

A New Artefact Typology for the Study of Medieval Arrowheads

By OLIVER JESSOP

University of Durham

ARCHAEOLOGICALLY recovered arrowheads from the British Isles, dated to between the 10th and 16th centuries are examined. The existing arrowhead typology in the London Museum Medieval Catalogue is assessed and a new typology consisting of 28 generic forms, and subdivided into functional groups, is suggested.

The only available reference work for studying medieval arrowheads was published in 1940.¹ The intention of this paper is to renew an interest in this artefact by suggesting a new typology which takes advantage of numerous excavations undertaken during the last 55 years. The early typology is briefly discussed and then incorporated into the new typology, which is accompanied by a detailed catalogue.

THE LONDON MUSEUM MEDIEVAL CATALOGUE ARROWHEAD TYPOLOGY

The original intention of the catalogue was that it should act as a summary text book for the study of medieval finds from London.² Despite this, it has been used nationally as a primary source of reference by those involved in the interpretation of archaeological artefacts. Its author, Ward Perkins, emphasizes that the chapter describing arrowheads has only one purpose, to ‘. . . serve as a convenient basis for classification’;³ and as such it has proved very useful. However, he also stresses that it ‘. . . is not exhaustive; and may even include a few non-medieval types’.⁴ Regrettably, this crucial point is sometimes overlooked by those referring to it. Problems have occurred because certain forms of arrowhead are clearly absent,⁵ and when such examples are recovered, they are often inadvertently attributed to incorrect forms.⁶

In an attempt to give the arrowhead typology a chronological framework, arrowheads from six archaeological sites were used to provide dates.⁷ There are, however, inherent problems with the accuracy of this data. The first four sites⁸ were excavated before 1915 and their reliability is suspect, mainly due to the poor level of recording. The actual dates are obtained by dubious associations with other artefacts⁹ and from unsubstantiated stratigraphic relationships.¹⁰ The remaining

two sites¹¹ are both in Sweden, and it is perhaps unwise to accept such European examples for a typology which is devoted to British types.¹²

THE NEW ARROWHEAD TYPOLOGY

The drawbacks with the *London Museum Medieval Catalogue* arrowhead typology¹³ emphasize the need to update accepted reference works in the light of new evidence. The typology presented within this paper attempts to start this process.

Before describing the new typology, it is perhaps sensible to reconsider the role of an archaeological typology. The majority of typologies are used as a basis for reference and for subdividing varied and large artefactual groups.¹⁴ The overall intention is to identify quantitative differences between each artefact, therefore allowing comparative statements to be made. However, internal subdivisions within any typology may have no relation to divisions in antiquity. Such uncertainty can also be observed when examining technological development. For example, due to our limited knowledge of influencing factors, the most complex artefact is not necessarily the most advanced. Typologies should be evolutionary, allowing modification and amendment when new evidence becomes available. The new typology is designed in such a way that additional subgroups can be incorporated, along with new generic forms of arrowhead. Unlike the *London Museum Medieval Catalogue*, which uses actual artefacts, in this typology arrowheads with similar traits have been amalgamated and are divided into 28 generic forms (Fig. 1).¹⁵ These are further subdivided into four broad groups: Tanged, Multi-purpose, Military and Hunting, which are ascribed a likely function and date. Variation within each individual group may appear quite considerable; however, each arrowhead has the same basic characteristics and generic profile. The suggested date range is derived using stratified deposits from 23 excavated sites (Fig. 2), although it is not entirely satisfactory, and future revision will be necessary.

CATALOGUE

The catalogue describes and provides parallels for the 28 generic arrowhead forms illustrated in Fig. 1. Preceding each of the four subgroups there is a brief description of the characteristic traits of the arrowheads within it. Each catalogue entry consists of a physical description, an indication of individual function, dimensions, a list of parallels and a tentative date range or introductory date.

TANGED FORMS

The arrowheads which incorporate a tang, T₁, T₂, T₃, are predominantly from contexts dating from the 9th–10th centuries.¹⁶ Their apparent absence from later deposits may indicate that they were soon replaced when socketed forms became widespread. Two such arrowheads have been recovered from Dyserth Castle in Clwyd which have spirally twisted tangs.¹⁷ This feature can be paralleled by examples from Coppergate in York,¹⁸ and is probably functional rather than decorative, allowing the arrowhead to be screwed into a wooden shaft. Tanged

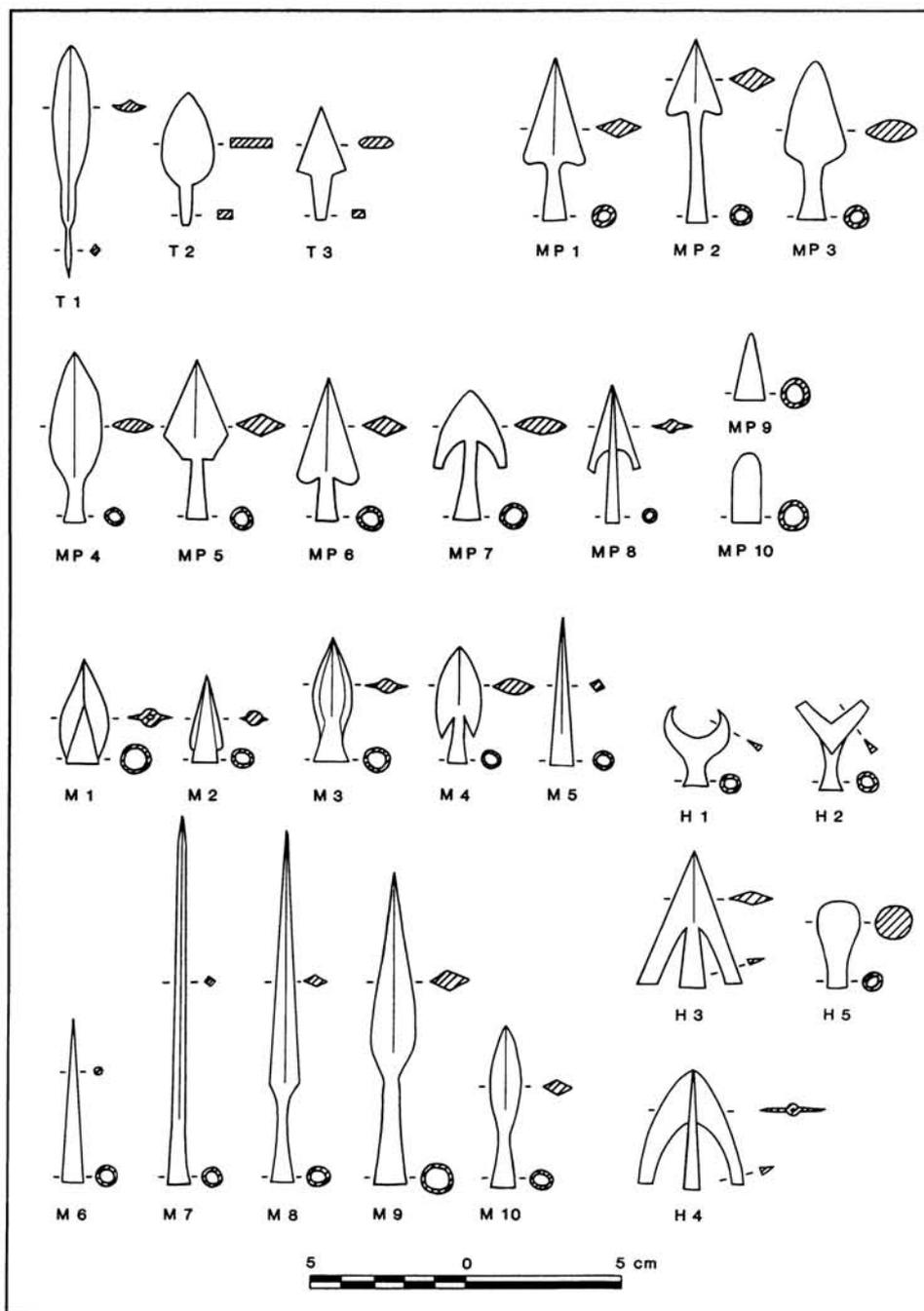
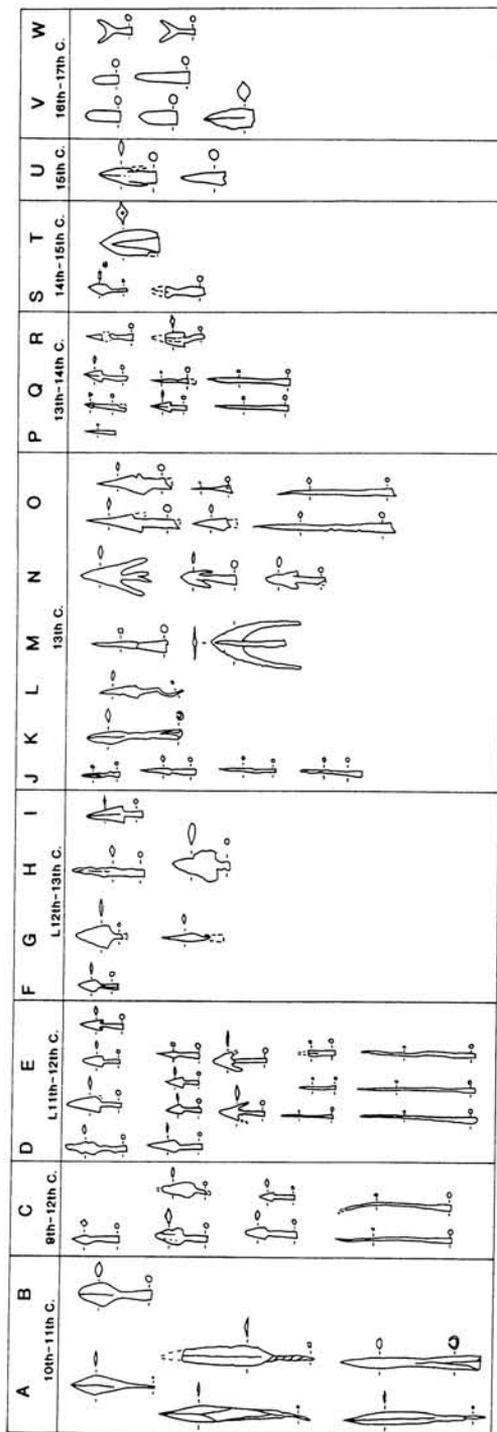


