic Culture in Early Seventeenth-Century Thame', *Oxoniensia*, 67 (2002), p. 109.

were quite consistent over time. For example, the first tailor's promise (1543/4)⁵⁶ was for 'one pair of shears [and] a pressing iron' and seventy years later the last tailor's promise of extra equipment was 'a new cloak, a pressing iron and a pair of taylor's shears';⁵⁷ after this, supplementary promises by tailors comprised nothing but cloaks. This suggests stable working practices, though the form, extent and manner of use of individual tools would have varied between individuals, and probably over time.

It also seems that promises of terminal provisions followed fashions. Cloaks, for example, which were unrelated to the nature of work, were promised in at least a dozen different occupations, but were much more common in some years than others. While cloaks were promised during six decades, 40 per cent of these were promised in the 1630s with 16 per cent in 1637 alone. Similarly, the amount of terminal cash promised was typically zero in some years, while at other times most apprentices were to expect some. The amount was unrelated to the extent of any other provision, and does not seem generally to be related to the occupation.

It might be thought that tools were often purchased, especially by traders such as butchers who tended to receive larger sums of money at the end of their training. However, no-one was described as a 'toolmaker' in an apprenticeship contract, will or inventory – there seems to have been no such specialised trade in sixteenth- or early seventeenth-century Oxfordshire. The earliest that such a specialism is explicit is 1713/14 when Henry Newell senior of Cookley, Swyncombe bequeathed to his son Henry 'all and singular my working tools and implements belonging to the said trade of an edge tool maker'.⁵⁸ Earlier, it is likely that smiths and cutlers made the iron components of knives, chisels and gouges, and the user would make and fit a handle, as is sometimes done today, especially for knives. Unfortunately no inventory of a smith or blacksmith within the period has been found that is sufficiently detailed to confirm that they made such items as chisels and plane blades – the tools that are mentioned in their inventories are types that would have been used for their own work, rather than sold to woodworkers.⁵⁹

Perusal of numerous probate inventories of merchants, mercers, grocers, cutlers, chapmen, chandlers, ironmongers and smiths (including one 'scythe maker', though no 'bladesmith' as found in Tudor York) shows they stocked a highly diverse range of goods, but has produced very limited evidence of tools or components of them being made, stocked or traded. However, the inventory of Humphrey Smith of St Thomas, Oxford includes three pairs of scissors, three pairs of sheep shears, and six shoemaker's knives.⁶⁰ He was described as a nail seller, but it is possible that he made and sold these tools as well as perhaps making (as well as supplying) nails. And in parallel to the way that some musicians first undertake minor repairs on instruments then later start making them, joiners and carpenters may have acquired the skills to make some of the metal-bladed tools they needed.

Cutlers routinely made and sold table knives and bladed weapons such as daggers and swords. They surely had the skills to make steel woodwork tools, yet such items do not feature among detailed inventories of their possessions. Most of the stock in the shop of the Oxford cutler John Ryme was miscellaneous ironmongery but it is just possible that the 'three vices and shop-tools' were for sale as most of his other manufacturing equipment ('one pair of bellows, one anvil, four hammers, three pairs of tongues to the forge and two iron wedges... one grind stone, with the appurtenances belonging thereunto') were in his cellar. He may also have used the glasier (polishing wheel) and the 'firbing-beam' (presumably a device for

⁵⁶ OHC, A.5.3, f. 42v.

⁵⁷ Ibid. L.5.1, f. 229 (1613).

⁵⁸ Ibid. MS Wills Oxon, 48/3/8. A similar formula had been used in 1558 by Robert Alflette, smith, of Burford: 'all and singular my tools that I work with': *ibid.* 181, f. 283.

⁵⁹ Later (1707) chisels and knives were among the stock 'in the shop' of John May, ironmonger of Bicester: *ibid.* 141/3/16.

⁶⁰ Ibid. 173/3/15 (1624).

furbishing metal goods while making them, or preparing old ones for sale). It should be noted that he had six augers, which are common as a woodworker's tool. They could possibly have been used in the cutler's trade for making holes to attach wooden handles to knives, but there is no evidence to confirm whether he used them, made them or simply sold them. Nothing similar appears in other Oxfordshire cutlers' inventories.

Some very extensive inventories of mercers survive, who might have been another source of tools. The inventories include a wide range of fabrics, spices and household goods, but no unambiguous woodwork tools. However, in the inventory of William Clarke of All Saints, Oxford,⁶¹ one item was a group of brass objects: 'brass compasses and brass buttons and cittern wire',⁶² and compasses also appear in the inventory of the aforementioned John Ryme, but compasses have uses other than for woodwork.

It is possible that tools were made to order, rather than being kept as stock, but the apprenticeship contracts suggest types were standardised, so it would be efficient for them to be made in batches and kept in anticipation of need. It also remains possible that Oxford woodworkers principally bought their tools at the regular markets or at fairs such as St Frideswide's,⁶³ or from other cities, or from travelling salesmen. That there was an international trade in tools is indicated by the existence of customs rates for their import and export, and is confirmed by the presence of tools in the cargo lists of ships.⁶⁴ Items rated for customs duty reveal some equipment not seen in apprenticeship contracts, wills or inventories including emery stone, which could potentially be used for finishing wood or for sharpening tools, and whetstones for sharpening.⁶⁵ Exactly how Oxford woodworkers acquired such imported items, if they did, is unknown.

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⁶¹ Ibid. 11/4/7 (1612). This long inventory lists over 300 items of stock.

⁶² The cittern (here spelt 'sytterne') is a metal-strung plucked musical instrument.

⁶³ Though no likely tool vendors are noticed in the markets and fairs reported in *VCH Oxon.* 4, pp. 305–12.

⁶⁴ Among many examples reported in B. Dietz (ed.), *The Port and Trade of Early Elizabethan London*, London Record Society, 8 (1972), the cargo of the *John* of London included: 18 dozen pincers, 6 gross carving tools, 13,000 awl blades, 4 dozen planing irons, 3 gross goldsmith's files and 2 gross joiner's tools.

⁶⁵ [Commissioners of Customs, London Custom House], *The Rates of the Custome House bothe Inwarde and Outwarde...* (1582).

