Medieval Arrowheads from Oxfordshire

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SUMMARY

The main evidence for civilian archery in medieval England is documentary, but this can be supplemented by the physical evidence of arrowheads. These are found in most large collections of artefacts in England, and, although they are catalogued and described, their contribution to an account of how archery was practised by English people in the Middle Ages is rarely analysed. This article examines the medieval arrowheads held by the Oxfordshire County Museums Service to see what can be learnt about the practice of archery in the county. The practical experience of modern archers using the traditional English longbow is brought to bear on the discussion.

The story of archery in medieval England is often recounted in terms of outlaws, such as Robin Hood, and military successes in great battles, such as Crécy and Agincourt. The skills of the English (and Welsh) military archers had great significance in the history of Western Europe for about two and a half centuries. Such archers became an established part of a mythical history of England: for example, the Arthur Machen story 'The Bowmen', published in September 1914, in which longbowmen help soldiers of the British Expeditionary Force, or the propaganda elements in Laurence Olivier's film of *Henry V*, released in 1944. These military skills depended on and grew out of the practice of archery by the people of England and Wales in the Middle Ages. The importance of archery skills to the national security of medieval England is demonstrated in a series of royal proclamations and statutes. The earliest was in 1363, when Edward III ordered all the sheriffs in the kingdom to make proclamations that

> every able bodied man on feast days when he has leisure shall in his sports use bows and arrows, pellets and bolts, and shall learn and practise the art of shooting, forbidding all and singular on pain of imprisonment to attend or meddle with hurling of stones, loggats or quoits, handball, football, club ball, cambuc, cock fighting or other vain games of no value.[1]

In 1388/9 Richard II agreed a statute encouraging servants and labourers to practise archery instead of 'importunate games'.[2] Henry IV reaffirmed his predecessor's statute in 1410, when he accepted a petition made by the Commons in Parliament that all servants and labourers were to have bows and arrows and use them on Sundays and feast days instead of playing other games.[3] It was not until 1477, the reign of Edward IV, that another statute was deemed necessary.[4] Later in the same reign, however, the concern was that the cost of bows and arrows was preventing men from practising, so another statute was passed which attempted to control prices.[5] Henry VIII issued a statute in 1511 which combined both approaches, controlling equipment prices and reinforcing the legal duty to practise archery. Justices of the Peace were even given the power to 'take, arraign and appoint bowyers in 3, 2 or more places by their discretion in every shire, city and borough … to inhabit and make long bows … to serve the commonality for the due exercise

1 *CCR 1363*, pp. 534–5.

2 12 Richard II, c. 6: *Statutes of the Realm*, 2 (London, 1816), p. 57. For discussion on archery legislation see Richard Wadge, *Arrowstorm: the World of the Archer in the Hundred Years War* (Stroud, 2007).

3 *Rotuli parliamentorum*, 7 vols (London, 1767–77), 3, p. 643.

4 17 Edward IV, c. 4: *Rotuli parliamentorum*, 6, p. 156.

5 22 Edward IV, c. 4: *Statutes of the Realm*, 2, pp. 472–3.

of shooting'.[6] Towards the end of his reign, in 1542, Henry issued another statute which, like its predecessor, attempted both to enforce archery practice and to ensure the supply of bows and arrows.[7]

But archery was not practised for war alone, for hunting with the bow was widespread in England, and many seem to have shot just for sport. While hunting was controlled by harsh forest laws, this did not stop people, including monks, clergy, and, if medieval illustrators are to be believed, some women hunting with bows. In the late 1380s Gaston Phoebus, Count of Foix, wrote in his celebrated *Livre de Chasse* (*Book of Hunting*) that he knew 'little of hunting with the bow [although he provides a very good description of a hunting longbow]; if you want to know more, you best go to England where it is a way of life.'[8]

Arrowheads are the only artefacts relating to popular archery found in England and Wales. They provide a physical record which adds to the evidence found in court records, wills, and other written records. They are found in most large collections of medieval artefacts in England, and, while they are catalogued and described, their contribution to an account of civilian archery in the Middle Ages is rarely analysed. However, the insights they can provide are often limited by the circumstances in which they have been found. Relatively few come from a datable context as part of an adequately recorded archaeological excavation; many of the others have been found by chance in fields and gardens. But even these chance finds can give valuable insights into the types of archery practised by the people, and in some cases hints of the financial status of the archers themselves or that of their immediate employers. What follows is an attempt to analyse the arrowheads in the Oxfordshire public collections to see what can be learnt about the practice of archery in the county in the Middle Ages.

Oliver Jessop has proposed a typology and outline chronology for medieval arrowheads based largely on their likely use.[9] To do this, he studied securely stratified finds as far as possible, all of which came from England, Wales, and Scotland. This led him to propose four categories: tanged, military (= M in Table 1 below), hunting (= H), and multi-purpose (= MP) (these last three are for socketed arrowheads), which between them contain twenty-eight different types of arrowhead. Although complicated, and despite having some limitations, this typology has been widely accepted and is adopted here.

The chronology shows that the tanged types are earlier than the socketed types and appear to have become obsolete in England and Wales by the Norman Conquest or soon after. There is no reason to believe that this development was a result of the Conquest. No tanged arrowheads are discussed in this paper, since the purpose is to discuss the practice of archery in post-Conquest Oxfordshire, concentrating on the thirteenth to fifteenth centuries, when English military archery became renowned.

The categories within the typology demonstrate that it is easier to classify arrowheads fully developed for a specialist use than it is to categorize those heads in general popular use, which in some cases may represent evolutionary stages in the development of the more specialized heads. Assigning a particular arrowhead to one of these types is complicated by three factors. Firstly, examples of arrowheads of a particular type often vary in size. Secondly, there is an evolutionary process going on in the development of the designs of arrowheads, and, thirdly, different craftsmen made similar heads slightly differently. One might use a longer socket, for example, while another might make broader barbs or curve them slightly inwards or outwards.