FIG. I
The new arrowhead typology



A: Coppergate B: Durham C: Goltho D: Gt. Yarmouth E: Castle Acre F: Glastonbury Tor G: Castle Acre Priory H: Llandough
 I: Castleskreen J: Castell-Y-Bere K: Red Castle L: Butcombe M: Customs House N: Christchurch O: Dyserth Castle
 P: Doonbought Q: Bramber Castle R: Seafin Castle S: Llantwit Major T: Leith U: Huish V: Free Grammar School W: Basing House

arrowheads are manufactured from a flat bar of iron, requiring less technological skill than arrowheads from the 13th-15th centuries.

Type T1: 9th-11th century.
 This form has a long, thin, leaf-shaped blade, which is triangular in cross-section. The blade forms a slight shoulder and then tapers to a narrow tang, which is diamond or circular in cross-section. Some blades have a twisted tang and low ridges on the blade.
 Function: Warfare/Hunting. Dimensions: Length 102-155 mm. Width 10-13 mm, 20-21 mm.
 Parallels/Date: Coppergate,¹⁹ 10th-11th century; Ashmolean Museum, unprovenanced.²⁰

Type T2: 11th-12th century.
 This form has a small leaf-shaped blade, with a rectangular tang.
 Function: Uncertain. Dimensions: Length 40-55 mm. Width 15-25 mm.
 Parallels/Date: Llantwit Major, 14th-15th century;²¹ Dyserth Castle, mid 13th century;²² Castle Acre Priory, 12th-13th century;²³ Butcombe, 13th century.²⁴

Type T3: 12th-13th century.
 Description: This form is a development of T2. It has a triangular-shaped blade with an oval cross-section, and a rectangular tapering tang.
 Function: Hunting/Military. Dimensions: Length 40-55 mm. Width 15-28 mm.
 Parallels/Date: Dyserth Castle, mid 13th century.²⁵

MULTI-PURPOSE FORMS

Ten forms have been categorized as multi-purpose. This

FIG. 2
 Medieval arrowhead timechart

rather general subdivision has been chosen because these forms could have been successfully employed for both hunting and warfare. However, for a few of the forms a more likely function has been suggested. All of the types within this group are socketed, thus having an advantage over the earlier tanged forms, T1–T3, in that the wooden arrowshaft is firmly encased within an iron socket, thus creating an overall stronger physical structure. Additional to this, the socket made the arrow more streamline and faster.

Types MP1–MP6 are very similar in design. All except MP4 have triangular heads which are diamond or oval in cross-section. Dr Ian Goodall suggests that the larger examples of these forms, MP2 and MP8, would have been used for hunting.²⁶ They are a clear development on the basic shape, with similar attributes to the larger and heavier broadheads, H3 and H4. The addition of a thin spine, as on MP8, would have provided greater rigidity, which was perhaps necessary for a successful multi-purpose arrowhead.

Type MP1: 11th–15th century.

This form has a triangular blade, and a diamond cross-section, with a socket. Large sizes can occur. *London Museum Medieval Catalogue*, Type 2.²⁷

Function: Hunting. Dimensions: Length 40–120 mm. Width 20–45 mm.

Parallels/Date: Winchester, 12th–14th century;²⁸ Llantrithyd;²⁹ Goltho Manor, 11th century;³⁰ Rivenhall;³¹ Castle Acre, 12th century;³² Rumney Castle;³³ Bramber Castle, 13th–14th century;³⁴ Castleskreen, late 12th–13th century.³⁵

Type MP2: 11th–14th century.

This form is similar to MP1. It has a small triangular head, diamond in cross-section and an extended socket. *London Museum Medieval Catalogue*, Type 3.³⁶

Function: Uncertain. Dimensions: Length 45–60 mm. Width 20 mm.

Parallels/Date: Goltho Manor, 11th century;³⁷ Bramber Castle, 13th–14th century;³⁸ Winchester, 13th century;³⁹ Rumney Castle;⁴⁰ Llantrithyd;⁴¹ Rivenhall;⁴² Ashmolean Museum, unprovenanced;⁴³ Salisbury;⁴⁴ Cumnor;⁴⁵ Portchester Castle, early medieval;⁴⁶ Hereford, 13th–14th century;⁴⁷ Urquhart Castle, early medieval.⁴⁸

Type MP3: 10th–16th century.

This is a very common form. It is triangular in shape, but has rounded shoulders. It is socketed, with a diamond or oval cross-section. *London Museum Medieval Catalogue*, Type 1.⁴⁹

Function: Hunting/Military. Dimensions: Length 50–70 mm. Width 20–30 mm.

Parallels/Date: Durham, 10th–11th century;⁵⁰ Castle Acre Priory, 12th–13th century;⁵¹ Glastonbury Tor, L. 12th century;⁵² Hereford, 13th–14th century;⁵³ Llantrithyd;⁵⁴ Beckery Chapel;⁵⁵ Salisbury.⁵⁶

Type MP4: mid 13th century.

