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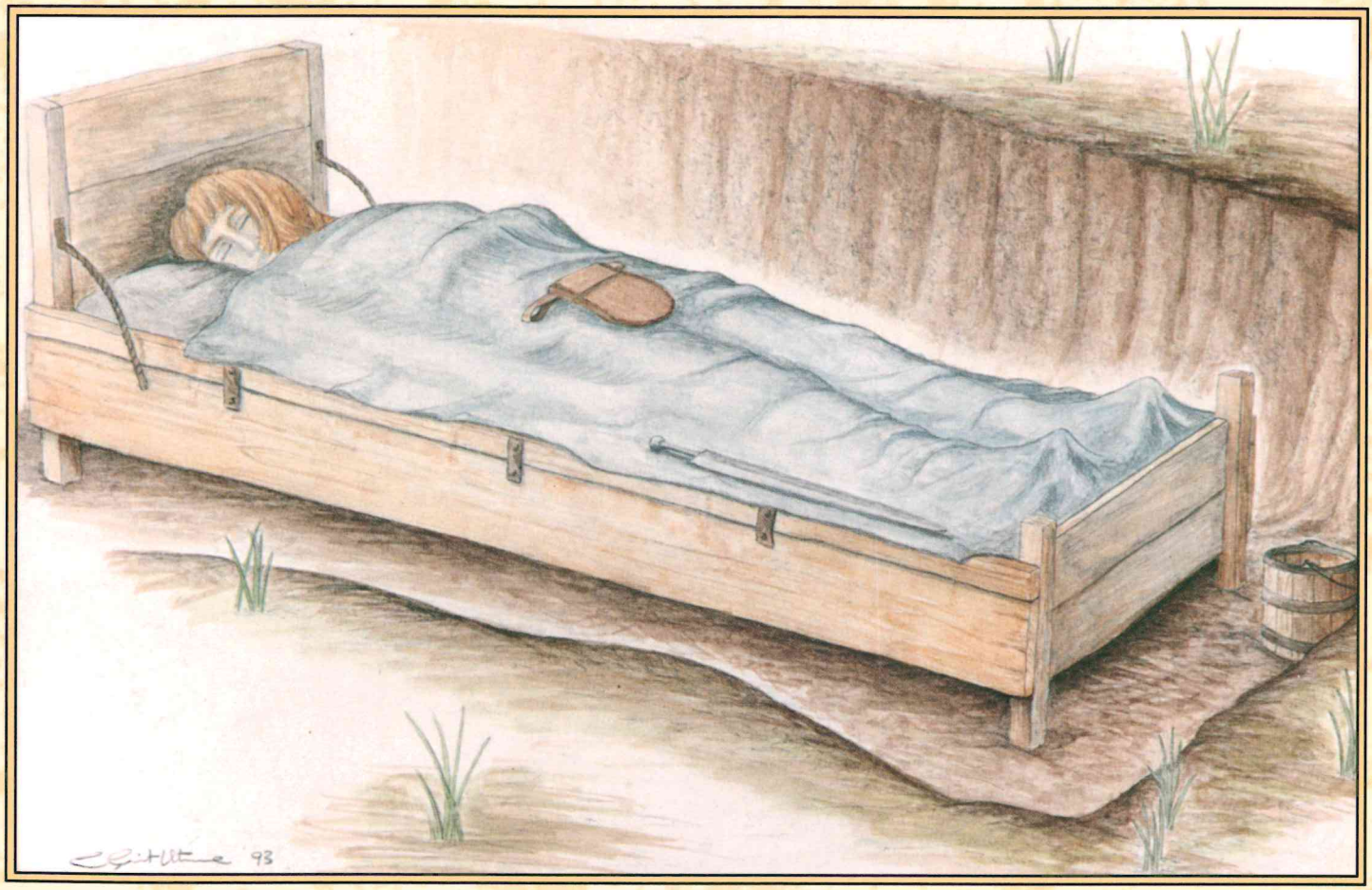
THE ANGLO-SAXON CEMETERY AT EDIX HILL (BARRINGTON A), CAMBRIDGESHIRE

Tim Malim and John Hines



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The Anglo-Saxon cemetery at Edix Hill (Barrington A), Cambridgeshire

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Excavations 1989–1991 and a summary catalogue
of material from 19th century interventions

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Front cover: an artist's reconstruction of the bed-burial, grave 18B (C Malim '93)
Back cover: site drawing showing detail of brooches and amber necklace, grave 79 (B Robinson '91)
Frontispiece: assorted artefacts from Barrington A

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Summary

At the time it was first brought to public notice in the 19th century, the inhumation cemetery at Edix Hill was being extensively damaged by drainage works and coprolite digging and partially investigated by antiquarians. When it was relocated in 1987, evidence of plough damage and a threat from metal-detecting led to its partial excavation by Cambridgeshire County Council's Archaeological Field Unit during three seasons from 1989 to 1991. This campaign of investigation uncovered approximately half of the surviving cemetery and established a date range for it from 500 AD through to the early 7th century. An estimated number of at least 300 burials for the site over a period of about 150 years suggests the cemetery served a community of approximately 50–65 people.

Bones from 149 individuals were found in 115 graves (one of which may be late Iron Age rather than Anglo-Saxon), and the good state of preservation revealed a healthy population with optimum growth and a number of long-lived individuals. A complete cross-section of the population appears to be represented, with infants, children, adolescents, and all ages of adults present, and equal numbers of males and females. The people were robust and osteoarthritis was endemic, suggestive of considerable manual labour and an outdoor lifestyle. Pathologies included many dental problems after *c* 40 years old, whilst diseases such as tuberculosis, leprosy, and various cancers have been detected.

Costume accessories such as jewellery show a material culture of mixed origin with both Anglian and Saxon traditions apparent, and some Kentish influences. A total of four distinct costume groups have been identified by comparing the findings at Edix Hill with other cemeteries in the eastern region. Status differential between richer and poorer furnished graves shows a tendency for the most pronounced display of high status to occur for women between 25 and 35 years old and men between 18 and 35. Girdle groups tend to be associated with the higher status women on site but some adolescents were found to have elements of feminine equipment including girdle groups which suggests they were approaching social maturity from twelve years old. A total of two 7th century bed-burials were found on the highest part of the site, one beneath a tumulus. In one of these a young woman with leprosy was found with an iron-bound wooden bucket at her feet, a casket on her lap, and a weaving batten made from a cut-down sword beside her.

About half of the male burials were found to have had weapons accompanying them. Of these the majority were between 18–35 and had both spear and shield, whereas adolescents buried with weapons were found only with spears. This suggests that social maturity amongst the male population was reached between the ages of fifteen and eighteen, and that men older than 35 were less frequently equipped with such visual signs of status. Both the design and ferrous technology of the spears and knives have been shown to be of very mixed quality – some may even have been more for show purposes than actual use.

One barrow mound, nine grave marker posts, 26 wooden grave structures, and two bed-burials were identified, as well as an area of disturbed graves attributable to 19th century activity. There was a great variety in the orientation and alignment of graves, perhaps influenced by the contours of Edix Hill and the direction of Iron Age ditches. Spatial patterning reveals a notable percentage of high status burials on the highest part of the site but only a faint indication of zoning by chronology, age, or gender. However, archaeological and osteological data strongly support the inference of burials clustering in family groups, including multiple burial in the same grave location found in eighteen instances.

Sommaire

A l'époque où il fut porté à l'attention du public, au 19ème siècle, le cimetière d'inhumations de Edix Hill subissait d'importants dégâts car il y avait des travaux sur les égouts, on creusait pour le coprolithe et il avait été partiellement exploré par des amateurs d'antiquités. Lorsqu'il fut localisé à nouveau, en 1987, des indices de dégâts dus au labourage et le danger que représentaient les détecteurs de métaux mena aux trois saisons de fouilles partielles effectuées de 1989 à 1991 par l'antenne archéologique du Cambridgeshire County Council. Cette campagne d'exploration mit à jour environ la moitié de ce qui restait du cimetière et établit une gamme de dates allant de l'an 500 au début du 7ème siècle. Un chiffre estimé d'au moins 300 enterrements pour le site pendant une période d'environ 150 ans suggère que le cimetière était celui d'une communauté d'environ 50 à 65 personnes.