Nearly all the surviving examples of medieval arrows come from the *Mary Rose*, which sank in 1545. These represent a specialized collection in that they are all war arrows, designed to be shot from heavy war bows of between about 100 lb and 170 lb draw weight. The bows in the largest

6 3 Henry VIII, c. 3: *Statutes of the Realm*, 3 (London, 1817), pp. 25–6.
7 33 Henry VIII, c. 9: ibid., pp. 837–44.
8 Gaston III Phoebus, Count of Foix, *Livre de Chasse*, ed. Gunnar Tilander (Karlshamn, 1971), pp. 272–3.
9 Oliver Jessop, 'A new artefact typology for the study of medieval arrowheads', *MedArch*, 40 (2002), pp. 192–202.

group recovered from the *Mary Rose* have been calculated to have draw weights of between 150 and 160 lb.[10] Modern replicas made of Italian yew, as the originals would have been, to the same dimensions as the *Mary Rose* bows have similar draw weights. From the point of view of this study, these arrows are tantalizing, since none of the heads has survived in a condition that allows confident identification of the type of head, although they do allow the choice to be narrowed down to two or three types. However, excavations at Camber Castle, Rye, uncovered forty-nine arrowheads for certain (three items are of uncertain identification) from around the time that the *Mary Rose* went down.[11] Of these, forty-eight are of one military type which is discussed below. But the *Mary Rose* arrows are invaluable, because they have enabled us to get an accurate idea of the dimensions of the arrowshafts. The majority of them were between 71 and 76 cm long, with an average diameter of 12 to 13 mm.[12] The average diameter of the sockets of the Camber Castle heads is 12.6 mm. The diameter is significant, since it suggests that when medieval arrowheads have a socket diameter of around 12 to 13 mm we should consider the likelihood of them being used by someone capable of shooting the military weight bows of the time. But it does not mean that the arrow was either designed for military purpose or being used in war. However, a word of caution is necessary: arrowheads with this same socket diameter were also developed for use with the crossbow. A possible example of these is discussed below.

Modern traditional archery, using what is now usually called the English longbow, particularly replicas of the medieval style of bow, provides practical guidance when interpreting medieval finds. All comments about modern archery relate to the use of the English longbow. Experience shows that stiffer arrows tend to fly straighter, because they are less affected by the archer's paradox. The archer's paradox describes the inevitable deviation of an arrow from the point at which it is aimed. With a longbow this is caused by the arrow having to go round the bow, although the bowstring forcing it forward is aligned near the centre line of the bow. A stiff arrow will not flex so much under the forces of being shot and so does not exacerbate this effect. However, heavy arrowheads, some examples of which will be discussed below, tend to 'soften' the spine or stiffness of an arrow and, as a result, need heavy shafts.[13] The medieval fletchers and arrowsmiths were well aware of this, since the large, heavy arrowheads have large sockets of around 12 to 13 mm, to accommodate large, stiffer shafts. Secondly, wood varies in its density and flexibility, so that in a bundle of arrow shafts made from ash or willow, such as were commonly used in the Middle Ages, the spine will vary from shaft to shaft. When making a set of 'best' arrows the fletcher will test the spine of the shafts to select those that are similar, so that the set of arrows will all react in the same way when shot. However, if the fletcher uses thicker arrow shafts, of around 12 to 13 mm diameter, all the shafts will be stiff enough to be used with a powerful bow, so selection of matching shafts is relatively unimportant, but with more slender shafts selection by stiffness would benefit the archer. In the Middle Ages, when meeting royal orders for large quantities of war arrows, it is fair to assume that the fletchers used 12 to 13 mm shafts to avoid the need for time-consuming selection. This was a simple question of time and economics. But when they were making arrows as part of their normal business, medieval fletchers made different qualities of arrow, something demonstrated in the Ordinances of the London Mistery of Fletchers, which laid down the prices of two different qualities of arrow.[14] Following on from this, it is reasonable to suggest that on grounds of cost alone the arrows used for practice and general shooting by ordinary men (and quite possibly a few women) were not made from selected shafts.

[10] Robert Hardy and Matthew Strickland, *The Great Warbow: from Hastings to the 'Mary Rose'* (Stroud, 2005), p. 17.

[11] Martin Biddle et al., *Henry VIII's Coastal Artillery Fort at Camber Castle, Rye, East Sussex* (Oxford, 2001), pp. 196–8.

[12] Hardy and Matthew, *The Great Warbow*, p. 10.

[13] Iain Bickerstaffe, *The Heritage of the Longbow* (Nottingham, 1999), p. 108.

[14] Reginald R. Sharp, ed., *Calendar of the Letter Books Preserved among the Archives of the Corporation of the City of London,* bk L (London, 1899–1912), pp. 212–13.

All medieval arrowheads from England, Wales, and Scotland are made of iron and steel. This means that it is often difficult to get precise measurements of the heads, as they would not have been in their original state because of the oxidization characteristics of ferrous metals. The smelting of iron and the creation of steel was hard, time-consuming manual work in the Middle Ages, which led people to be careful in their use of metal. The purpose of arrowheads meant that they were at risk of being lost each time they were used, so that to keep the cost down arrowsmiths and blacksmiths used as little metal as possible to make an effective head. Large arrowheads were expensive, and when they are found they are probably evidence of archery by members of the higher tiers of society or their employees. For example, the inventory made on the death of John, Duke of Bedford, in 1435 of the equipment in Rouen Castle values sheaves (twenty-four arrows) of barbed arrows at about two-and-a-half times the value of ordinary war arrows.[15] The use of steel in arrowheads is outlined below in the discussion of military arrowheads.

ARROWHEADS FOUND IN OXFORDSHIRE

TABLE 1. ARROWHEADS FOUND IN OXFORDSHIRE AND HELD IN PUBLIC COLLECTIONS[16]

	Description	**Jessop type and date span**
Military Types		
Harding's Field, Chalgrove (Barentin's Manor) phase 4, late 14th – early 15th c.[17] OXCMS: 1986.188. sf 344 (Fig. 1) OXCMS: 1986.188. sf 462	sf 344, very corroded and fragile, but recorded as 154 mm long, despite probable missing tip. Internal socket diameter *c.*11 mm, point seems to have tapered to *c.*4 mm square. sf 462 also incomplete, probably shorter, recorded as 127 mm	M7, 11th–14th c.
Harding's Field, Chalgrove (Barentin's Manor) phase 5, mid- to late 15th c. OXCMS: 1986.188. sf 52 (Fig. 2)	Contrast to previous example, relatively short head. Fairly complete, *c.*43 mm long. Robust, with pinched diamond cross section. Internal socket diameter at least 12 mm	M3, late medieval period
Middleton Stoney OXCMS: 1976.30. sf 368	More corroded than previous example, probably similar dimensions	M3, late medieval period
Harding's Field, Chalgrove (Barentin's Manor) OXCMS: 1986.188. sf 338	Much corroded, robust socket with heavy short barbs curving back along socket (?). Difficult to measure socket diameter, due to corrosion. 10 mm remains, so complete socket sufficient to take robust shaft	M4, 14th c.
St Aldate's, Oxford , early 15th c., probably 1400–20.[18] OXCMS: 1975.28.259.sf 624. (Plate 1)	Better condition than previous example. Relatively long socket, internal diameter *c.*10 mm	M4, 14th c.