This form is a thin leaf-shaped blade, diamond in cross-section, with a short socket. *London Museum Medieval Catalogue*, Type 4.⁵⁷

Function: Uncertain. Dimensions: Length 60–75 mm. Width 10–20 mm.

Parallels/Date: Winchester, mid 13th century;⁵⁸ Rayleigh Castle;⁵⁹ Portchester Castle.⁶⁰

Type MP5: late 11th century.

This form is socketed and triangular in shape; with shoulders cut off at an obtuse angle.

Function: Hunting/Military. Dimensions: Length 40–60 mm. Width 15–25 mm.

Parallels/Date: Llantrithyd;⁶¹ Great Yarmouth, late 11th–12th century;⁶² Portchester Castle, early medieval.⁶³

Type MP6: mid 12th century.

This form has a triangular blade with slight barbs curving down from the shoulders, it is socketed and diamond or oval in cross-section.

Function: Hunting/Military. Dimensions: Length 35–60 mm. Width 15–30 mm.

Parallels/Date: Loughor Castle;⁶⁴ Llandough, 12th–13th century;⁶⁵ Ashmolean Museum, unprovenanced;⁶⁶ Chester;⁶⁷ Woodperry;⁶⁸ Castle Acre, 12th century;⁶⁹ Rhuddlan Castle, 13th century;⁷⁰ Winchester, mid 13th century;⁷¹ Bramber Castle, 13th–14th century.⁷²

Type MP7: early 13th century.

This form has a barbed head which is oval or diamond in cross-section, and is socketed. There are wide variations in barb size and socket length. *London Museum Medieval Catalogue*, Type 13.⁷³

Function: Hunting/Military. Dimensions: Length 40–60 mm. Width 18–30 mm.

Parallels/Date: Christchurch, 13th century;⁷⁴ Woodperry;⁷⁵ Dyserth Castle, mid 13th century;⁷⁶ Brandon Castle;⁷⁷ Sandal Castle;⁷⁸ Lurk Lane;⁷⁹ Urquhart Castle, early medieval.⁸⁰

Type MP8: mid 13th century.

This form is similar to MP7. It has a central socketed spine with flat barbs attached, which can vary in size.

Function: Hunting. Dimensions: Length 35–50 mm. Width 15–25 mm.

Parallels/Date: Dryslwyn Castle, late 13th–14th century;⁸¹ Lurk Lane;⁸² Loughor Castle;⁸³ Beckery Chapel;⁸⁴ Rivenhall;⁸⁵ Urquhart Castle, early medieval;⁸⁶ Clough Castle;⁸⁷ Montgomery Castle, 13th century;⁸⁸ Seafin Castle.⁸⁹

The final two forms within this multi-purpose group, MP9 and MP10, may have been specifically designed for archery practice. This is emphasized by their recovery from sites such as Baile Hill in York,⁹⁰ and the Free Grammar School in Coventry.⁹¹ Their blunt shape would allow straightforward removal from an archery butt and help reduce the likelihood of serious physical wounding in the case of an accident. They can vary in size, and are occasionally mistaken for ferrules from staffs or spears.

Type MP9: 12th–15th century.

This form has a short conoidal socket. A stubby version of M6.

Function: Military/Practice. Dimensions: Length 15–35 mm. Width 7–13 mm.

Parallels/Date: Baile Hill, late medieval;⁹² Huish, 15th–16th century;⁹³ Kildrummy Castle;⁹⁴ Great Linford;⁹⁵ Lydford Castle;⁹⁶ St Augustines Abbey;⁹⁷ Sandal Castle;⁹⁸ Rivenhall;⁹⁹ Nottingham Castle, mid 16th century;¹⁰⁰ St Frideswide's Monastery;¹⁰¹ Winchester, 15th–17th century;¹⁰² Barry Village;¹⁰³ Hereford, 15th–16th century.¹⁰⁴

Type MP10: 16th century.

This form is similar to MP9. It is bullet-shaped and socketed. Occasionally decorated. *London Museum Medieval Catalogue*, Type 5.¹⁰⁵

Function: Practice. Dimensions: Length 5–30 mm. Width 6–12 mm.

Parallels/Date: Baile Hill;¹⁰⁶ Free Grammar School, mid 16th century;¹⁰⁷ Lydford Castle;¹⁰⁸ St Mary of Ospringe;¹⁰⁹ Sandal Castle;¹¹⁰ Winchester, 16th–18th century;¹¹¹ Salisbury.¹¹²

MILITARY FORMS

The ten military forms can be divided into either compact warheads or slender armour-piercing heads. The warheads M1–M4 would have been effective against early forms of armour and body protection.¹¹³

Type M1: late 14th century.

This form has a thin walled central socket, which is conoidal and has flat wings attached. It is occasionally barbed.

Function: Warhead. Dimensions: Length 25–45 mm. Width 10–20 mm.

Parallels/Date: Leith, 15th century;¹¹⁴ Carrisbrooke Castle;¹¹⁵ Pevensey Castle;¹¹⁶ Sandal Castle.¹¹⁷

Type M2: 15th century.

This form is similar to M1. It has a central conical socket with very thin wings/trails applied.

Function: Warhead. Dimensions: Length 20–35 mm. Width 10–20 mm.

Parallels/Date: Ashmolean Museum, unprovenanced;¹¹⁸ Montgomery Castle, 17th century;¹¹⁹ Pevensey Castle;¹²⁰ Salisbury.¹²¹

Type M3: late medieval.

This form has a socket which tapers to a narrow point. Inwardly curving wings have been added along its length.

Function: Warhead. Dimensions: Length 22–40 mm. Width 14–20 mm.

Parallels/Date: Sandal Castle;¹²² Urquhart Castle, late medieval;¹²³ Salisbury;¹²⁴ Pevensey Castle;¹²⁵ Woodperry.¹²⁶

Type M4: 14th century.

This form has a small compact head, with close fitting barbs. It is diamond or oval in cross-section, with a socket. *London Museum Medieval Catalogue*, Type 16.¹²⁷

Function: Warhead. Dimensions: Length 25–40 mm. Width 12–20 mm.

Parallels/Date: Huish, 15th–16th century;¹²⁸ Wadham College;¹²⁹ St Mary of Ospringe;¹³⁰ Goltho Manor;¹³¹ Salisbury;¹³² Okehampton Castle, 14th century;¹³³ Winchester, 15th century.¹³⁴

The forms which appear to have been designed for armour piercing, M5–M10, have a comparatively small cross-sectional area and a slender shape. These specific features would allow them to pass successfully right through plate armour. Forms M5 and M7 are of a surprisingly early date; examples from Goltho Manor¹³⁵ date from 1000–80 and Castle Acre¹³⁶ from the 12th century. They appear to be the forerunners of the larger types, M8, M9 and M10, which are predominantly found on castle sites.

Type M5: mid 13th century.

This form has a narrow socket, which tapers into a square sectioned point.

Function: Armour-piercing. Dimensions: Length 35–50 mm. Width 7–14 mm.

Parallels/Date: Goltho Manor;¹³⁷ Lewis Castle;¹³⁸ Dyserth Castle, mid 13th century;¹³⁹ Barry Village;¹⁴⁰ Rumney Castle;¹⁴¹ Rhuddlan Castle, 14th–15th century.¹⁴²

Type M6: 11th–14th century.

This form is long and narrow, with a conical point, and a socket.

Function: Armour-piercing. Dimensions: Length 50–70 mm. Width 7–12 mm.

Parallels/Date: Dryslwyn Castle, late 12th–14th century;¹⁴³ Castle Acre, 12th century;¹⁴⁴ Llantithyd;¹⁴⁵ Northholt Manor, 13th century;¹⁴⁶ Hereford, 13th–15th century;¹⁴⁷ Brandon Castle;¹⁴⁸ Goltho Manor, 11th century.¹⁴⁹

Type M7: 11th–14th century.