On découvrit les ossements de 149 personnes dans 115 tombes et le bon état de conservation révéla une population en bonne santé avec une croissance optimale et un certain nombre de cas de longévité individuelle. Un échantillon complet de la population semble être représenté avec des bébés, des enfants, des adolescents et des adultes de tout âge et un nombre égal d'hommes et de femmes. Les gens étaient robustes et l'ostéo-arthrite était endémique, ce qui révèle beaucoup de travail manuel et une vie à l'extérieur. Au nombre des pathologies se trouvaient de nombreux problèmes dentaires après l'âge de 40 ans environ et on a également décelé des maladies comme la tuberculose, la lèpre et divers cancers.

Les accessoires vestimentaires comme les bijoux témoignent d'une culture matérielle d'origine mixte, les traditions Anglienne et Saxonne étant toutes deux présentes, ainsi que certaines influences du Kent. Quatre groupes vestimentaires différents ont été identifiés en comparant les découvertes de Edix Hill avec d'autres cimetière de la région orientale. Les différences de statut entre les tombes contenant un matériel funéraire plus riche et les plus pauvres montrent que les tombes de femmes âgées de 25 à 35 ans et d'hommes âgés de 18 à 35 ans affichent leur rang de la manière la plus marquée. Les groupes de ceintures ont tendance à être associés aux femmes de rang plus élevé sur le site mais on découvrit des éléments de parure féminine, y compris des groupes de ceinture parmi certains adolescents, ce qui suggère qu'ils approchaient leur maturité sociale dès l'âge de 12 ans. On découvrit deux enterrements sur lit du 7ème siècle dans la partie la plus haute du site, dont l'un se trouvait sous un tumulus. Dans l'un des deux, on découvrit une jeune femme lépreuse avec un seau en bois cerclé de fer à ses pieds, un coffret sur le ventre et un battant de tissage fabriqué à partir d'une épée tronquée à ses côtés.

Environ la moitié des restes masculins étaient accompagnés d'armes, la majorité de ceux qui étaient enterrés avec lance et bouclier étant âgés de 18 à 35 ans, alors que les adolescents enterrés avec des armes n'avaient que des lances. Cela suggère que les hommes atteignaient leur maturité sociale entre 15 et 18 ans et que les hommes de plus de 35 ans étaient moins souvent équipés de tels indices visibles de leur rang. A la fois le style et la technologie du fer des lances et des couteaux indiquent que leur qualité est très inégale; certains de ces objets étaient peut-être portés pour l'effet plutôt que pour leur utilité.

Un tertre funéraire, 9 poteaux funéraires, 26 structures funéraires en bois et 2 enterrements sur lit furent identifiés, ainsi qu'un ensemble de tombes bouleversées, qu'on attribue à l'activité du 19ème siècle. Il existait une grande variété d'orientation et d'alignement des tombes, indiquant peut-être l'influence des contours de Edix Hill et la direction des fossés de l'âge de fer. L'organisation spatiale révèle un remarquable pourcentage d'enterrement de rang social élevé dans la partie la plus haute du site mais seulement une faible indication de répartition en zones chronologiques, d'âge ou de sexe. Les données archéologiques et ostéologiques appuient néanmoins fortement la déduction d'enterrements en groupes familiaux, y compris des enterrements multiples dans la même tombe, dont on a découvert 18 exemples.

Zusammenfassung

Als er im 19 Jahrhundert zum ersten Mal öffentlich erwähnt wurde, war dieser Friedhof in Edix Hill beträchtlich durch Dränagearbeiten und Fossildung-Grabungen beschädigt worden. Er war auch teilweise von Antiquitäten-Interessenten untersucht worden. Als dieser Friedhof 1987 wieder entdeckt wurde, führten die Anhaltspunkte, er sei durch das Pflügen beschädigt worden und die Drohung, man würde hier nach Metall suchen, zu Ausgrabungen, die unter der Leitung von Cambridgeshire County Council Archaeological Field Unit (Landesrat von Cambridge, archäologische Studienabteilung) standen und die in drei Zeitabschnitten von 1989 bis 1991 durchgeführt wurden. Diese Untersuchungsaktion legte ungefähr die Hälfte der Überreste des Friedhofs frei und setzte die Zeitspanne der Daten zwischen 500 AD bis zum frühen 7 Jahrhundert fest. Eine geschätzte Zahl, nämlich mindestens 300 Beerdigungen, die auf diesem Gelände über eine Periode von ungefähr 150 Jahren stattgefunden haben, läßt darauf schließen, daß der Friedhof einer Gemeinde von ungefähr 50-65 Leuten gedient hatte.

Die in den 115 Gräbern gefundene Gebeine von 149 Menschen und deren gute Erhaltung, sowie eine Anzahl von lang gelebten Personen sind Beweis für eine gesunde Bevölkerung und einen optimalen Wachstum. In einem vollständigen Querschnitt der Bevölkerung scheinen hier vertreten zu sein: Säuglinge, Kinder, Jugendliche und alle Altersguppen von Erwachsenen und eine gleiche Anzahl von Männern und Frauen. Die Leute waren robust jedoch schien Knochenarthritis endemisch zu sein. Das wiederum läßt darauf schließen, daß diese Leute an Schwerarbeit und an ein Leben im Freien gewöhnt waren. Mit zu den Krankheitsbildern nach ca dem 40. Lebensjahr gehörten Zahnerkrankungen und auch Tuberkulose, Lepra und verschiedene Krebsarten.

Kostümzubehör wie Schmuckstücke weisen darauf hin, daß die materielle Kultur gemischten Ursprungs war und zwei Traditionen, die anglische und die sächsische auftauchte, sowie auch ein geringfügiger Einfluß aus Kent. Vier deutliche Kostümgruppen wurden durch eine Gegenüberstellung der Edix Hill-Funde mit anderen Friedhöfen in der östlichen Region identifiziert. Der unterschiedliche Status zwischen reicheren und ärmeren ausgestatteten Gräbern beweist, daß die ausgeprägteste Zurschaustellung des Ranges bei Frauen zwischen 25 und 35 und bei Männern zwischen 18 und 35 Jahren liegt. Verschiedene Arten Gürtelbundträger scheinen bei Frauen hohen Ranges auf diesem Gelände vebunden zu sein jedoch wurden auch weibliche Ausstattungen bei Jungendlichen, die auch diese Objekte enthielten, gefunden. Das wiederum läßt darauf schließen, daß diese Jugendlichen sich dem Reifealter, ab den 12 Lebensjahr, näherten. Zwei Bett- Beerdigungen vom 7 Jahrhundert wurden auf dem höchst gelegenen Gelände gefunden, eines davon lag unter einem Tumulusgrab. In einem dieser Gräber wurde eine leprakranke Frau mit einem eisengebundenen Holzkübel zu ihren Füßen, einer Schatulle in ihrem Schoß und eine von einem gekürzten Schwert gemachte Weblade neben ihr, gefunden.

Ungefähr die Hälfte der Gräber, die Männer enthielten waren mit Waffen versehen, die meisten davon waren Speere und Schilder und wurden bei Männern zwischen 18 und 35 gefunden, wohingegen die Jugendlichen nur mit Speeren bestattet wurden. Das läßt darauf schließen, daß das gesellschaftliche Reifealter bei der männlichen Bevölkerung zwischen dem 15 und 18 Lebensjahr erreicht wurde. Mämmer über dem 35 Lebensjahr wurden weniger oft mit diesen visuellen Zeichen des Ranges ausgestattet. Der Design und die Eisentechnik der Speere und Messer beweisen, daß sie aus sehr verschiedener Qualität sind - eine Anzahl dieser waren vielleicht eher für einen Ausstellungszweck gedacht als für den wirklichen Gebrauch.