[15] Joseph Stevenson, ed., *Letters and Papers Illustrative of the Wars of the English in France in the Reign of King Henry VI*, 2, pt 2 (London, 1864), p. 572.

[16] OXCMS numbers are included since they are the only identifiers for the heads. Temporary display numbers have not been used.

[17] See Philip Page, Kate Atherton, and Alan Hardy, *Barentin's Manor: Excavations of the Moated Manor at Harding's Field, Chalgrove, Oxfordshire, 1976–9* (Oxford, 2005).

[18] Brian Durham, 'Archaeological investigations in St Aldate's Oxford', *Oxoniensia,* 42 (1977), pp. 83–204; see p. 196 for summary of find location.

Ascott-under-Wychwood[19] OXCMS: 1976.217.M20	This socket and next 2 examples relatively long, extending back behind tips of swept-back barbs. Internal diameter *c.*8 mm. Pierced to allow use of retaining pin	M4, 14th c.
Ascott-under-Wychwood OXCMS: 1976.217.M10	Socket head corroded and damaged, probably extended back behind tips of swept-back barbs. Diameter now *c.*6 mm, originally larger (?)	M4, 14th c.
Banbury (?) OXCMS: 1964.2140 (Fig. 3)	Similar size to OXCMS: 1976.217.M20. Internal diameter *c.*8 mm. Pierced for retaining pin	M4, 14th c.
Hunting Types		
Blenheim Park, Woodstock OXCMS: 1964.5900 (Plate 2)	Type often called forker because barbs sweep forward from socket, rather than back beside it. This and next example similar size. Diameter *c.*11 mm. Pierced for retaining pins	H2, late 14th c. +
Ashmolean collection OXCMS: 1964.5904	More corroded than previous example	H2, late 14th c.+
Blenheim Park, Woodstock OXCMS: 1964.802 (Plate 3)	Large head with long broad barbs and flattened diamond section	H3, 13th c.
Banbury OXCMS: 1964.2139	Large type, with long barbs, between which socket extends to form pronounced spine to head. Despite corrosion, internal diameter *c.*12 mm	H4, 14th c.+
Charlbury (?) OXCMS: 1974.8.8 (Plate 4)	Best-preserved example of type, *c.*96 mm long. Internal diameter 12 mm	H4. 14th c.+
Hanwell OXCMS: 1975 22.sf 5	More corroded than other examples. Diameter *c.*12 mm	H4, 14th c.+
Middleton Stoney. OXCMS: 1976.30.sf 3	Similar to small H3, with extended barbs and flat diamond cross section. Diameter 6–7 mm	H3, 13th c. but could be MP8 (see below)
Multi-purpose Types		
Stonesfield OXCMS: 1964.5626	Pronounced spine but barbs form triangular head, with slightly swept-back barbs – more apparent than in other examples. Largest of type. Diameter *c.*12 mm	MP8, mid-13th c.
Crawley, in the river Windrush OXCMS: 1964.5628 (Plate 5)	Pronounced spine but barbs form a triangular head, with slightly swept-back barbs. Diameter *c.*10–11 mm	MP8, mid-13th c.
Harding's Field, Chalgrove (Barentin's Manor) OXCMS: 1986.188.sf 207	Similar to previous example. Corroded. Diameter *c.*10–11 mm	MP8, mid-13th c.
No recorded find location OXCMS: 1964.5906	Similar to previous examples. Diameter *c.*10–11 mm	MP8, mid-13th c.

[19] For information about OXCMS 1976.217.M20 and M10, see Don Benson, Alasdair Whittle, et al., eds, *Building Memories; the Neolithic Cotswold Long Barrow at Ascott-under-Wychwood, Oxfordshire* (Oxford, 2007), p. 325.

No recorded find location OXCMS: 1964.5907	Unusually long socket, making up about half total length, *c.*72 mm. Corroded, diameter probably *c.*10–11 mm	MP8, mid-13th c. (large for this type – poss. socketed MP1 11th–15th c.?)
Hensington. OXCMS: 1975. 221.1	Relatively long socket. Diameter 8–9 mm, neat barbs lying close to shaft	MP8, mid-13th c.
Eynsham Abbey OXCMS: 1995.342. sf 1240 (Fig. 4)	Has triangular blade attached to long socket	MP5, 11th c.
Wallingford OXCMS: 1995.51.sf 2 (Fig. 5)	Small arrow head, with triangular head of almost diamond section attached to long socket. Diameter *c.*6 mm	MP2, 11th–14th c.
Greatworth, Northants. OXCMS: 1964.1384 (Fig. 6)	Point and most of one barb missing, *c.*75 mm long. Long socket (*c.*43 mm of surviving length). Diameter *c.*11 mm	MP1, 11th–15th c.
No recorded find location OXCMS: 1964.5901 (Fig. 7)	Very corroded, leaf-shaped head. Socket too corroded for accurate measurement. Diameter *c.* 8–9 mm	MP4, mid-13th c.
Witney OXCMS: 1985.50.sf 5	Diamond-shaped head with flattened diamond section at socket end. Socket corroded, but diameter at least 8mm making up about half original total length. *c.*60 mm long	MP4, mid-13th c.
Woodstock OXCMS: 1983.133.2, OXCMS: 1964.5899 OXCMS: 1983.133.1 (Plate 6)	All large, differing markedly from other large barbed hunting heads: flat cross sections and no clear spines. 2 resemble MP8 type, but lack spines and are very large for type, OXCMS: 1983.133.1 is *c.*125 mm long in present condition, twice as long as normal for type (Plate 6). Sockets of all corroded, but small, 8–9 mm external diameter, which would not allow them to be fitted to sufficiently robust arrow shaft. All 3 have a shank between barbs and socket proper, roughly squared in section – unusual. None of them robust for size, compared with other examples. Functional arrowheads or just for display?	
Practice Types		
Harding's Field, Chalgrove (Barentin's Manor) found in phase 5, mid- late 15th c. OXCMS: 1986.188.sf 11 (Fig. 8)	Cone shaped coming to rounded point, like well-finished socket for arrowhead. Diameter *c.*9 mm	MP9, 15th c. +

Military Arrowheads

While all arrowheads could be used in war, some types were made especially for it. Arrowheads from three of these military types, M7, M4, and M3, in chronological order, have been found in Oxfordshire. The earliest specialized military heads are the two examples of the M7 type, found at Barentin's Manor, Chalgrove (see Fig. 1). This type is thought to have developed to counter body armour used before the fourteenth century, when plate armour became more commonly used. This earlier armour consisted of chain mail, worn over a heavily padded coat, with some plates protecting arms and legs, and a substantial closed helmet. The long needle-like heads would be likely to force their way through individual rings of chain mail and carry on through the padded coat. The larger example would have been heavy and would have had a large enough socket to take

Fig. 1. M7 found at Barentin's Manor, Chalgrove. 154 mm. OXCMS: 1986.188.sf 344. (From Philip Page, Kate Atherton, and Alan Hardy, *Barentin's Manor: Excavations of the Moated Manor at Harding's Field, Chalgrove, Oxfordshire, 1976–9* (Oxford, 2005), p. 102. (*By kind permission of Oxford Archaeology.*)

a heavy shaft, sufficient to stand being shot from a heavy bow (that is, over 100 lb draw weight). These heads, which required a proportionately large amount of iron when compared with later military types, seem to have been abandoned rapidly when the wearing of plate armour on the body became common, because they were ineffective against it. The phase of the excavation at Barentin's Manor in which these were found might suggest that they had become scrap which was lost before reuse.