This form has a short circular socket which narrows into a very long, thin point with a diamond cross-section. *London Museum Medieval Catalogue*, Type 7.¹⁵⁰

Function: Armour-piercing. Dimensions: Length 140–200 mm. Width 8–12 mm.

Parallels/Date: Goltho Manor, 11th century;¹⁵¹ Castle Acre, 12th century;¹⁵² Rumney Castle;¹⁵³ Dryslwyn Castle, mid 13th–14th century;¹⁵⁴ Montgomery Castle;¹⁵⁵ Rhuddlan Castle, 13th century;¹⁵⁶ Brandon Castle;¹⁵⁷ Bramber Castle, mid 13th century;¹⁵⁸ Caergwrle Castle;¹⁵⁹ Weoley Castle;¹⁶⁰ Winchester, 11th–12th century.¹⁶¹

Type M8: mid 13th–15th century.

This form has a long, narrow, tapering blade with a diamond cross-section, it has a socket which joins the blade smoothly or with a prominent shoulder.

Function: Armour-piercing. Dimensions: Length 80–170 mm. Width 8–13 mm.

Parallels/Date: Loughor Castle;¹⁶² Dryslwyn Castle, late 13th–15th century;¹⁶³ Castell-y-Bere;¹⁶⁴ Criccieth Castle;¹⁶⁵ Montgomery Castle;¹⁶⁶ Dyserth Castle;¹⁶⁷ The Mount,¹⁶⁸ Doonbought Fort;¹⁶⁹ Urquhart Castle;¹⁷⁰ Rhuddlan Castle, 13th century.¹⁷¹

Type M9: mid 13th–15th century.

This form is similar to M8. It has a thick diamond-shaped tapering blade, with a large socket.

Function: Armour-piercing. Dimensions: Length 100–140 mm. Width 10–18 mm.

Parallels/Date: Carrisbrooke Castle;¹⁷² Dryslwyn Castle, mid 13th–15th century;¹⁷³ Milton Keynes;¹⁷⁴ Rumney Castle;¹⁷⁵ Castell-Y-Bere;¹⁷⁶ Urquhart Castle.¹⁷⁷

Type M10: mid 12th–15th century.

This form has a short thin blade, with a diamond cross-section and a socket. *London Museum Medieval Catalogue*, Types 8 and 10.¹⁷⁸

Function: Armour-piercing. Dimensions: Length 30–80 mm. Width 8–16 mm.

Parallels/Date: Castell-Y-Bere, 13th century;¹⁷⁹ Criccieth Castle;¹⁸⁰ Dryslwyn Castle, late 13th–15th century;¹⁸¹ Pevensey Castle;¹⁸² Llandough, 13th century;¹⁸³ Montgomery Castle;¹⁸⁴ The Mount;¹⁸⁵ Urquhart Castle.¹⁸⁶

HUNTING ARROWHEADS

The final group consists of five hunting arrowheads. Types H1 and H2 are sometimes referred to as forkers,¹⁸⁷ because their barbs point forward, either in a crescent or V shape. Their exact function is unknown, although they were possibly used for catching fowl. The larger forms, H3 and H4, are often referred to as broadheads. The enormous barbs allow the maximum cutting edge possible, which would have caused extensive blood loss, and effectively weakened a pursued animal.

The last arrowhead form within the new typology is H5. There is a lack of archaeological evidence for its existence; possibly because it was made from an organic material such as wood or leather. However, its inclusion within the typology is due to its illustration in medieval manuscripts.¹⁸⁸ It is suggested by Blackmore that it would be ideal for catching smaller game birds, because their delicate flesh would be extensively damaged by forked or barbed heads.¹⁸⁹ In the 14th-century hunting book written by Gaston Phoebus there is an illustration of the use of this form for hunting hares.¹⁹⁰ It appears that the arrowhead would have stunned the animal, allowing easy retrieval by the waiting hounds.

Type H1: late 13th century.

This form has a crescent-shaped head with a short socket, the inside of the crescent is sharpened. *London Museum Medieval Catalogue*, Type 6.¹⁹¹

Function: Hunting. Dimensions: Length 30–60 mm. Width 25–40 mm.

Parallels/Date: Basing House, late medieval;¹⁹² Ashmolean Museum, unprovenanced;¹⁹³ Clarendon Palace;¹⁹⁴ Glenluce;¹⁹⁵ Baile Hill, 13th century;¹⁹⁶ Salisbury.¹⁹⁷

Type H2: late 14th century.

This form is similar to H1. It has a V-shaped head with a short socket. The inside angle is sharpened.

Function: Hunting. Dimensions: Length 30–50 mm. Width 25–40 mm.
 Parallels/Date: Blenheim Palace;¹⁹⁸ Basing House, late medieval;¹⁹⁹ Westbury;²⁰⁰ Carris-
 brooke Castle.²⁰¹

The two examples of broadheads H₃ and H₄ are representative of a very large range of forms. They do, however, split into two distinct groups; those with a flattish diamond cross-section, H₃, and those with a central socketed spine, H₄. Their size varies from *c.* 100 mm in barb width to *c.* 40 mm. They appear to be absent from early assemblages, and they may be a late introduction.

Type H₃: mid 13th century.

This form has a centrally enclosed socket, by the addition of two, large, flat barbs, it is diamond in cross-section. Many derivatives.

Function: Hunting (Broadhead). Dimensions: Length 50–100 mm. Width 45–100 mm.
 Parallels/Date: Eltham Palace;²⁰² Christchurch, 13th century;²⁰³ Clarendon Palace;²⁰⁴
 Low Petergate;²⁰⁵ Woodperry.²⁰⁶

Type H₄: 14th century.

This form is similar to H₃. A tapering socket forms the spine of the arrowhead, with two long curving barbs. *London Museum Medieval Catalogue*, Types 14 and 15.²⁰⁷

Function: Hunting (Broadhead). Dimensions: Length 35–80 mm. Width 50–100 mm.
 Parallels/Date: Customs House;²⁰⁸ Usk;²⁰⁹ Ashmolean Museum, unprovenanced;²¹⁰
 Okehampton Castle, 15th–16th century;²¹¹ Westbury;²¹² Woodperry;²¹³ Clarendon Pal-
 ace;²¹⁴ New Romney.²¹⁵

Type H₅: 12th–13th century.

This form is a blunt-ended arrowhead, with a socket.

Function: Hunting (Birds/Rabbits). Dimensions: Length 20–45 mm. Width 10–25 mm.
 Parallels/Date: Blackmore;²¹⁶ Gaston Phoebus.²¹⁷

CONCLUSION

The new typology has attempted to incorporate the common forms of arrowhead from the British Isles dating to between the 10th and 16th centuries. It combines the strengths of the *London Museum Medieval Catalogue* typology,²¹⁸ and is designed in such a way that new forms can and should be added into the sequence. Future work aims to look more closely at the context of deposition and the effect of continental influence on arrowhead shape and development. This should help refine the suggested date ranges for the individual types.

ACKNOWLEDGEMENTS

This paper is based upon research initially conducted for a B.A. dissertation at the University of Durham. I would like to thank Dr C. Caple, Dr J. Price and Prof. M. Millett for their comments on earlier drafts of this paper and Dr I. Goodall and Mr T. De Reuck for their continued support and advice. I am also grateful to Dr M. Redknap at the National Museum of Wales, Mr A. MacGregor at the Ashmolean Museum, Ms J. Stevenson at the Museum of London and Dr M. Gamster at the British Museum for allowing me access to the unpublished arrowheads within their museum stores. Finally, I must thank my wife Pippa and M.R.G. for their patience and constant encouragement during the writing of this paper.

NOTES

¹ *London Museum Medieval Catalogue*, 7, J. B. Ward Perkins (London, 1940), 65–73. The typology was created using arrowheads found within the city of London, mainly from bomb sites and the River Thames.