Eine Hügelaufschüttung, neun Grab-Schildposten, 29 Holzgrabstrukturen und zwei Bett-Gräber, sowie ein Gebiet zerstörter Gräber, das man dem 19 Jahrhundert zuschreibt, wurden identifiziert. Es gab eine große Vielfalt von Gräbern, die in bezug auf Richtungen und Alignement, die vielleicht durch die Konturen von Edix Hill und der Richtung der Gräber aus der Eisenzeit, beeinflußt wurden. Das räumliche Muster enthüllt ein bemerkenswerten Prozentsatz Beerdigungen hochrangiger Individuen auf dem hüchst gelegenen Teil des Geländes, aber nur eine geringfügige Zoneneinteilung durch Chronologie, Alter und Geschlecht. Trotzdem aber unterstützen die archäologischen und osteologischen Daten sehr die Schlußfolgerung. Daß Beerdigungen sich in Familiengruppen sammelten und mehrfache Beerdigungen im selben Grab 18mal vorkamen.

I Introduction

Chapter 1 Background to the excavations

1.1 Location

Edix Hill is situated on the western edge of Barrington parish and close to the parish and village of Orwell. These parishes lie 12km south-west of Cambridge, within the Cam valley, which is part of the South Cambridgeshire district and a distinct geographical zone sandwiched between East Anglia and the Midlands (Fig 1.1). The clay uplands and lowland fens of Huntingdonshire and the Isle of Ely form the northern boundary to this zone whilst the Chilterns (dividing Cambridgeshire from Hertfordshire/Essex) form its southern limit (Fig 1.2).

The modern administrative district of South Cambridgeshire lies between the fens to the north and the eastern end of the Chilterns to the south. It is focused topographically on the headwaters of the Cam and its tributaries, the variable nomenclature of which can be confusing. In this publication the name Rhee is used for the river at Barrington, the Cam for the river at Great Chesterford, and the Granta for the river that joins the Cam at Shelford flowing west from Linton (Fig 1.2).

1.1.1 Geology

The cemetery at Edix Hill is situated on a chalk knoll largely surrounded by lower lying clayland (Gault Clay) which is the underlying geology of the area that has been exposed through localised erosion of the chalky upper deposits. Rounded pebbles that abounded on the site had not been brought from the river by human action but were stones eroded from the Boulder Clay. To the north the Chapel Hill ridge is formed from Lower Chalk (Fig 1.3) and a spur of Lower Chalk extending north-westwards from a main core around Barrington and Shepreth terminates in the knoll at Edix Hill (Fig 1.4).

During excavations two other phases of geological activity could be identified. River gravels had been brought to the surface of the chalk-marl by periglacial action, manifesting itself as gravelly sand polygons in Trenches XII and XIV. Green patches in the chalk-marl derive from Cambridge Greensand, the geological layer most associated with phosphates and coprolite mining, and indeed small nodules of coprolite were also evident.

1.1.2 Topography and historical setting

Edix Hill (also known as Edricks Hill and Edics Hill Hole) lies on the northern side of a wide river valley and flood plain for the river Rhee, which flows east and northwards to drain into the fenland basin and ultimately The Wash (Figs 1.1 and 1.2). In the vicinity of Edix Hill the valley is bordered by chalk hills running west–east. South of the river these chalklands constitute the eastern tail of the Chilterns, which rise to a maximum of 170m OD, and to the north they are defined by Chapel Hill ridge (70m OD) which terminates between Barrington and Haslingfield where the Rhee turns north past Harston towards Cambridge. From the low-lying and wet river plain of the Rhee the chalk peninsula of Edix Hill rises as a knoll to a height of 27m OD, or roughly 4m above the surrounding land.

Much of the clayland would have been wet in the past and a complex pattern of waterways connect the present villages of this zone, which have been situated largely along the springline and resultant streams. The area between these springline settlements and the Chiltern ridge is a drier zone of chalkland through which main lines of communication have run since prehistoric times (eg the Icknield Way) and across which a series of linear earthworks were constructed in early Anglo-Saxon times (Malim 1997). Both dry chalklands and wet claylands were referred to as moors in the past, interspersed with meres and small areas of fen, and would have been used largely as grazing land.

Crossing places of the Rhee are known to have existed in the vicinity of Edix Hill to the east at Barrington village; south at Malton Farm; immediately west of Malton at King's Bridge, and further west at Arrington Bridge on Ermine Street.

Ancient routeways (Fig 1.2) existed along Ermine Street (now the A1198), which ran south–north from Roman Braughing through modern Royston to Roman Godmanchester, 4km west of Edix Hill, with a west–east road, Akeman Street, running north-eastwards from Arrington/Wimpole to Cambridge (now the A603). Crossing this at the Wetherley Hundred meeting place on Fox Hill was a prehistoric and possibly Roman road, the 'Mare Way' (Fox 1923, 150–1) which probably ran along the Chapel Hill ridge from Arrington in the west to cross the Rhee at Harston and the Cam at Hauxton before intercepting Worsted Street close to Wandlebury, and perhaps on to meet the Icknield Way at Mutlow Hill on Fleam Dyke (Wilkes 1978, 28). The 'Port Way' or 'Potters Way' is another possible Roman route running north–south from the Hundred meeting place on Fox Hill through Orwell to cross the Rhee at King's Bridge, Malton, before continuing south to meet Ermine Street near to its junction with Ashwell Street. The latter is prehistoric in origin and was an east–west route that ran parallel to the Icknield Way through Bassingbourn, Melbourn, Fowlmere, Thriplow, and eastwards to