The examples of the M4 type found at Barentin's Manor and at St Aldate's (see Plate 1) have sockets which appear to have had an internal diameter of 10 mm at least, big enough for potential military use. The layer where the latter example was found dates to the first half of the fifteenth century. The arrowhead was with a few other small finds, such as belt fittings, all of which had been trodden into the floor of a room that had '… an industrial or commercial function rather than [being] a dwelling'.[20] This suggests that the finds should be considered to be casual losses or deliberate discards, the arrowhead being almost certainly deposited as a head not attached to an arrow shaft. By the first half of the fifteenth century this type of head was probably being superseded by the M3 type (see Fig. 2) discussed below.

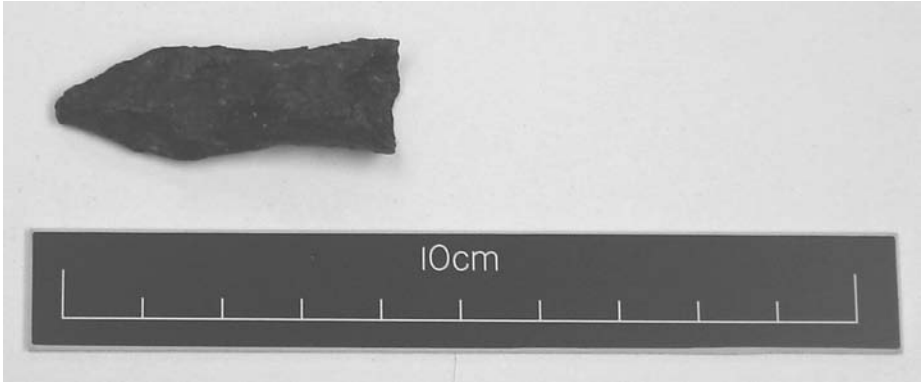

Fig. 2. Jessop M3 found at Barentin's Manor, Chalgrove, 1976–9. Length 154 mm. OXCMS: 1986.188.sf 52. (*Photograph by author.*)

A number of smaller examples of the M4 type have also been found (see Fig. 3). Their smaller size makes it less likely that they were made for military use, since none of them could have been fitted with shafts adequate to take the power of a war bow, even if such bows were somewhat less powerful in the fourteenth century than those dating to the mid-sixteenth century found on the *Mary Rose*. We have no archaeological evidence of the size and shape of English and Welsh war bows in the fourteenth century, although there are English manuscript illustrations from the

[20] Durham, 'St Aldate's, Oxford', p. 196.

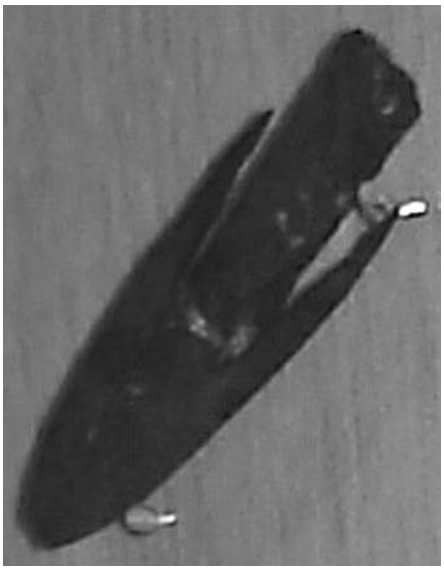

Fig. 3. Small Jessop M4, possibly found at Banbury (Brackstone Collection). OXCMS: 1964.2140. (*Photograph by author.*)

early fourteenth century showing men using bows as long as themselves.[21] While the bows were clearly powerful, given the devastation they wrought, it is reasonable to suggest that the war bow increased in both power and efficiency in the years it dominated English military practice. As a result, the bows from the *Mary Rose* may represent the English war bow in its most developed form. A complete bow and fragments of several others dating to between the mid-twelfth and mid-thirteenth century have been found in excavations at Waterford, Ireland.[22] The complete bow is only about 1.25 m in length, whereas the *Mary Rose* bows range from about 1.66 to about 1.85 m. Gaston Phoebus in his *Livre de Chasse* recommends a bow of '20 hands' in length for hunting,[23] that is, between about 1.8 and 2 m long. Halpin considers the Waterford bow to be a war bow, probably associated with the Anglo-Norman forces active in Ireland in the twelfth to thirteenth centuries. He emphasizes that the Waterford bow should not be taken as evidence of a 'short bow' type which developed into a 'longbow' type, as has been proposed by earlier military historians. He makes the point that the length of a war bow at this time would depend on circumstances such as availability of staves.[24] The term longbow first appears in English records in the mid-fifteenth century; before that date the term bow was used.

Modern longbow archers tend not to shoot 8 to 9 mm shafts from bows with a draw weight of much more than 80 lb, although ash shafts of this size, which would work in bows of up to 100 lb draw weight, can often be found. Even bows of this greater weight would be unlikely to have the effect that the English and Welsh bows had at Crécy and Poitiers. These smaller examples are discussed in the section on hunting below.

The military status of the M4 heads would be confirmed if under examination the tip and cutting edges of any prove to have been steeled. In the later fourteenth century royal orders for arrows emphasized that the arrows should be fitted with arrowheads that were made in part at

21 Examples from the Queen Mary Psalter and the Smithfield Decretals are shown in Wadge, *Arrowstorm*, illus. 6, 7, between pp. 128–9. The Luttrell Psalter includes two more, fols 56r, 147v.

22 Andrew Halpin, ' Military archery in medieval Ireland: archaeology and history', in Guy de Boe, ed., *Military Studies in Medieval Europe: Papers of the Medieval Europe Brugge 1997 Conference. Instituut voor het Archeologisch Patrimonium* (Zellik, 1997), pp. 51–60.