² *Ibid.*, see preparatory note.

³ *Ibid.*, 65.

⁴ *Ibid.*, 65; *ibid.*, 66, fig. 16. Type 18 appears to be a Roman form, see W. H. Manning, *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum* (London, 1985), 177–79, pl. 85.

⁵ For example, New Typology forms — T1, MP5, MP6, MP8, MP9, M1, M2, M3, M5, M6, M8, M9, H2, H3 and H5; see Fig. 1.

⁶ For example: R. Samson, 'Finds from Urquhart Castle', *Proc. Soc. Antiq. Scot.*, 112 (1982), 466–69, finds nos. 12, 22–31; A. Oswald, 'Excavation of a 13th Century Wooden Building at Weoley Castle', *Medieval Archaeol.*, 6–7 (1962–63), 131–32, finds no. 17; R. J. Brewer and H. J. Lewis, 'Ironwork', in D. Robinson, *Biglis, Caldicot and Llandough: 3 Late Iron Age and Romano-British sites in Southeast Wales, Excavated 1977–79* (British Archaeol. Rep. British Ser. 188, 1988), 173–74, finds no. 11.

⁷ Ward Perkins, *op. cit.* in note 1, fig. 17, 68–70.

⁸ Caesar's Camp in Kent, Marlborough in Wiltshire, Rayleigh Castle in Essex and Dyserth Castle in Clwyd.

⁹ An example of this is the arrowhead from Marlborough, which was apparently discovered within a 12th-century pot and therefore dated to the 12th century. However, his statement cannot be verified, see Ward Perkins, *op. cit.* in note 1, 68–70.

¹⁰ The excavation of Raleigh Castle by E. B. Francis, *Trans. Essex Archaeol. Soc.*, 12 (1913), 147–85, does not appear to take account of the later building work within the castle, or the likelihood of intrusive features.

¹¹ Ragnhildsholmen and Visby in Sweden.

¹² However, one of the reasons for such a wide range of arrowhead forms within Britain is likely to have resulted from contact with Northern Europe.

¹³ Ward Perkins, *op. cit.* in note 1, 65–73.

¹⁴ Examples of other typologies can be found in O. Montelius, *Die Typologische Methode* (Stockholm, 1903); and W. M. F. Petrie, 'Sequences in prehistoric remains', *J. Anthropol. Inst.*, 29 (1899), 295–301.

¹⁵ It is perhaps helpful to use the 'golf club' analogy, and imagine that at any one time the medieval archer had a range of arrowhead forms in his quiver, each designed for a specific purpose.

¹⁶ See P. Ottaway, 'Anglo-Scandinavian Ironwork from 16–22 Coppergate', *The Archaeol. of York*, 17 (London, 1992), 710–15.

¹⁷ T. A. Glenn, 'Prehistoric and Historic Remains at Dyserth Castle', *Archaeol. Cambrensis*, 15 (1915), 63–64.

¹⁸ Ottaway, *op. cit.* in note 16, 712, finds no. 3910.

¹⁹ *Ibid.*, 710–15, finds nos. 3905–30. Described as Anglo-Scandinavian.

²⁰ Ashmolean Museum unpublished. Accession no. 1888.1393a.

²¹ National Museum of Wales unpublished. Accession no. 37.410/18.

²² Glenn, *op. cit.* in note 17, 463–64, 250–51. Also National Museum of Wales unpublished. Accession no. 15.248/9.

²³ R. Wilcox, 'Castle Acre Priory Excavations, 1972–76', *Norfolk Archaeol.*, 37 (1980), 265–66, finds no. 4.

²⁴ P. A. Rahtz and M. H. Rahtz, 'T.40: Barrow and Windmill at Butcombe, North Somerset', *Proc. Univ. Bristol Spelaeol. Soc.*, 8 (1958), 89, finds no. 8.

²⁵ Glenn, *op. cit.* in note 17, 63–64, 250–51. Also, National Museum of Wales unpublished. Accession nos. 15.248/9, 15.248.

²⁶ I. Goodall, 'Arrowheads', in M. Biddle, *Object and Economy in Medieval Winchester, Winchester Studies 7. II, Artefacts from Medieval Winchester*, 1 (Oxford, 1990), 1070.

²⁷ Ward Perkins, *op. cit.* in note 1, 65, fig. 16, type 2.

²⁸ I. Goodall, *op. cit.* in note 26, 1070–71, finds nos. 3991, 3994, 3997.

²⁹ National Museum of Wales unpublished. Accession nos. 76.4H/2, 76.4H/10.

³⁰ I. Goodall, 'Weapons', in G. Beresford, *Goltho — the development of an early Medieval Manor c. 850–1150* (English Heritage Archaeol. Rep. 4, 1987), 185–86, finds no. 178.

³¹ K. A. Rodwell, 'Objects of Iron', in W. J. Rodwell and K. A. Rodwell, *Rivenhall: investigation of a villa, church and village 1950–1977* (C.B.A. Res. Rep. 80, 1993), 44–46, finds no. 20.

³² I. Goodall, 'Iron Objects', in J. G. Coad and A. D. F. Streeten, 'Excavations at Castle Acre Castle, Norfolk, 1972–77', *Archaeol. J.*, 139 (1982), 235–36, finds nos. 146, 148.

³³ S. Lloyd-Fern and S. H. Sell, 'Objects of Iron, Bronze and Bone', in K. W. Lightfoot, 'Rumney Castle, a ringwork and manorial centre in S. Glamorgan', *Medieval Archaeol.*, 36 (1992), 134–35, finds nos. 2–4.

³⁴ K. J. Barton and E. W. Holden, 'Excavations at Bramber Castle, Sussex, 1966–67', *Archaeol. J.*, 134 (1978), 61–62, finds no. 6.

³⁵ C. W. Dickinson and D. M. Waterman, 'Excavation of a Rath and Motte at Castle Skreen, Co. Down', *Ulster J. Archaeol.*, 22 (1959), 78, finds no. 7.

³⁶ Ward Perkins, *op. cit.* in note 1, 65, fig. 16, type 3.

³⁷ Goodall, *op. cit.* in note 30, 185, finds no. 176.

³⁸ Barton and Holden, *op. cit.* in note 34, 61–62, finds no. 6.

³⁹ Goodall, *op. cit.* in note 26, 1073, finds no. 4004.

⁴⁰ Lloyd-Fern and Sell, *op. cit.* in note 33, 134–35, finds no. 9.

⁴¹ National Museum of Wales unpublished. Accession nos. 76.4H/2, 76.4H/3, 76.4H/4, 76.4H/5.

⁴² Rodwell and Rodwell, *op. cit.* in note 31, 44–46, finds no. 18.