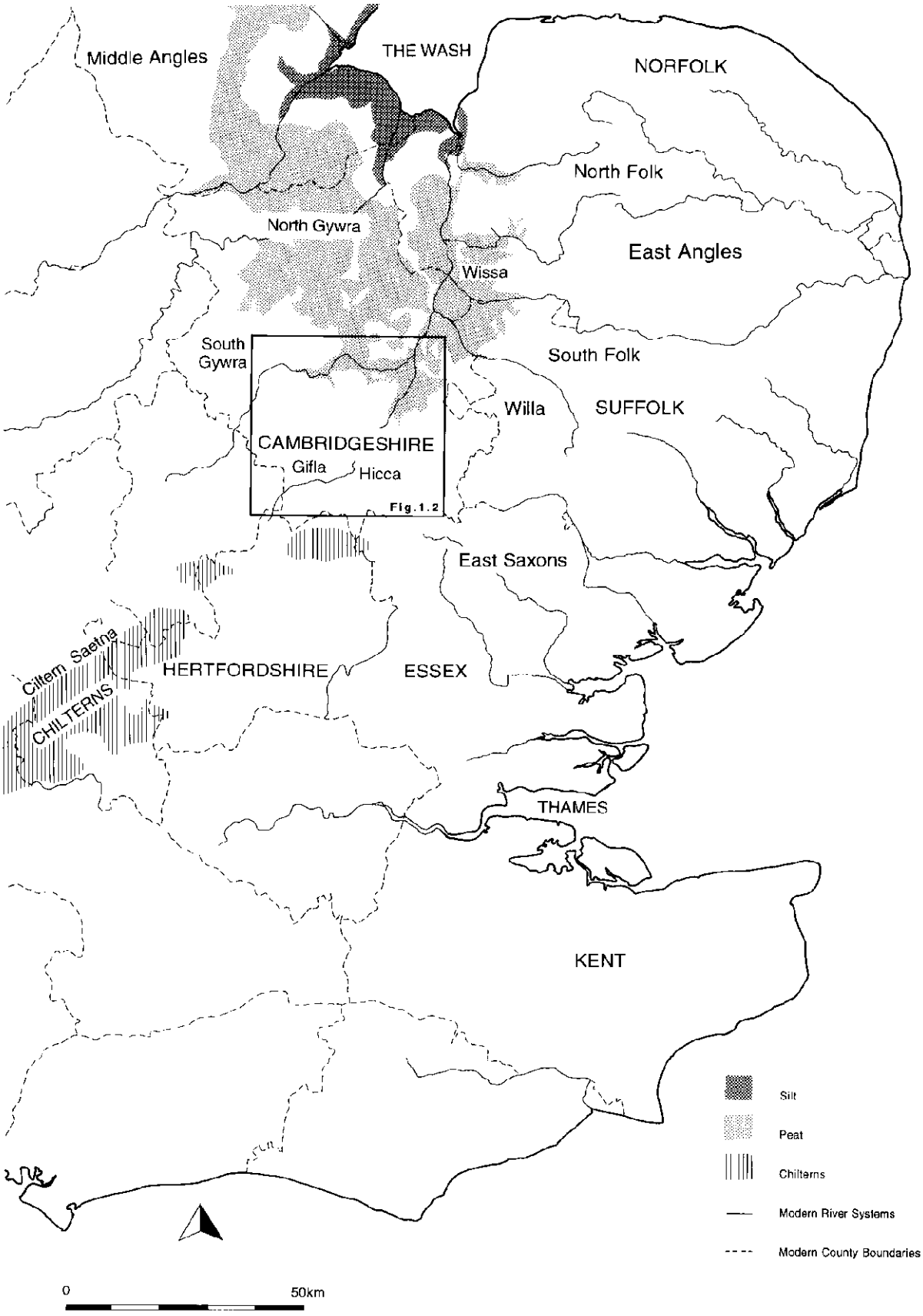

Figure 1.1 Regional location map

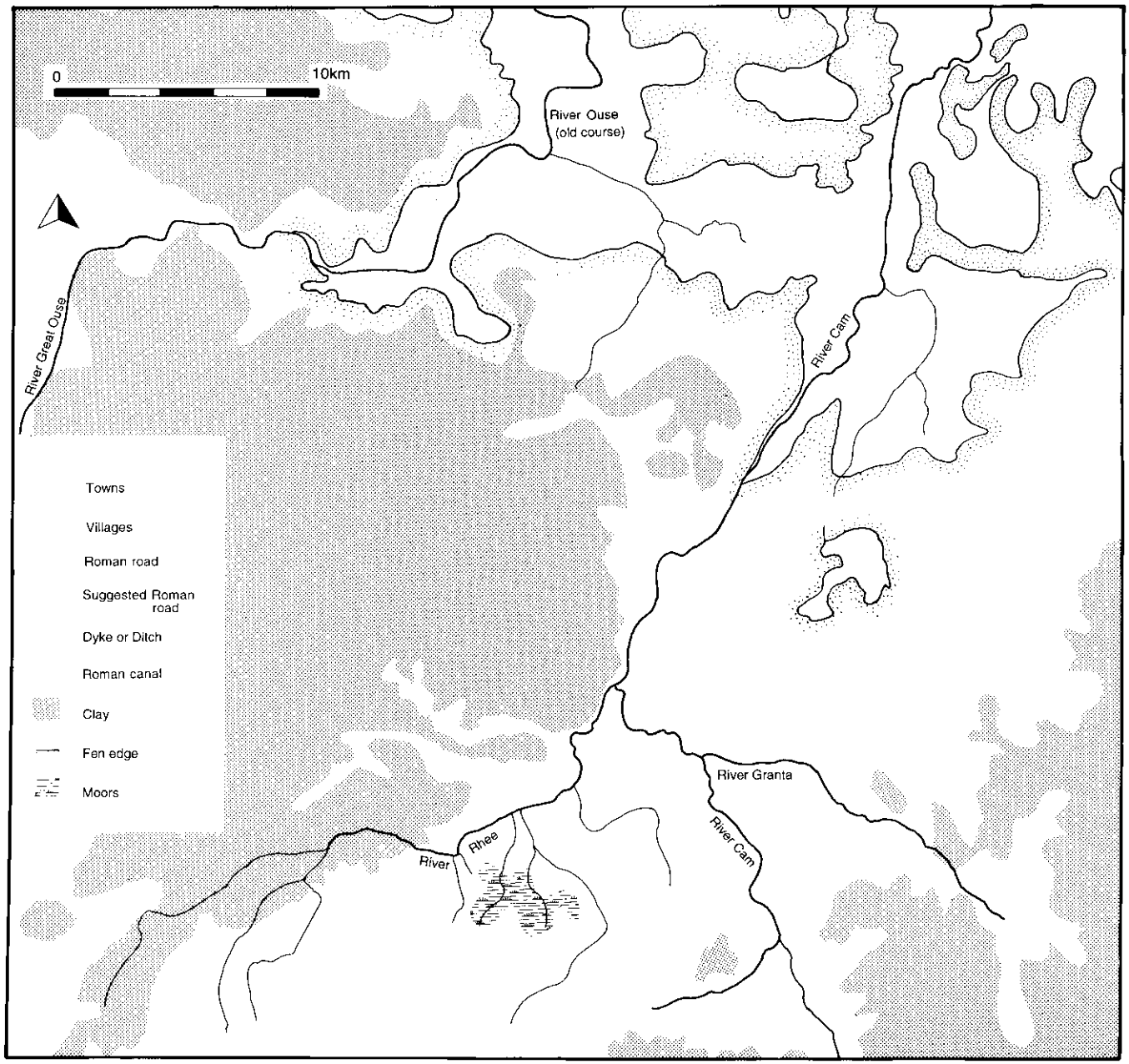

Figure 1.2 Ancient routes, drainage and geology with the claylands of the Chilterns visible to the south-east

Mildenhall. The incidence of late Saxon and medieval villages found along Ashwell Street, and the association of this route with the northern terminals of the Cambridgeshire Dykes (Malim 1997, 116), suggest that it may have been a very important route during Roman and Saxon times. A branch road from Melbourn might have run north-eastwards from Ashwell Street, parallel to the Rhee, past villas at Shepreth and Foxton, to join Mare Way at Harston, and to the north of Edix Hill a Roman villa closer to the cemetery is known at Harlton on the far side of Mare Way.

1.2 Historical background

The Anglo-Saxon history of the South Cambridgeshire area is very poorly served by documentary records. (For a thorough survey of the historical records of the parishes of Barrington and Orwell see Wright 1973 and Kermode 1973.) There are no pre-Conquest charters relating to this region. Largely on the basis of what appears to be a corrupt reading in Felix's mid 8th century *Life of Guthlac*, H M Chadwick rather boldly inferred that Cambridgeshire could be assigned to the territory of a shadowy early Anglo-Saxon group, the Middle Angles (*Mediterranei Angli*) (Chadwick 1907, 8–10; cf Colgrave 1956, esp 47–9 and 86–7). This view was incautiously quoted as virtual fact by Darby and Miller in volume two of *The Victoria History* of the county (Darby and Miller 1948, 377). More certain is the fact that this area passed under the dominance of successive overkings in the more powerful neighbouring kingdoms of East Anglia and Mercia, being

Figure 1.3 1989 trial trench looking north to the chalky ridge of Chapel Hill

effectively annexed to the latter by or during the 8th century.

During the Viking incursions of the second half of the 9th century the area must have been under Danish dominance from at the latest the mid 860s onwards, although Cambridge is only mentioned when the army overwintered there in 875. After the Treaty of Wedmore in 878 the area would have been part of the Danelaw. In 921 the local 'Danish' force (what the Chronicle refers to as the *here*), which then governed Cambridge, submitted to Edward the Elder. This was not as a result of any direct attack but rather, it seems, of being overtaken or outflanked by events in Edward's successful campaign against the army of Huntingdon. From this outline of Anglo-Saxon political history the significant conclusion can be drawn that the Cambridgeshire area seems consistently *not* to have been the focus of any territory or political entity of national significance. Its place on the Icknield Way did not see a strategically powerful centre grow up in South Cambridgeshire. This is an important perspective to bring to bear on the internal relationship of the Anglo-Saxon sites of South Cambridgeshire – not only the cemeteries and settlement pattern, but also the Dykes – and the character and connections of the community that was buried on Edix Hill in particular.

The Domesday records for Cambridgeshire, found in both the Domesday Book itself and collated in the *Inquisitio Comitatus Cantabrigiensis* (Salzman ed 1938, 335–428), are relatively good, and provide interesting information for comparison with the reconstructions of the Edix Hill cemetery community. The vills of Orwell – within which Edix Hill was presumably situated – and Barrington are those of most interest to us. They were of distinctly different value in the Domesday accounts. Orwell was assessed at four hides of land and had 22 peasants listed: three villeins, fourteen bordars, four cottars, and one serf. Barrington was two and a half times larger, at ten hides and with 54 peasants: twenty villeins, sixteen bordars, thirteen cottars, and five serfs. The number of peasants can generally be taken as representing the number of peasant households. A multiplier of four or five is usually considered to be appropriate in estimating the total resident population implied, while it is also thought that Domesday usually undercounts the population by 5% or so (Darby 1977, esp 87–91). In very broad terms, this implies a Domesday population in Orwell of about 100 (with a presumed margin of error of around 10–12), and in Barrington between about 220 and 280.