23 Gaston Phoebus, *Livre de Chasse,* pp. 269–70.

24 Halpin, ' Military archery', pp. 56–7.

least of steel. Those issued to the sheriffs in 1368 were particularly specific, stating that the arrows 'be fitted with steel heads to the pattern of the iron head which shall be delivered to him on the king's behalf'.[25] Steel was more expensive than iron in both the smith's time and skill and in cost, if imported, so it is less likely to have been used in heads bought by the mass of the population for general use.

Finally, there are two examples of the M3 type (see Fig. 2). These heads were often made of steel, since they were designed to punch through plate armour. The large socket allows a robust shaft and reflects the power of the late medieval war bow, as evidenced by the *Mary Rose* finds. These militarily efficient heads used less metal compared with other heads and would be relatively quick to make. This design of head arose out of practical experience during the later stages of the Hundred Years War and the need for military arrowheads to be efficiently mass produced to meet demand for large numbers, particularly from royal orders. Heads of this type have been found in some late medieval military contexts, most notably on the battlefield at Towton (1461), in Yorkshire.[26] The arrowheads from Camber Castle are very similar, although they are a little later, dating perhaps from the 1540s or 1550s. Most of the examples from there are slightly simpler in form, with the actual head being less cruciform than the Oxfordshire heads. This could make the heads quicker to produce, without compromising their effectiveness, particularly if they were steeled.

Hunting and General Purpose Arrowheads

Nearly half of the arrowheads found in Oxfordshire which have a firm find location have come from fairly random, rural locations, rather than being found on medieval urban or domestic sites. This could have resulted from redundant arrowheads being swept out in the rubbish, but is perhaps more likely to have resulted from the heads being lost in use while hunting or possibly practising. As a result, most of the remaining finds from the county could be thought of as being used in recreational shooting, particularly hunting, and so are considered in this section, regardless of which category of the typology they fall within. Those arrowheads designated as hunting types tend to be large and almost exaggerated and so probably reflect use by wealthier members of society or professionals, such as foresters and parkers. Arrowheads used by the population at large for hunting tend to be smaller, and are often categorized as multi-purpose.

Two examples of the H2 type have been found in Oxfordshire, and are perhaps the oddest looking English hunting heads. One of them was found at Woodstock (see Plate 2). Both heads could have been shot from substantial bows as part of arrows made for repeated use, since they are pierced for retaining pins. The purpose of these heads was almost certainly for shooting birds, particularly large water birds, although they could also have been used for small game like rabbits. A more fanciful suggestion for the design of these heads is that they were used at sea for cutting rigging. While it has proved possible to cut ropes under tension with these heads, the practical likelihood of doing so from a moving ship, given the tendency of these heads to spin slowly, is extremely small. Rabbits, hares, and other animals were also hunted with blunt-headed arrows.

A major problem when hunting birds, even large birds, and small game using arrows fitted with small sharply pointed heads like those discussed below, is that the arrow might pass partially through the game without knocking it down, although the arrow shaft might deliver the fatal blow. Pictures have appeared in the national and local press of large waterbirds, such as swans and geese, with pointed crossbow shafts stuck in them, but they were still able to feed, if not to fly. Secondly, arrows with sharply pointed heads are much easier to lose, since they go deeply into brush or can bury themselves in a grassy surface. These big crescent heads would be less likely to do either, because the head would catch on the brush or the ground, leaving the arrow lying on

[25] *CCR 1368,* p. 414.

[26] Personal communication from Mark Stretton. The Battle of Towton (1461) was the bloodiest battle in the Wars of the Roses, and began with an archery 'duel'.

the surface. Since these heads could be fitted with retaining pins, it was more likely that the arrow would be recovered complete and ready for reuse.

This type of head was used on both longbow arrows and crossbow bolts, whereas the other types of head found in Oxfordshire are almost certainly heads for longbow arrows. Payne–Gallwey suggests that crossbow bolts need to be about 12 to 13 mm in diameter to be effective and includes this shape of head in his illustrations of different bolts.[27] These examples are big enough to have been used with either type of bow. If they were heads for crossbow bolts, then they would have been used by wealthier archers, since crossbows were relatively expensive.

When people think of hunting with bows and arrows they tend to envisage the use of heads with large barbs. Examples of both types of these large heads, H3 and H4, have been found in the county (see Plates 3 and 4). These were used against large game, mostly deer, in England, although boar could still be found in this period in the north of the country. Heavy shafts were necessary to cope with the weight of the head, which in turn meant that the archer would need to use a heavy bow for these arrows to be effective. Because of this, and the relative expense of these heads, it seems almost certain that these were used by 'professional' archers, such as foresters, parkers, or huntsmen in the employment of the gentry or nobility, or by the nobility themselves. When hunting large game, medieval archers used these large arrowheads because they did not necessarily expect to drop the animal with one arrow. They were designed to do as much damage as possible and ensure that the animal left a clear trail of blood when it ran. For use in forest and scrub these large heads shared an advantage with the crescent-shaped H2 heads mentioned above: that is, they would be less likely to bury themselves in the undergrowth.

But not all examples of extravagantly barbed types were large. A small version, with an internal socket dimension of 6 to 7 mm, has been found at Middleton Stoney. While this could be a type MP8 (see below), it is more like a small H3, with its extended barbs and flat diamond cross section. Since this head could be used only with a light bow, it is quite possible that it was made especially for a woman or a child to use in hunting, copying the look of the arrowheads used by the men. If this were the case, it must have been made at the behest of someone wealthy enough to order such small luxuries, rather than someone who just needed an arrowhead to hunt with.

More examples of the MP8 head are held in the county collections than any other type (see Plate 5). While this is a very practical design of head in its own right, some examples could be viewed as something of a transitional form between earlier, more triangular barbed heads and the big sweeping barbed heads of types H3 and H4 (see Plates 3 and 4). The sockets of four of the examples of this type are sufficient to take a fairly robust shaft, while the Stonesfield example could be shot from a military weight bow. These heads make it possible that there were a small number of men, at least one of whom was linked to a manorial household at Chalgrove, who hunted with heavy bows outside the royal park. Although he puts this type within the broad multi-purpose category, Jessop considers that this particular type developed for hunting. A much smaller example has been found at Hensington and may represent the type and size of head that less practised bowmen in the general population might have used.