- ⁴³ Ashmolean Museum unpublished. Accession no. 1876.136.
- ⁴⁴ A. Borg, 'Arms and Armour', in P. and E. Saunders (eds.), *Salisbury Museum Medieval Catalogue*, 1 (Salisbury, 1991), 82, finds no. 45.
- ⁴⁵ L. Allen, 'Small Finds', in T. Allen *et al.*, 'A Medieval grange of Abingdon Abbey at Dean Court Farm, Cumnor, Oxford', *Oxoniensia*, 59 (1994), 367–68, finds no. 55.
- ⁴⁶ D. A. Hinton, 'Objects of Iron', in B. Cunliffe, *Excavations at Portchester Castle*, 3, *Medieval, the outer bailey and its defences* (Soc. Antiq. London Res. Rep. 34, 1977), 198–99, finds no. 21.
- ⁴⁷ R. Shoemith, *Hereford City Excavations*, 3, *The Finds* (C.B.A. Res. Rep. 56, 1985), 4–7, finds nos. 2.3, 2.7.
- ⁴⁸ Samson, *op. cit.* in note 6, 466–69, finds no. 16.
- ⁴⁹ Ward Perkins, *op. cit.* in note 1, 65, fig. 16, type 1.
- ⁵⁰ M. O. H. Carver, '3 Saxo-Norman Tenements in Durham City', *Medieval Archaeol.*, 23 (1979), 18, finds no. 174/1659.
- ⁵¹ Wilcox, *op. cit.* in note 23, 265–66, finds no. 3.
- ⁵² P. Rahtz, 'Excavations on Glastonbury Tor, Somerset, 1964–6', *Archaeol. J.*, 127 (1970), 52–53, finds no. 15.
- ⁵³ Shoemith, *op. cit.* in note 47, 4–7, finds no. 2.4.
- ⁵⁴ National Museum of Wales unpublished. Accession no. 76.4H/11.
- ⁵⁵ P. Rahtz and S. Hurst, 'Beckery Chapel, Glastonbury 1967–8', *Glastonbury Antiq. Soc.* (1974), 61–62, finds no. 7.
- ⁵⁶ Borg, *op. cit.* in note 44, 83, finds no. 63.
- ⁵⁷ Ward Perkins, *op. cit.* in note 1, 65, fig. 16, type 4.
- ⁵⁸ Goodall, *op. cit.* in note 26, 1071, finds no. 4001.
- ⁵⁹ E. B. Francis, *op. cit.* in note 10, 169, finds no. 6.
- ⁶⁰ Hinton, *op. cit.* in note 46, 198, finds no. 20.
- ⁶¹ National Museum of Wales unpublished. Accession nos. 76.4H/8, 76.4H/9.
- ⁶² A. Rogerson, 'Excavation on Fullers Hill, Great Yarmouth', *E. Anglian Archaeol.*, 2 (1976), 162–66, finds no. 15.
- ⁶³ Hinton, *op. cit.* in note 46, 198, finds no. 23.
- ⁶⁴ National Museum of Wales unpublished. Accession no. 1973.41.
- ⁶⁵ Brewer and Lewis, *op. cit.* in note 6, 173–74, finds no. 11.
- ⁶⁶ Ashmolean Museum unpublished. Accession nos. 1873.45, 1977.170, 1879.230.
- ⁶⁷ Q. Mould, 'Iron', in S. W. Ward, *Excavations at Chester — The Lesser Medieval Religious Houses Sites investigated 1964–83* (Grosvenor Museum Archaeol. Exc. Surv. Rep. 6, 1990), 173–74, finds no. 8.
- ⁶⁸ Ashmolean Museum unpublished. Accession no. 1873.48.
- ⁶⁹ Goodall, *op. cit.* in note 32, 235–36, finds no. 166.
- ⁷⁰ I. Goodall, 'Arrowheads', in H. Quinnell *et al.*, *Excavations at Rhuddlan, Clwyd 1969–75, Mesolithic to Medieval* (C.B.A. Res. Rep. 95, 1994), 188–89, finds no. 138.
- ⁷¹ Goodall, *op. cit.* in note 26, 1073, finds no. 4011.
- ⁷² Barton and Holden, *op. cit.* in note 34, 61–62, finds nos. 4, 5.
- ⁷³ Ward Perkins, *op. cit.* in note 1, 65, fig. 16, type 13.
- ⁷⁴ I. Goodall, 'The small Finds', in K. S. Jarvis, *Site XI, Excavations in Christchurch 1969–1980* (Dorset Natur. Hist. Archaeol. Soc. Mono. 5, 1983), 76–77, finds nos. 51, 52.
- ⁷⁵ Ashmolean Museum unpublished. Accession nos. 1873.48, 1955.403a, 1955.403c.
- ⁷⁶ Glenn, *op. cit.* in note 17, 63–64, 250–51. Also, National Museum of Wales unpublished. Accession no. 15.248/19.
- ⁷⁷ P. B. Chatwin, 'Brandon Castle, Warwickshire', *Trans. Birmingham Archaeol. Soc.*, 73 (1955), 81–82, finds no. 8.
- ⁷⁸ A. G. Credland, 'Military Finds', in P. Mayes and L. Butler, *Sandal Castle Excavations, 1964–1973, a detailed archaeological report* (Wakefield, 1983), 265–66, finds no. 35.
- ⁷⁹ I. Goodall, 'The Ironwork', in P. Armstrong *et al.*, *Excavations at Lurk Lane Beverley, 1979–82* (Sheffield Exc. Rep. 1, 1991), 135, 146, finds no. 573.
- ⁸⁰ Samson, *op. cit.* in note 6, 466–69, finds no. 13.
- ⁸¹ O. M. Jessop, 'Weapons', in C. Caple and P. Webster, *Excavations at Dryslwyn Castle, Dyfed* (C.B.A. Res. Rep., forthcoming), finds nos. 3, 5.
- ⁸² Goodall, *op. cit.* in note 79, 135, 146, finds no. 572.
- ⁸³ National Museum of Wales unpublished. Accession no. 1973.23.
- ⁸⁴ Rahtz and Hirst, *op. cit.* in note 55, 61–61, finds no. 6.
- ⁸⁵ Rodwell and Rodwell, *op. cit.* in note 31, 44–46, finds no. 21.
- ⁸⁶ Samson, *op. cit.* in note 6, 466–69, finds no. 17.
- ⁸⁷ D. M. Waterman, 'Excavations at Seafin Castle and Mallyrone Motte and Bailey', *Ulster J. Archaeol.*, 18 (1955), 141, finds no. 1.
- ⁸⁸ J. K. Knight, 'Excavations at Montgomery Castle', *Archaeol. Cambrensis*, 142 (1993), 226–28, finds no. 17.
- ⁸⁹ Waterman, *op. cit.* in note 87, 141, finds no. 94.
- ⁹⁰ P. V. Addyman and J. Priestley, 'Baile Hill, York', *Archaeol. J.*, 134 (1978), 138–43.
- ⁹¹ I. Goodall, 'Ironwork', in C. Woodfield, 'Finds from the Free Grammar School at the White Friars, Coventry', *Post-Medieval Archaeol.*, 15 (1981), 86–87.
- ⁹² Addyman and Priestley, *op. cit.* in note 90, 138–43, finds nos. 37–49.