Barrington and Orwell were both part of Wetherley Hundred. The name *Wetherley* derives from a site in the wooded hills above Barrington and Orwell (Maypole Farm, Fox Hill, see section 1.1.2; Meaney 1993, 90): Old English (OE) *weðer* (wether, castrated ram) plus *leah* (grove or clearing in the wood). It is possible that Lun Way, the road from Orwell to the subsidiary settlement of Malton which forms part of the parish boundary, refers to the same spot with a term derived from Old Norse *lundr* (grove) (Reaney 1943, 27). The legacy of Viking-period Norse influence in this area is nicely reflected by a series of Scandinavian personal names amongst the current and pre-Conquest landholders of Orwell recorded in Domesday, one of whom, Thorbern, was one of the jurors.

Domesday is the earliest record of the Wetherley Hundred, and also of Orwell and Barrington. *Orwell*, Domesday *Oreuuelle*, is believed to derive from the OE elements *ord* (point, spur) and *wella* (spring). The village does indeed lie on the spring line by a spur from Chapel Hill (Reaney 1943, 79). *Barrington*, Domesday *Barentona*, apparently compounds the genitive of a personal name *Bara* with the common suffix *tūn* (Bara's *tūn*) (Reaney 1943, 70). Malton is first recorded as *Maketon* in 1200 (Reaney 1943, 79–80). Both *wella* and *tūn* occur as OE place-name elements in a list of vernacular place names recorded before 730 (Cox 1976), but Cox notes in both cases that the number of such examples in his list seems low in relation to their general frequency, and so argues that the majority of such names were formed later than 730 (1976, 63 and 65). Altogether, one can make no confident judgement as to the relative age of the place-names and the early Anglo-Saxon archaeological sites in the parishes of Barrington and Orwell.

Malton is the nearest known habitation to Edix Hill. The Royal Commission suggests that it is 'no doubt a pre-Conquest settlement' but its absence from Domesday Book argues against it having been a place of any consequence at that date (RCHME 1968). If it did exist, it was subsumed in the entry for Orwell. The OE place-name element *tūn* may have

given the impression that the settlement had pre-Conquest roots, but *-ton* remained an active suffix in the Middle English period, and an unrecorded ME *Malke* is just as likely as OE *Mealca*. Malton can therefore be regarded as a relatively short-lived settlement, probably never really big enough to be self-sufficient. This may have been at least partly due to the heavy and wet nature of the soil in the valley bottom, attested by such furlong names as Malton Ponds and indeed Edix Hill itself (ME *Edokkeshel*, water-lily corner), and its susceptibility to flooding. This land would have been difficult or impossible to farm before drainage began in the 19th century.

1.3 19th century investigations and coprolite workings

The Edix Hill cemetery (Barrington A) was first documented in 1860 following the discovery of a sword burial around 1840 and other bones in subsequent years, culminating in skeletons and artefacts being found in 1860 in the course of drainage works (Babington 1860). Excavations were conducted separately in 1860 and 1861 by Thomas Bendyshe and Joseph Wilkinson which uncovered approximately 40–50 burials. It was not until 1880 that a second cemetery at Barrington was reported by Walter Foster who excavated over 100 graves in Hooper's Field following its discovery and large-scale destruction by coprolite digging (Foster 1883). However, Foster remarks that 'the neighbourhood of Barrington has for some time been the scene of those coprolite diggings to which we owe the discovery and destruction of so many objects of antiquarian interest' which suggests that Anglo-Saxon artefacts had continued to be found in the twenty years between the discoveries at Edix Hill and Hooper's Field, and that during the same period coprolite workings could well have occurred near to the first cemetery. Similarly, reports of finds from Hauxton, Harlton, and other villages could well have been the result of where individual coprolite workers lived rather than the actual provenance of the finds (cf Ch 9, below).

Thus there has been confusion over the two cemeteries at Barrington for over 100 years. Fox offered a solution to the basic problem in his study of the archaeology of the Cambridge region (1923, 250–255), when he grouped together all finds earlier than 1880 or that had been reported as having come from Orwell, Malton, or Edix Hill as being from Barrington A, whilst finds from Hooper's Field and Barrington found after 1880 came from Barrington B. By 1923 the finds from the previous century had been dispersed to the Ashmolean and the British Museum as well as the Cambridge University Museum of Archaeology and Anthropology, various colleges, and private collections. The location he gave for the cemetery at Edix Hill is based on the memories of old coprolite diggers, whilst Hooper's Field had been plotted on to the first edition Ordnance Survey map of Barrington (1887).

The chronological sequence of reporting of finds is as follows:

1840 – 'A perfect skeleton was found with a double-edged sword by its side, on the land of Mr Pearse' (Babington 1860).

1860 – Skeletons found during drainage works at Edix Hill Hole; Bendyshe excavated up to ten, 'the remains lay upon a slightly rising slope'; some finds were given to the Museum of the Cambridge Antiquarian Society: these included three shield bosses, four spearheads, six knives, two brooches, and 100 amber beads. Parts of at least one skeleton were lifted and given to the 'Anatomical Museum' (Babington 1860).

1861 – Wilkinson excavated 37 skeletons on Bendyshe's land, within eleven acres tenanted by Joseph Worsley, and known as Edix Hill Hole. He refers to the previous finds reported by Babington as being removed by 'a gentleman from Cambridge' and goes on to say that on this occasion only one labourer was available 'owing to coprolite digging in the neighbourhood' and that 'The graves were situated on a slightly rising slope . . . the lower parts of the field are very wet . . . . There were no tumuli over the graves . . . though perhaps a careful observer might detect a kind of table-land, or large flattened tumulus'. He concludes that in total about 50 graves 'had been opened' at the site but that 'no instance of the sword occurs' (Smith 1868, 154–65) (see Table 3.4).

1880 – Foster excavated 114 graves at Hooper's Field on Trinity College land, tenanted by Mrs Wallis, at the west end of the village of Barrington. 'These graves were situated on the south side of some rising ground . . . There were no signs of tumuli or anything to denote the presence of graves'. The cemetery had been found in the process of coprolite digging and he concludes that 'judging from the number and richness of the specimens from the same spot which Mr Conybeare and Mr Griffith have laid before the Society this evening, I should consider that by far the greater part of the cemetery must have been opened before my arrival' (Foster 1883).

1880 – Artefacts and map shown to the Cambridge Antiquarian Society by Griffith and Conybeare (*Proceedings of the Cambridge Antiquarian Society, V, 1886, xii–xiii*).

1903 – Conybeare's collection of artefacts described, and it is noted that Foster's finds had been dispersed between the Museum of the Society, Trinity Library, Foster, and Conybeare (*Communications of the Cambridge Antiquarian Society, X (New Series IV) 1904, 434–439*).

1923 – Fox reviews the finds and assigns labels of Barrington A and Barrington B to Edix Hill and Hooper's Field respectively (Fox 1923, 250–255).