Besides the examples of the M4, two other examples were found in what is now Oxfordshire at the excavations of the Seacourt deserted village (formerly Berkshire).[28] These are similar to those found at Ascott-under-Wychwood, in that one was noticeably smaller than the other. The larger of the Ascott heads and an example found at Banbury (see Fig. 3), which is currently displayed in the County Museum at Woodstock, have sockets pierced for retaining pins, and so were probably made for owners wishing to reuse the arrow as often as possible. It is unusual to find military arrowheads that have this feature, because they were mass produced as quickly as possible with no apparent consideration of reuse. Indeed, none of the other military-type arrowheads discussed in this paper, whether found in Oxfordshire or in other places, has this feature. It is, however,

27 Ralph Payne-Gallwey, *The Book of the Crossbow* (New York and London, 1995), pp. 16–18.
28 Martin Biddle, 'The deserted village of Seacourt, Berkshire', *Oxoniensia*, 26–7 (1961–2), pp. 70–201.

possible that an example of an M4 found at Stafford Castle, Staffordshire, was pinned, but the excavator was unsure.[29] So what was the purpose of these heads? From a manufacturing point of view, they were both economical in the use of iron and fast to make, with both of the Ascott heads and at least one of the Seacourt heads having the barbs welded on to the socket. This economy might suggest that they were 'everyday' heads for the ordinary man (and woman). These people probably did not use heavy bows as a matter of course, so the heads could have been used primarily for hunting, but might also have been used in practice. The use of this type of head for hunting might reflect a different approach to hunting by the people at large when compared with that of more elite hunters outlined in the discussion of specialist hunting heads above. The M4 type presents a problem in Jessop's typology. He includes the design in the military heads, noting that it is the equivalent of the LMMC type 16. However, a number of examples of this type in Oxfordshire and beyond are found that are too small for effective military use and in locations that make it difficult to find a substantial military link. Although it can be argued that any military head found in a village was brought home by an archer returning from military service, this would not explain the small size of some of the finds. The excavators at Ascott-under-Wychwood were similarly puzzled when they described the two heads discussed here as small H3s – they are very small to be this type – but then categorize these heads as LMMC type 16.[30]

Throughout the period the hunting rights of the mass of the population were, in theory at least, severely restricted. As has been noted above, the finds of specialist hunting arrowheads are associated with higher status sites such as the royal park at Woodstock or the manor at Middleton Stoney. But the find locations of heads of MP8 type and the smaller examples of the M4 are more widespread. They may have been used by men associated with the lords of the manor. It is a mistake, however, to assume that the population at large did not hunt, despite all game including rabbits belonging to one landowner or another. As Hanawalt puts it when discussing the household economy of English medieval peasants, 'Hunting and gathering were among routine supplements of peasant households for all status groups. … Many of the items hunted and gathered were controlled by the lord, and peasants caught with them were fined.'[31] In addition to the court records, there is some evidence for peasant hunting from finds of bones from non-domesticated animals found on village sites. While these do occur in small quantities relative to the other bones found, it is likely that the finds under-represent the contribution made to the peasant diet by hunting.[32] Dyer includes a table of data from excavations of seven medieval village sites, showing that the percentage of bones from game ranged between 1 per cent and 9 per cent of the total number of animal bones found. The excavation reports, however, used different definitions of what made up game, with the two sites that produced the lowest percentage including only deer within the definition. Two explanations have been offered for this apparent scarcity. Firstly, as Dyer points out, the bones of small game such as rabbits and wild birds are less likely to have been preserved because of their fragility, a problem shared with pork bones, because many pigs would have been slaughtered young.[33] Secondly, as the records of poaching cases make clear, game animals were often butchered at or near the kill, with the bones and hide being hidden there as well, rather than butchering them in the village, which would make evidence of the crime much easier to find.[34] The uncertainty about the scale of popular hunting was highlighted by Hurst, who, after commenting on the rarity of wild animal bones found in village excavations, writes that

29 Ian R. Scott, 'The iron finds' (in Staffordshire Borough Council TS report).
30 Benson, Whittle, et al., eds, *Building Memories*, p. 325.
31 Barbara A. Hanawalt, *The Ties that Bound: Peasant Families in Medieval England* (Oxford, 1986), pp. 116–17.
32 Christopher Dyer, *Standards of Living in the Later Middle Ages* (Cambridge, 1989), p. 155.
33 Ibid., p. 156.
34 Hanawalt, *Ties that Bound,* p. 53.

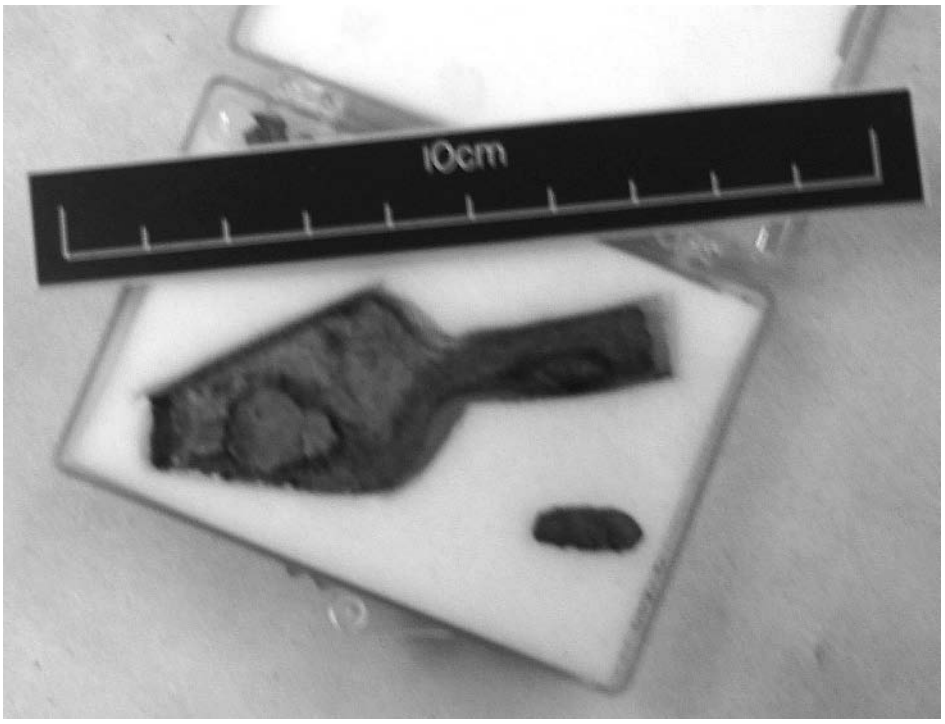

Fig. 4. MP5 found at Eynsham Abbey, 1991. Length 63 mm. OXCMS: 1995.342.sf 1240. (*Photograph by author.*)

'hunting arrows are fairly common'.[35] An example of this puzzle comes from the excavations at Seacourt. The animal bones found in the late thirteenth- to late fourteenth-century phase suggest that a minimum of three red deer and one roe deer was killed and eaten by the villagers. Four arrowheads were also found, all dating to before 1400.[36]

The regulation of hunting began to change in the fourteenth century. Roe deer were removed from the list of beasts of the forest in Edward III's reign. The contraction in the amount of land under cultivation as a consequence of the Black Death and subsequent outbreaks of plague would have increased the area available to wild animals and their hunters. By the last decades of the century people in some parts of the country found the attempts of the landlords and their agents to restrict hunting oppressive. Some groups participating in the Peasants' Revolt of 1381 demanded the right to take game in local woods and pastures.[37] But the late fourteenth and early fifteenth century also saw many lords lease out the whole or substantial parts of their manorial demesnes, which could lead to less effort being put into controlling opportunities for popular hunting.[38] It therefore seems probable that by the fifteenth century the opportunities for popular hunting were greater.