- ⁹³ N. P. Thompson, 'Excavations on a Medieval Site at Huish, 1967-68', *Wiltshire Archaeol. Natur. Hist. Mag.*, 67 (1972), 120-21, finds no. 26.
- ⁹⁴ M. R. Apted, 'Excavation at Kildrummy Castle, Aberdeenshire', *Proc. Soc. Antiq. Scot.*, 96 (1963-64), 231-32, finds no. 44.
- ⁹⁵ D. C. Mynard and R. J. Zeepvat, *Excavations at Great Linford, 1974-80* (Buckinghamshire Archaeol. Soc. Mono. Ser. 3, 1991), 203-04, finds no. 387.
- ⁹⁶ I. Goodall, 'Iron Objects', in A. D. Saunders, 'Lydford Castle, Devon', *Medieval Archaeol.*, 24 (1980), 165-68, finds no. 13.
- ⁹⁷ M. Henig and H. Woods, 'Small Finds', in D. Sherlock *et al.*, *St Augustines Abbey, Report on Excavations 1960-78* (Kent Archaeol. Soc. Mono. Ser. 4, 1988), 223-25, finds no. 126.
- ⁹⁸ Credland, *op. cit.* in note 78, 265-66, finds nos. 29-31.
- ⁹⁹ Rodwell and Rodwell, *op. cit.* in note 31, 44-46, finds no. 23.
- ¹⁰⁰ C. Drage, 'Nottingham Castle — A Place Full Royal', *Trans. Thoroton Soc. Nottinghamshire*, 93 (1990), 125-26, finds no. 46.
- ¹⁰¹ I. Goodall, 'Iron Objects', in J. Blair (ed.), *St Frideswide's Monastery at Oxford, Archaeological and Architectural Studies* (Gloucester, 1990), 43-44, finds nos. 10, 11.
- ¹⁰² Goodall, *op. cit.* in note 26, 1074, finds no. 4016.
- ¹⁰³ J. M. Lewis and S. H. Sell, 'Objects of Metal and Bone', in H. J. Thomas and G. Dowdell, 'A shrunken Medieval Village at Barry, South Glamorgan', *Archaeol. Cambrensis.*, 136 (1987), 128-29, finds no. 3.
- ¹⁰⁴ Shoesmith, *op. cit.* in note 47, 4-7, finds nos. 2.9-2.13.
- ¹⁰⁵ Ward Perkins, *op. cit.* in note 1, 65, fig. 16, type 5.
- ¹⁰⁶ Addyman and Priestley, *op. cit.* in note 90, 138-43, finds nos. 29-32.
- ¹⁰⁷ Goodall, *op. cit.* in note 91, 86-87, finds nos. 1-9.
- ¹⁰⁸ Goodall, *op. cit.* in note 96, 165-68, finds nos. 12, 14.
- ¹⁰⁹ I. Goodall, 'Iron Objects', in G. H. Smith, 'The excavation of the hospital of St. Mary of Ospringe, commonly called Maison Dieu', *Archaeologia Cantiana* (1980), 95, 135-37, finds no. 122.
- ¹¹⁰ Credland, *op. cit.* in note 78, 265-66, finds nos. 32, 33.
- ¹¹¹ Goodall, *op. cit.* in note 26, 1074, finds nos. 4017, 4018.
- ¹¹² Borg, *op. cit.* in note 44, 84, finds nos. 83, 84.
- ¹¹³ This is clearly demonstrated by Tylecote's statement, 'It takes a penetration of 11 mm to the thorax to cause fatal wounding through 2 mm plate'; R. F. Tylecote and B. J. J. Gilmoor, *The Metallography of early Ferrous edged tools and edged weapons* (British Archaeol. Rep. British Ser. 155, 1986), 109.
- ¹¹⁴ Holmes, *et al.*, 'Excavations South of Bernard Street, Leith, 1980', *Proc. Soc. Antiq. Scot.*, 115 (1985), 420-21, finds no. 3.
- ¹¹⁵ M. Fairbrother, 'Objects of Iron', in C. Young, *Excavations at Carrisbrooke Castle* (English Heritage Archaeol. Rep., forthcoming), finds no. 23.
- ¹¹⁶ British Museum unpublished. Accession no. OA4730.
- ¹¹⁷ Credland, *op. cit.* in note 78, 265-66, finds no. 38.
- ¹¹⁸ Ashmolean Museum unpublished. Accession nos. 1955.402g, 1955.403e, 1955.402a.
- ¹¹⁹ Knight, *op. cit.* in note 88, 226-28, finds no. 16.
- ¹²⁰ British Museum unpublished. Accession no. OA4717.
- ¹²¹ Borg, *op. cit.* in note 44, 84, finds nos. 77, 80, 81.
- ¹²² Credland, *op. cit.* in note 78, 265-66, finds no. 37.
- ¹²³ Samson, *op. cit.* in note 48, 466-69, finds no. 4.
- ¹²⁴ Borg, *op. cit.* in note 44, 84, finds no. 93.
- ¹²⁵ British Museum unpublished. Accession nos. OA4718, OA4720, OA4725, OA4724.
- ¹²⁶ Ashmolean Museum unpublished. Accession no. 1873.51.
- ¹²⁷ Ward Perkins, *op. cit.* in note 1, 65, fig. 16, type 16.
- ¹²⁸ Thompson, *op. cit.* in note 93, 120-21, finds no. 25.
- ¹²⁹ Ashmolean Museum unpublished. Accession no. 1930.610.
- ¹³⁰ Goodall, *op. cit.* in note 109, 135-37, finds nos. 119-21.
- ¹³¹ I. Goodall, 'Iron Objects', in G. Beresford, *The Medieval Clay land Village: Excavations at Goltho and Barton Blount* (Soc. Medieval Archaeol. Mono. Ser. 6, 1975), 87-88, finds no. 97.
- ¹³² Borg, *op. cit.* in note 44, 82, finds no. 31.
- ¹³³ I. Goodall, 'Iron Objects', in R. A. Higham *et al.*, 'Excavations at Okehampton Castle, Devon. Part 2, The Bailey', *Proc. Devon Archaeol. Soc.*, 40 (1982), 105-06, finds no. 14.
- ¹³⁴ Goodall, *op. cit.* in note 26, 1073, finds no. 4014.
- ¹³⁵ Goodall, *op. cit.* in note 30, 185-86.
- ¹³⁶ Goodall, *op. cit.* in note 32, 235-36.
- ¹³⁷ Goodall, *op. cit.* in note 30, 185-86, finds no. 183.
- ¹³⁸ M. Bennell, 'Non-Structural Metalwork', in P. L. Drewett, 'Excavations at Lewis Castle, East Sussex 1985-88', *Sussex Archaeol. Collect.*, 130 (1992), 95-97, finds no. 7.
- ¹³⁹ Glenn, *op. cit.* in note 17, 47-86; also, National Museum of Wales unpublished. Accession no. 15.248/20.
- ¹⁴⁰ National Museum of Wales unpublished. Accession no. 81.104H.
- ¹⁴¹ Lloyd-Fern and Sell, *op. cit.* in note 33, 134-35, finds no. 12.
- ¹⁴² Goodall, *op. cit.* in note 70, 188-89, finds no. 140.
- ¹⁴³ Jessop, *op. cit.* in note 81, finds nos. 8-16.