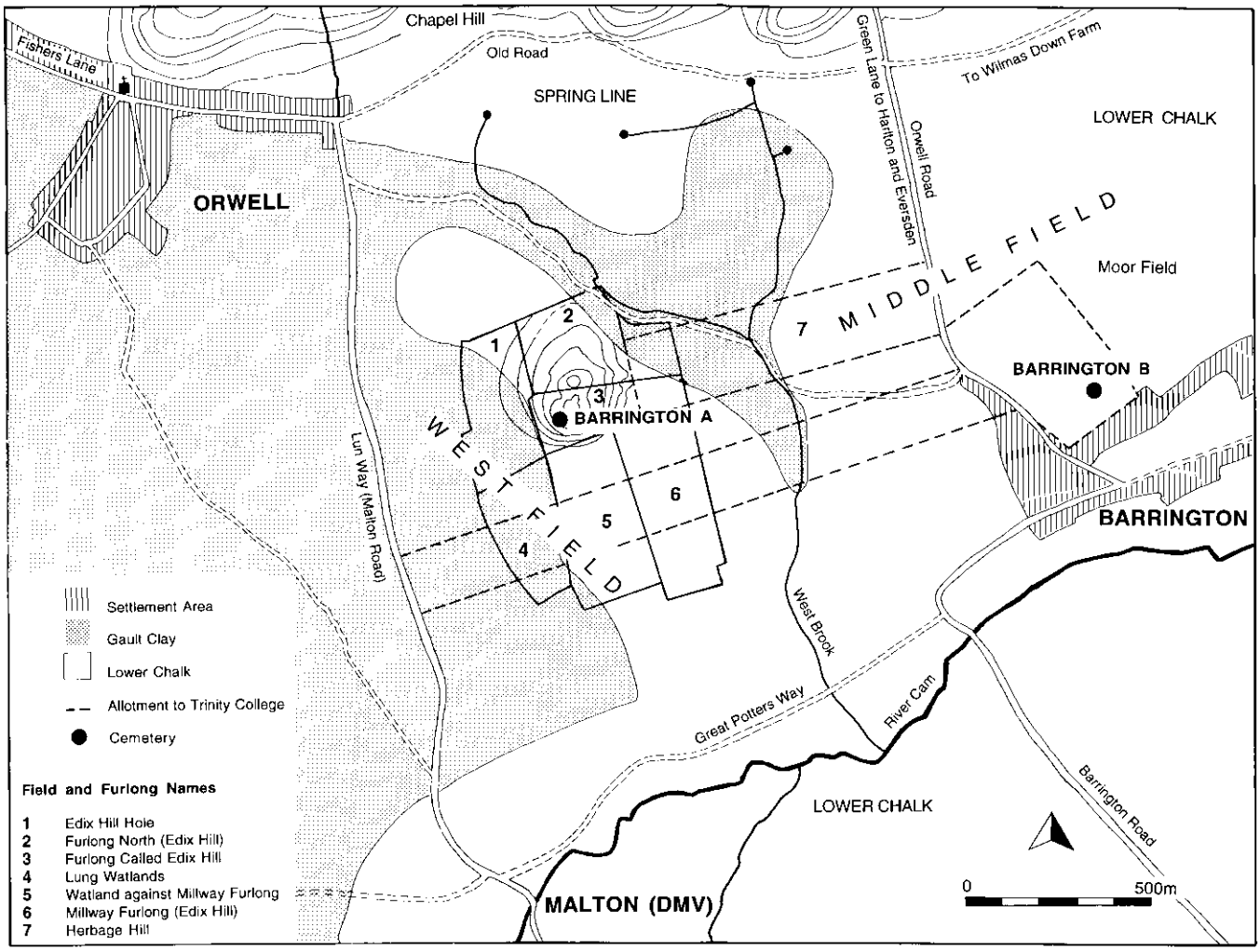

Figure 1.4 Map showing 1798 draft Inclosure with geology

1934 – Lethbridge, O'Reilly, and Leaf review the Griffith collection which had been bequeathed to the Museum of Archaeology and Anthropology on Griffith's death. Many of the artefacts had been labelled 1879, and therefore predated Foster's excavations (*PCAS, 1935, XXXV, 141–44*).

No contemporary maps exist which show the location of the cemeteries, or plans of the graves in the ground, but there are descriptions by the 19th century excavators of the topographic positions and names of landowners and tenants. Background cartographic evidence is best given in two maps:

(i) the 1798 draft Inclosure Map by Alex Watson which shows the medieval open field system of Barrington parish (West, Middle, and East Fields) complete with leys, strips, furlongs (with their names and acreages in the attached field book), streams, springs, footpaths, and roads (Trinity College, Cambridge, hereafter referred to as TCC, Great Chest; Fig 1.4);
(ii) the 1800 Inclosure Map with new fields allotted to landowners and with acreages included (CRO P8/26/1; Fig. 1.5).

The coprolite industry was very important in Barrington, Orwell, and neighbouring parishes during the latter part of the 19th century and many of the finds of Anglo-Saxon cemeteries from South Cambridgeshire came about as a consequence of this, as at Hooper's Field. Conybeare, the long-term vicar of Barrington in the 1870s and 1880s, is reported to have had a map of the parish with find-spots of artefacts (cf above), but it has not been possible to find this map in the archives of either the Cambridge University Museum of Archaeology and Anthropology or Trinity College where it might have been deposited in its own right or as part of the Griffith collection. However, there are Inclosure maps and documentary sources relating to coprolite workings from which it is possible to piece together some of the land occupancy and extent of mining seen in later years (Fig 1.5).

Edix Hill, unlike Hooper's Field, was initially discovered not through coprolite diggings but by drainage works. During the course of our recent excavations we have found ceramic drainage pipes of this period, sometimes cutting through burials and occasionally even showing us the sensitivity of the Victorian workmen who deliberately placed the

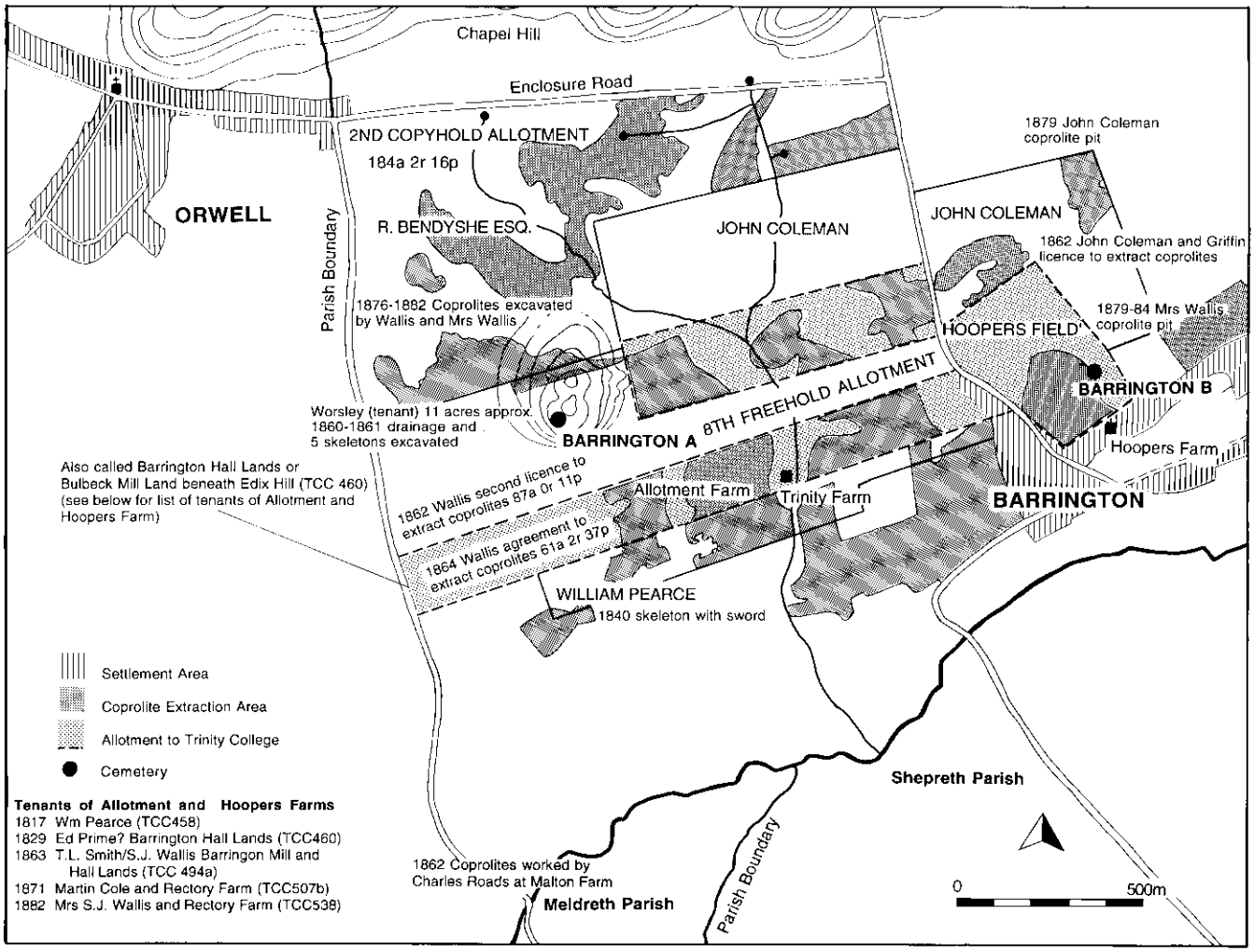

Figure 1.5 Map showing 1800 Inclosure and later 19th century coprolite working

bones back in the grave on top of the newly laid pipe. But we have also found evidence of coprolite workings around the knoll of Edix Hill, and have proof that the southern part of the cemetery (at least) has suffered damage from them.