[35] Maurice Beresford and John G. Hurst, eds, *Deserted Medieval Villages: Studies* (London, 1971), p. 138. Hurst based his comments on eight excavation reports. For further references to hunting arrowheads see Eric C. Klingelhöfer, *The Deserted Medieval Village of Broadfield, Herts,* BAR 2 (1974).

[36] Biddle, 'Deserted village of Seacourt', p. 179.

[37] Christopher Dyer, *Making a Living in the Middle Ages* (London, 2003), p. 290.

[38] Ibid., p. 332, for an outline of the scale of demesne leasing.

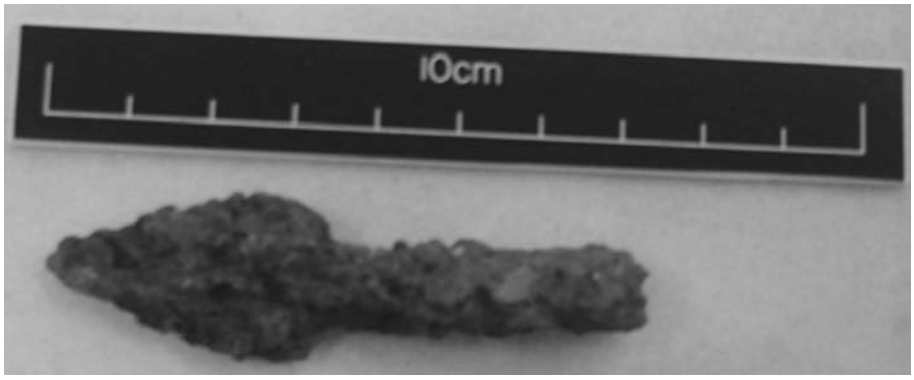

Fig. 5. Jessop MP2 found at Harris Garage, Wallingford, 1992. Length 72 mm. OXCMS: 1995.51sf2. (*Photograph by author.*)

Fig. 6. Jessop MP1 found at Greatworth, Northamptonshire. Length 27 mm. OXCMS: 1964.1384. (*Photograph by author.*)

Five other arrowheads in the county collections are examples of multi-purpose heads, representing four different types. The earliest, an MP5, comes from Eynsham Abbey (see Fig. 4). Given where it was found, it is probable that this example was used for hunting to provide food for the monks. The MP2 type, with a very small socket, from Wallingford (see Fig. 5) may have been made for a woman or a child to use with a light bow. The MP1 found at Greatworth, Northamptonshire (see Fig. 6) is a big head, with a large socket, about 11 mm, which could have been used with a heavy bow.

While one of the MP4s found has a long socket (see Fig. 7), the other one is so corroded that it is difficult to make any certain comment about it. This type would have been effective against either unarmoured men or game, but the shape may have arisen simply due to ease of manufacture.

There are three large heads displayed in the County Museum which are atypical of any type in the typology - Plate 6 is an example. Unless more precise information about the find circumstances can be uncovered, they must remain a puzzle, since, for the reasons noted in the table, it is difficult to regard them as functional medieval heads.

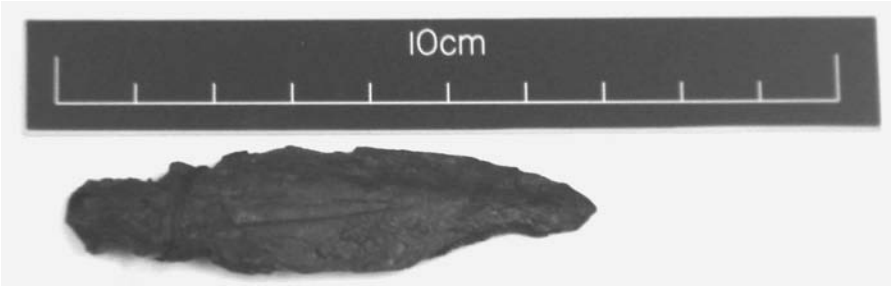

Fig. 7. Jessop MP4, found in Oxfordshire, exact location unknown. Length 70 mm. OXCMS: 1964.5901. (*Photograph by author.*)

Practice Arrowheads

The excavations at Barentin's Manor were noteworthy because of the number of specialized types of arrowhead found there. The military and hunting heads have already been discussed; the final example, an MP9 (see Fig. 8) is just as intriguing. This type is usually thought to be a practice head, probably for use with straw butts or something similar, since its shape would make recovery from such a target relatively easy.

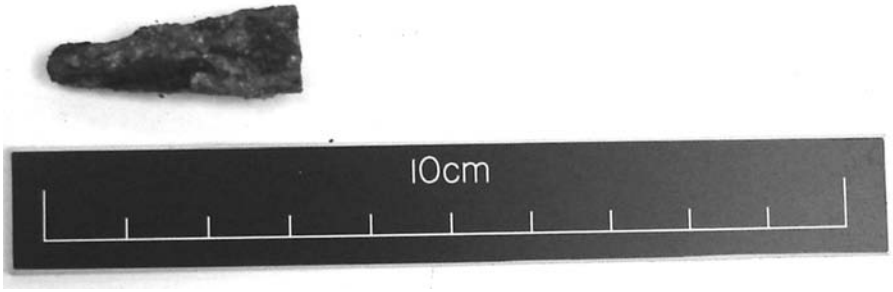

Fig. 8. MP9 found at Barentin's Manor, Chalgrove, 1976–9. Length 31 mm. OXCMS: 1986.188.sf 11. (*Photograph by author.*)

The other examples that have been found in Oxfordshire could be viewed as post-medieval; two found during the excavations of St Frideswide's monastery were from the sixteenth and seventeenth centuries.[39]

THE OXFORDSHIRE COLLECTION IN RELATION TO OTHER COLLECTIONS

Arrowheads are found on a wide range of sites, ranging from finds of one or two heads in excavations of medieval villages, such as Broadfield, to the discovery of collections of between thirty and fifty heads at city excavations like Winchester and York.[40] Unsurprisingly excavations at castle sites tend to reveal predominantly military types of arrowhead, although one or two specialized hunting heads are often found, as happened at both Camber Castle and at Stafford Castle. The collections

[39] John Blair, ed., *Saint Frideswide's Monastery at Oxford: Archaeological and Architectural Studies* (Oxford, 1990), pp. 43–4.