- ¹⁴⁴ Goodall, op. cit. in note 32, 235–36, finds nos. 156–59.
- ¹⁴⁵ National Museum of Wales unpublished. Accession nos. 76.4H/15, 76.4H/16.
- ¹⁴⁶ J. G. Hurst, 'The Kitchen Area of Northholt Manor, Middlesex', *Medieval Archaeol.*, 5 (1961), 289–90, finds no. 5.
- ¹⁴⁷ Shoesmith, op. cit. in note 47, 4–7, finds no. 2.8.
- ¹⁴⁸ Chatwin, op. cit. in note 77, 81–82, pl. 7.
- ¹⁴⁹ Goodall, op. cit. in note 30, 185–86, finds nos. 183, 184.
- ¹⁵⁰ Ward Perkins, op. cit. in note 1, 65, fig. 16, type 7.
- ¹⁵¹ Goodall, op. cit. in note 30, 185–86, finds nos. 185–87.
- ¹⁵² Goodall, op. cit. in note 32, 235–36, finds nos. 152–55.
- ¹⁵³ Lloyd-Fern and Sell, op. cit. in note 33, 134–35, finds no. 111.
- ¹⁵⁴ Jessop, op. cit. in note 81, finds no. 25.
- ¹⁵⁵ J. M. Lewis, 'The Excavations of the "New Building" at Montgomery Castle', *Archaeol. Cambrensis*, 117 (1968), 149–50, finds no. 10.
- ¹⁵⁶ Goodall, op. cit. in note 70, 188–89, finds no. 143.
- ¹⁵⁷ Chatwin, op. cit. in note 77, 81–82, pl. 7.
- ¹⁵⁸ Barton and Holden, op. cit. in note 34, 61–62, finds nos. 1, 2.
- ¹⁵⁹ P. Courtney, 'Metal Objects', in J. Manley, 'Excavations at Caergwrle Castle, Clwyd, N. Wales, 1988–1990', *Medieval Archaeol.*, 38 (1994), 112–13, finds no. 10.
- ¹⁶⁰ Oswald, op. cit. in note 6, 131–32, finds no. 17.
- ¹⁶¹ Goodall, op. cit. in note 26, 1073, finds no. 4009.
- ¹⁶² National Museum of Wales unpublished. Accession no. 1970.95/35.
- ¹⁶³ Jessop, op. cit. in note 81, finds nos. 37–44.
- ¹⁶⁴ National Museum of Wales unpublished. Accession nos. 21.24/57, 2, 5.
- ¹⁶⁵ National Museum of Wales unpublished. Accession no. 40–220–57.
- ¹⁶⁶ Knight, op. cit. in note 88, 226–28, finds nos. 10–14.
- ¹⁶⁷ Glenn, op. cit. in note 17, 63–64; also National Museum of Wales unpublished. Accession no. 15.248/11.
- ¹⁶⁸ F. H. Pavry and S. M. Knocker, 'The Mount, Princes Risborough', *Records of Buckinghamshire*, 16 (1957–58), 160, finds no. 4.
- ¹⁶⁹ T. E. McNeill, 'Excavations at Doonbought, Co. Antrim', *Ulster J. Archaeol.*, 40 (1977), 77–78, finds no. 19.
- ¹⁷⁰ Samson, op. cit. in note 6, 466–69, finds nos. 26–28.
- ¹⁷¹ Goodall, op. cit. in note 70, 188–89, finds nos. 146, 150–52.
- ¹⁷² Fairbrother, op. cit. in note 115, finds nos. 19, 21.
- ¹⁷³ Jessop, op. cit. in note 81, finds nos. 19, 21.
- ¹⁷⁴ I. Goodall, 'Weapons', in D. C. Mynard, *Excavations on Medieval and later sites in Milton Keynes, 1972–80* (Buckingham Archaeol. Soc. Mono. Ser. 6, 1994) 78, 83, finds no. 64.
- ¹⁷⁵ Lloyd-Fern and Sell, in op. cit. in note 33, 134, finds no. 17.
- ¹⁷⁶ National Museum of Wales unpublished. Accession nos. 21.24/1, 21.24/57.
- ¹⁷⁷ Samson, op. cit. in note 6, 466–69, finds no. 24.
- ¹⁷⁸ Ward Perkins, op. cit. in note 1, 65, fig. 16, type 8 and 10.
- ¹⁷⁹ National Museum of Wales unpublished. Accession no. 21.24/57; also L. A. S. Butler, 'Medieval finds from Castell-y-Bere, Merioneth', *Archaeologia Cambrensis*, 123 (1974), 95–96, finds no. 3.
- ¹⁸⁰ B. H. O'Neil, 'Criccieth Castle-Caernarvonshire', *Archaeologia Cambrensis*, 98 (1945), 40–41, finds nos. 3, 4.
- ¹⁸¹ Jessop, op. cit. in note 81, finds nos. 31–36.
- ¹⁸² British Museum unpublished. Accession no. OA4714.
- ¹⁸³ Brewer and Lewis, op. cit. in note 6, 173–74, finds no. 12.
- ¹⁸⁴ Knight, op. cit. in note 119, 226–28, finds no. 22.
- ¹⁸⁵ Pavry and Knocker, op. cit. in note 168, 160, finds no. 2.
- ¹⁸⁶ Samson, op. cit. in note 6, 466–69, finds nos. 23, 25, 29.
- ¹⁸⁷ H. L. Blackmore, *Hunting Weapons* (London, 1971), 148.
- ¹⁸⁸ For example, Walter de Milemete's book, *De Nobilitatibus Sapientibus et Prudentibus Regum* (1326–27), see *ibid.*, 144.
- ¹⁸⁹ Blackmore, op. cit. in note 187, 149.
- ¹⁹⁰ G. Bise (ed.), *Medieval Hunting Scenes, from "The Hunting Book" by Gaston Phoebus* (London, 1978) 97–98. The original manuscript dates to the 14th century.
- ¹⁹¹ Ward Perkins, op. cit. in note 1, 65, fig. 16, type 6.
- ¹⁹² S. Moorhouse, 'Finds from Basing House, Hampshire (c. 1540–1645): Part Two', *Post-Medieval Archaeol.*, 5 (1971), 53–54, finds no. 137.
- ¹⁹³ Ashmolean Museum unpublished. Accession no. R.S.
- ¹⁹⁴ I. Goodall, 'Arrowheads', in T. B. James and Ashmolean Museum Robinson, *Clarendon Palace* (Soc. Antiq. London Res. Rep. 45, 1988), 222–23, finds nos. 125, 126.
- ¹⁹⁵ E. M. Jope and H. M. Jope, 'A Hoard of 15th Century Coins from Glenluce sand-dunes and their context', *Medieval Archaeol.*, 3 (1959), 268–69, finds no. 1.
- ¹⁹⁶ Addyman and Priestley, op. cit. in note 90, 138–43, finds no. 28.
- ¹⁹⁷ Borg, op. cit. in note 44, 83, finds nos. 69, 70.
- ¹⁹⁸ Ashmolean Museum unpublished. Accession nos. 1879.249, 1879.250.
- ¹⁹⁹ Moorhouse, op. cit. in note 192, 53–54, finds no. 136.

- ²⁰⁰ J. M. Mills, 'Arrowheads', in R. J. Ivens *et al.*, *Tattenhoe and Westbury. Deserted Medieval Settlements in Milton Keynes* (Buckinghamshire Archaeol. Soc., Mono. Ser. 8, 1995), 337-40, 364, finds no. 117.
- ²⁰¹ Fairbrother, *op. cit.* in note 115, finds no. 30.
- ²⁰² H. Woods, 'The Excavation at Eltham Palace, 1975-9', *Trans. London Middlesex Archaeol. Soc.*, 33 (1982), 259-60, finds no. 26.
- ²⁰³ Goodall, *op. cit.* in note 74, 76-77, finds no. 52.
- ²⁰⁴ Goodall, *op. cit.* in note 194, 222-23, finds no. 122.
- ²⁰⁵ P. Wenham, 'Excavations in Low Petergate, York, 1957-58', *Yorkshire Archaeol. J.*, 44 (1972), 94, finds no. 2.
- ²⁰⁶ J. Wilson, 'Antiquities found at Woodperry, Oxon', *Archaeol. J.*, 3 (1846), 119-22, finds no. 5.
- ²⁰⁷ Ward Perkins, *op. cit.* in note 1, 65, fig. 16, type 14, 15.
- ²⁰⁸ T. Tatton-Brown, 'The Excavations at the Customs House Site, City of London — 1973', *Trans. London Middlesex Archaeol. Soc.*, 25 (1974), 189-90, finds no. 49.
- ²⁰⁹ W. H. Manning, 'Iron', in P. Courtney, *Report on Excavations at Usk, Medieval and Later Usk* (Cardiff, 1994), 73-74, finds no. 3.
- ²¹⁰ Ashmolean Museum unpublished. Accession no. 1920.87.
- ²¹¹ Goodall, *op. cit.* in note 133, 105-06, finds no. 15.
- ²¹² Mills, *op. cit.* in note 200, 337-40, 364, finds no. 1111.
- ²¹³ Wilson, *op. cit.* in note 206, 119-22, finds no. 6.
- ²¹⁴ Goodall, *op. cit.* in note 194, 222-23, finds nos. 119121, 119123, 119124.
- ²¹⁵ L. R. A. Grove, 'Researches and discoveries in Kent, New Romney', *Archaeologia Cantiana*, 82 (1968), 296, 297.
- ²¹⁶ Blackmore, *op. cit.* in note 187, 144, fig. 60.
- ²¹⁷ Bise, *op. cit.* in note 190, 98.
- ²¹⁸ Ward Perkins, *op. cit.* in note 1, 65-73, fig. 16.