In the light of the above information it was decided to review the evidence for cemetery locations at Barrington; to investigate the established view that there were two contemporary cemeteries surprisingly close to one another, and to consider whether they could be finds from the same cemetery. Fox had never questioned the location of Hooper's Field, and he had given the location of Edix Hill on the testimony of two coprolite workers, but it is perhaps unlikely that these old men would have been able to remember accurately the small-scale excavations undertaken by Wilkinson with one labourer during the winter of 1860. On the other hand, as coprolite diggers themselves, they may well remember the approximate location of the much larger scale and more recent excavations of Foster within the existing coprolite workings. Were they therefore referring to Foster's work which they identified as happening close to Edix Hill? The first burial referred to by Babington, from the 1840s, is reported as having been found on Mr Pearce's land, which can be seen immediately south of Edix Hill as we know it today (1800 Inclosure Map) beyond a long piece of land allotted to Trinity College (close to the location spot described for Barrington A by Fox), which suggests that the cemetery may have extended a considerable distance beyond known boundaries on to flat land south of Edix Hill (compare Figs 1.4 and 1.5).

What definitive evidence is there for the two cemetery locations? Unlike Fox, we know exactly where the Edix Hill site was situated (his description is in fact slightly erroneous), and it is worth looking instead therefore at the reliability of the evidence for the location of Hooper's Field.

Both sites have names attached to them in their excavation reports, and the 1887 OS map has marked the spot of Hooper's Field within the north-western edge of the village of Barrington. Was their information derived purely from the name, or from talking to people who showed them the find-spot? The description given by Foster also fits with this location; 'situated on the south slope of some rising ground in a field . . . at the west end of the village'. However, the land referred to as 'Hooper's Field' has a Mrs Wallis as the tenant of Trinity College, and

land which formed part of Hooper's Farm extended on the west side of the Orwell road to abut against Edix Hill on both its eastern and southern flanks (see Fig 1.5). A valuation of Hooper's Farm in 1817 (TCC 458b) shows the acreage of the farm as 69 acres 0 rods 12 perches, which is virtually equal to two areas on the 1800 Inclosure Map allotted to Trinity College (69 acres 0 rods 4 perches). These two areas are both at the north-western end of Barrington village and extend west of Orwell Road as far as Edix Hill. Part of the fields to the east of Edix Hill was known as Herbage Hill on the 1798 draft Inclosure Map and field book (TCC Great Chest) and the field to the south of Edix Hill was known as 'The Allotment Farm' (TCC 538). However, a valuation document of 1882 (TCC 538) demonstrates that all the land of Hooper's Farm together with Allotment Farm was under the same tenancy of Mrs Wallis. It is clear that the total acreage under discussion combines the farmland of Hooper's and Allotment Farms. Thus 'Hooper's Field' may not be a specific name but might instead refer to any farmland belonging to Hooper's Farm, and the topographical position for the cemetery given by Foster could be found not only where the 1887 OS map has it situated, but also at Herbage Hill, on the east flank of Edix Hill itself, or on Allotment Farm on the south side of Edix Hill.

It would seem very likely that the husband of Mrs Wallis was a well-known local coprolite entrepreneur called Swann Jepp Wallis, who had been the first man to gain an extraction licence for mining coprolites in 1862 from John Bendyshe. A second licence soon included 87 acres on the '8th Freehold Allotment' tenanted by Joseph Worsley (O'Connor pers comm). This is clearly the same land as that described by Babington and Wilkinson (see above), in other words Edix Hill and the lands on either side stretching between Malton Road (Lun Way) and the Barrington–Orwell/Harlton road (TCC 494a and b; 1800 Inclosure Map; see Fig 1.5).

By 1864 Wallis had a licence from Trinity College to mine two fields south of his earlier workings, totalling 61 acres 2 rods 37 perches. This acreage can be identified exactly on the 1800 Inclosure Map as a long field directly south of Edix Hill which was later known as Allotment Farm (see Hooper's Farm above). By 1869, 40 acres had been dug by Wallis on Trinity College land, 9 acres 1 rod 27 perches of which was at 'Edrick's Hill' (O'Connor pers comm; see Fig 1.5).

Coprolite diggings on the north side of Edix Hill appear to have occurred during the 1870s on Trinity land copyhold to Bendyshe. There is various correspondence and disputes regarding claims for payment (TCC 527a and b; 526L; 528b) some of which refer to Wallis again as the actual contractor. Sketch maps show the extent of these workings at 'Edricks Hill' in 1876 (TCC 505L; see Fig 1.5) by which point 6 acres 0 rods 11 perches had been excavated, and again in 1882 which showed a total quantity of 18 acres 2 rods 21 perches dug by Wallis, who died in 1876 (O'Connor pers comm), his son and his widow.

It is therefore clear that a large amount of coprolite digging was undertaken around Edix Hill throughout the period 1862–1882, in the course of which Anglo-Saxon artefacts could have been discovered. What evidence do we have, meanwhile, for coprolite extraction in the immediate proximity of Hooper's Farm itself, in the position of Hooper's Field as marked on the 1887 OS map? There are two important references; firstly in 1862 John Coleman (copyhold) was given a licence by Trinity to extract coprolites from four plots in Middle Field, a total of 47 acres 0 rod 24 perches (O'Connor pers comm). Although these quantities cannot be traced on the 1800 Inclosure Map it can be assumed that they relate to land held by Coleman immediately north of Hooper's Farmland on both sides of Orwell Road, and in fact in 1879 a sketch map confirms some of these workings on the eastern edge of this location (TCC 526F). Secondly, a tracing with sketch maps of Hooper's Farm in three allotments (dating to approximately 1880) shows that all this land was surveyed by borehole for coprolites (TCC 533). A valuation by Bidwells in 1882 of Mrs Wallis's tenancy (TCC 538) gives the acreage of Hooper's Farm in three allotments to be exactly the same as the acreages shown on the 1800 Inclosure Map, and clearly reveals the extent of the farm. Therefore, coprolite working could have taken place on any of this land, and indeed we know that it certainly happened on the part of it known as Allotment Farm. In addition to all the above information on the extent of the farm and its potential for coprolites, there is also a map showing the areas mined until October 1879 (TCC 529f), with a list of further quantities extracted until 1882, and payments to Trinity College until 1893. This map actually has the name Hooper's Field clearly marked, and the tenant is Mrs Wallis. It therefore represents the most concrete evidence we have for the location of the cemetery – one which corroborates the spot marked by the Ordnance Survey.

This overview of the documentary evidence shows that much coprolite working took place not only at Hooper's Field but also at Edix Hill and that artefacts and burials found by coprolite mining could well include finds from Barrington A cemetery. It might explain why Fox's informants could remember the location of the Edix Hill burials – a location inaccurate according to recent excavations, but one that is similar to the location of the first burial reported on Mr Pearce's land by Babington, and similar to one area worked for coprolites by Wallis. Thus the better known find of Hooper's Field cemetery as part of coprolite mining could equally relate to workings close to Edix Hill as it is clear that Trinity College land and part of Hooper's Farm, with a topographical description similar to that given by Foster, and tenanted by Mrs Wallis, certainly abutted Edix Hill. The weight of evidence comes down heavily for vindication of the original OS location of Hooper's Field as shown on the 1887 map because there is one sketch map from Trinity College archives which

Figure 1.6 Excavations of burial found in 1987 on the brow of Edix Hill looking east towards the cement works at Barrington

shows an actual 'Hooper's Field' with its list of coprolite revenues positioned adjoining Hooper's Farmhouse north of the green at Barrington. Perhaps it is surprising that no mention is made of antiquities in this documentation when we know from other agreements, such as that in 1868 between Charles Roads and Richard Bendyshe on Barrington Farm (O'Connor pers comm), that they are specifically referred to as being the property of the landowner. Nonetheless, from all the available information described above, we must conclude that two cemeteries were in existence simultaneously, and remarkably that the somewhat haphazard nature of coprolite trenching avoided the main part of the Edix Hill cemetery. It is possible that some of Hooper's Field may also still lie preserved, and the final proof for location of this cemetery could be obtained through a programme of small-scale evaluation excavation.