[40] See Martin Biddle, *Artefacts from Medieval Winchester, Object and Economy in Medieval Winchester,* Winchester Studies, 7 (Oxford, 1990), pp. 1071–3; Patrick Ottaway and Nicola Rogers, *Craft, Industry and Everyday Life: Finds from Medieval York* (York, 2002), pp. 2967–9.

from Winchester and York are more similar to the Oxfordshire collection in that military types of arrowhead do not predominate, as is the case with castle excavations. The arrowheads from these two cities have been found in a wide range of datable post-Conquest contexts and demonstrate a similar range of types to those in the Oxfordshire collection. Where the Oxfordshire collection differs from these other two collections is that over half of the Oxfordshire heads are specialist heads, 31 per cent being military and 26 per cent hunting types. York has a similar proportion of military heads, about 28 per cent, but very few specialist hunting heads, only about 9.5 per cent. While only some of the Oxfordshire specialist hunting heads discovered are known to have been associated with the royal park at Woodstock, sport at the park would have led to finds of these heads being more common. Both Winchester and York have produced more MP2, MP3, or MP5 examples, often in twelfth-and thirteenth-century contexts, than is the case in Oxfordshire, where the Eynsham Abbey head is the only securely dated example of these types (see Fig. 7). The finds at York include a sequence of military heads similar to that found in Oxfordshire, in that it starts with the tapering M6 and M7 types, followed by the M4, and then the M2, which is another robust head similar in function to the M3. Not only do finds at Winchester include fewer specialist military arrowheads than the other two collections, but they also have none of the later M2 or M3 types.

CONCLUSION

This study of arrowheads has provided evidence of two places where archery was practised by archers of greater physical prowess (and probably skill) than was to be found in the county's population at large. One is Barentin's Manor, where a sequence of three military arrowheads has been found, which represents the major types used in the fourteenth and fifteenth centuries. The Barentins did not live at Chalgrove much in these centuries, and indeed the manor stopped being lived in during the 1470s.[41] The presence of these heads suggests the possibility that a succession of men who served as military archers lived at or near the manor. Military service may have been just a part of working life for them, and there may have been only one man there at a time.[42] The presence of a substantial hunting or multi-purpose head and a practice head reinforce the possibility of the presence of skilled archers.

Not surprisingly, Woodstock is the other place. Throughout the fourteenth and fifteenth centuries the English kings frequently visited their manor at Woodstock, mainly to indulge their enthusiasm for the hunt. Although royal interest in Woodstock seems to have been less in the sixteenth century, with Henry VIII visiting infrequently, it remained a royal deer park until 1705. Throughout the period large numbers of deer were maintained in the park, so many that they had to be provided with fodder in harsh winters. While deer were the main large game, there was an attempt in the mid-fourteenth century to introduce boar.[43] The range of large, specialized hunting heads found in the park area arises from the activities of the kings, their guests, and their huntsmen and parkers. These arrows were probably used with bows of similar draw weight to the war bows of the period. While Henry VIII is often quoted as being a practised archer with the English longbow, he was not the only member of the royal family with these skills: Edward III, John of Gaunt, and Edward IV are also known to have used them.

The small group of large heads found at Stonesfield, Crawley, Barentin's Manor, and an unrecorded location fit into the multi-purpose category. They were almost certainly used for hunting, and they provide evidence of men using bows approximating to military weight in civilian life. Unlike the specialized hunting heads from Woodstock, there is no reason to believe that the men who used this group of heads were necessarily linked to the royal household. Apart

41 Page, Atherton, and Hardy, *Barentin's Manor,* p. 14.
42 See Wadge, *Arrowstorm*, for the possible structure of the working lives of English military archers in this period.
43 *VCH Oxon*, 12, pp. 436–45.

from this, there is little clear evidence of the population at large having military-weight bows in their possession, something one might expect, given the opportunities for employment of military archers in these centuries. Besides Barentin's Manor, only two heads of military type and size have been found in the county: one, from Middleton Stoney, could be evidence of someone with military experience, while the other, from St Aldate's, is far less likely to be so.

The rest of the finds from the county tend to be multi-purpose heads, suggesting a certain amount of small game-hunting, using bows lighter than the war bows of the period.

Few of the arrowheads have been found in datable locations, but the types of head found suggest that archery was more practised in the fourteenth and fifteenth centuries than at other times. This development was stimulated by the possibility of military employment and the promulgation of laws insisting on archery practice. It is difficult to draw any conclusion about how widespread archery skills were among the population of Oxfordshire. The locations of the finds suggest that archery was more commonly practised in the north and west of the county, but this seems more likely to reflect the element of chance in the recovery of medieval arrowheads than what was actually happening.

Finally, the find location and type of the arrowheads with larger sockets suggest that men did not keep bows comparable to the war bows of the period in their homes as a matter of course. The confusion over the possible use of some types of head, particularly the M4 and MP8, demonstrates the difficulties inherent in developing a typology for medieval arrowheads and the need for further study of finds which may lead to revisions in the typology.

ACKNOWLEDGEMENTS

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Plate 1. Jessop M4 found at St Aldate's, Oxford. Length 43 mm. OXCMS: 1975.28.259.sf 624. (*By kind permission of OXCMS.*) [Wadge, pp. 4, 7.]

Plate 2. Jessop H2 found at Blenheim Park, Woodstock. Length 70 mm. OXCMS: 1964.5900. (*By kind permission of OXCMS.*) [Wadge, pp. 5, 9.]

Plate 3. Jessop H3 found at Blenheim Park, Woodstock. Length 81 mm. OXCMS: 1964.802. (*Photograph by author.*) [Wadge, pp. 5, 10.]

Plate 4. Jessop H4, possibly from Charlbury (Kibble Collection). Length 90 mm. OXCMS: 1974.8.8. (*By kind permission of OXCMS.*) [Wadge, pp. 5, 10.]

Plate 5. Jessop MP8 found in the river Windrush at Crawley. Length 63 mm. OXCMS: 1964.5628. (*By kind permission of OXCMS.*) [Wadge, pp. 5, 10.]

Plate 6. Arrowhead of indeterminate type and function found at Woodstock. Length 125 mm. OXCMS: 1983.133.1. (*Photograph by author.*) [Wadge, pp. 6, 13.]