Why were there two cemeteries so close, and where did the contemporary communities live? The 1798 draft Inclosure Map shows a stream running from several springs (which outcrop along the base of Chapel Hill) southwards to the River Rhee. This stream was called West Brook and seems to have formed an important territorial division in the medieval field pattern. An ancient system of footpaths can also be seen, with the old (pre-inclosure) road from Orwell winding along the base of Chapel Hill to the north of the springline, and with a parallel west–east path beside the River Rhee (Potters Way). Two footpaths ran from Orwell towards the southeast, one to Malton, and the other to Barrington by way of a tributary of West Brook, and one which would have passed close to the sites of both cemeteries. This pattern suggests that Lun Way (Malton Road) and the present Barrington–Orwell/Harlton road were later (medieval) additions with a different alignment, and that the parish boundary, which runs along Malton Road and which is disproportionately close to Orwell, may in fact have moved and replaced an earlier boundary which would have separated the precursor communities of Orwell and Barrington. It is suggested that this presumed earlier boundary was along West Brook, which would place the cemeteries of Edix Hill and Hooper's Field equidistant from it, a situation similar to that seen, for example, for the churches at Great and Little Shelford, each a little distance either side of the river boundary. Further work on the boundaries of Anglo-Saxon estates are necessary to explore this hypothesis more fully.

Much fieldwalking over Edix Hill and the surrounding land, as well as extensive work at Malton, have failed to show any signs of settlement, and it would seem logical that the area to look at in detail would be along the springline and the old road at the base of Chapel Hill. Medieval Orwell appears to have spread not only around the church and green, but also eastwards along the road at the base of Chapel Hill. Perhaps this part of the village was not so much an expansion from the village core but rather a reflection of earlier dispersed settlement occurring along the springline from which the later medieval village of Orwell developed.

Physical evidence for domestic occupation from the area has been suggested by the presence of pin-beaters at the Cambridge University Museum of Archaeology and Anthropology which have a provenance of 'Vicarage Way', Barrington. Although such a name is unknown in the village the finds are thought to come from a site near a river-crossing place close to the Vicarage (Widdowson nd). Anglo-Saxon pottery has been briefly reported from Orwell (Cambridgeshire Sites and Monuments Record) although the lack of any detailed information about it and the known problems of distinguishing between Iron Age and Anglo-Saxon pottery makes such unsubstantiated claims of little value to the present work.

1.4 Circumstances of the present work

Much activity at Edix Hill had been reported during the 19th century but no further finds were identified as having come from the site until, in 1987 and 1988, metal-detecting finds were reported to the County Archaeology Office. On both occasions staff of the CAO excavated at the find spots, discovering skeletons and other grave goods only 0.25–0.3m below the surface of the field (Fig 1.6). These finds demonstrated that the exact location of the Edix Hill cemetery had been rediscovered, and also displayed the extreme vulnerability of the shallow graves to modern ploughing, the susceptibility of artefacts and bones to the impact of drainage and agro-chemicals, and the very real threat from unmanaged metal-detecting.

Attempts to implement measures that would ensure long-term preservation of the site were rendered impossible because grants from the National Heritage Memorial Fund could only be made for individual artefacts rather than for their preservation *in situ*. Protection of the cemetery as a scheduled ancient monument was regarded as inappropriate by

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English Heritage, whilst agricultural and environmental incentive schemes to protect the site under grass management were not sufficiently attractive to persuade the owners to cease ploughing. As a result, the decision was taken to excavate and record a large sample of the surviving cemetery, and three seasons of excavation were carried out at Edix Hill, Barrington, during the summers of 1989–1991. These excavations were permitted by Messrs Breed, the landowners, who also generously donated the finds for immediate study by the project and then for long-term storage at the Cambridge University Museum of Archaeology and Anthropology. The work was funded by South Cambridgeshire District Council, English Heritage, and Cambridgeshire County Council.

Chapter 2 The excavations

2.1 The aims of the investigation

An evaluation excavation was conducted in 1989 to locate the general extent of the cemetery at Edix Hill, which had been poorly recorded when first discovered in the 19th century. In addition the evaluation was designed to assess the state of survival and clarify any potential threat to the burials.

Following on from this first phase of work further programmes in 1990 and 1991 were undertaken as rescue excavations. These examined the site in more detail by uncovering and recording an area large enough to be representative of the cemetery as a whole, and by investigating the nature of earlier activity largely evident as a mass of ditches and pits.

2.2 Strategy and methods

A programme of surface survey by fieldwalking, metal-detecting, and magnetometer, followed by archaeological excavation using trenches and open areas, was designed in order to establish the extent of the cemetery, and to record a broad spectrum of the activity at Edix Hill, spatially and temporally. Full excavation was never a possibility because of the prohibitive cost of such an exercise (although academically it is desirable to have as full a dataset as possible from a discrete cemetery) and because of the desire to leave some of the cemetery intact for possible archaeological investigation using alternative techniques in the future. Such a programme of investigation also enabled a methodological comparison between various non-intrusive techniques, and the validity of their interpretation and use in regard to Anglo-Saxon cemeteries measured against the subsequent information obtained by excavation.

Fieldwalking was conducted during 1988, 1989, and 1990, as areas in the fields became available and when permission from landowners was obtained. This survey was partly undertaken by County Council archaeologists concentrating on the central area of the brow of Edix Hill, and more extensively on all sides of this central area by volunteers from the Cambridge Archaeology Field Group.

Metal-detecting was conducted over the main area of Edix Hill in 1989 by means of a general scan undertaken by members of the Soke Metal-Detecting Club, and also on a closely measured grid in one 0.45ha area by two other metal-detector users.

An extensive magnetometer survey was conducted over 1ha of the brow and sides of Edix Hill in 1990 (Figs 2.1 and 2.2). Results were available for helping to plan the 1991 campaign and enabled linkage of the main linear features identified by excavation in different trenches during the three seasons. Neither resistivity nor ground-sensing radar proved to be successful although attempts were made on site to see if they would be useful techniques.

A series of 100m × 1.5m linear trenches (I–VIII) were laid out in 1989 over the highest point and dip-slopes of Edix Hill in order to locate the cemetery, to gauge its general extent, and to assess the condition of survival of the burials (Fig 2.3). In 1990 a 400 square metres (20 × 20m) area excavation (Trench X) was centred on the concentration of burials revealed in 1989's Trench I (Fig 2.4). Trench VII was also reopened on a wider scale as Trench XI principally to examine whether the cemetery was enclosed by a bank and ditch as suggested by the 1989 results. Trenches XII–XVI were opened in 1991 as a more extensive programme of investigation covering a further 2000 square metres designed to examine areas north and south of Trench X on the brow of Edix Hill (the approximate centre of the cemetery), and to look in detail at the peripheries of the cemetery to west, east, and south (Figs 2.1 and 2.5). During this season it was also decided to elucidate selected aspects of the prehistoric occupation which had emerged as a major element of the site during 1990, but such work was given a secondary priority compared to the investigation of the Anglo-Saxon cemetery itself.

The design and purpose of the five trenches and areas excavated in 1991 were as follows. Trench XII was an H-shape designed to examine the boundary ditches and interior of an enclosure identified by magnetometer and believed to be of Iron Age date. Trench XIII was an inverted T-shape designed to examine the southern extent of the cemetery, continuing from the southern limit of 1989's Trench I to the limit of land available for excavation during 1991. Trench XIV was laid out on a north–south axis and was designed to examine the eastern extent of the cemetery, as well as some of the horseshoe-shaped ditches detected by magnetometer. It was found necessary to have two additional arms running east to supplement this information, and the discovery of a segment of ring-ditch in the northern one of these required a further extension northwards in order to define its whole extent. Trench XV was a reversed E-shape and was designed to examine a large area immediately north of Trench X to define the northern limit of the cemetery, and for the further investigation of pits and ditches seen in Trench I in 1989 which could indicate settlement remains. Trench XVI was a 10m square area designed to examine the terminals of Iron Age ditches found in Trench X.

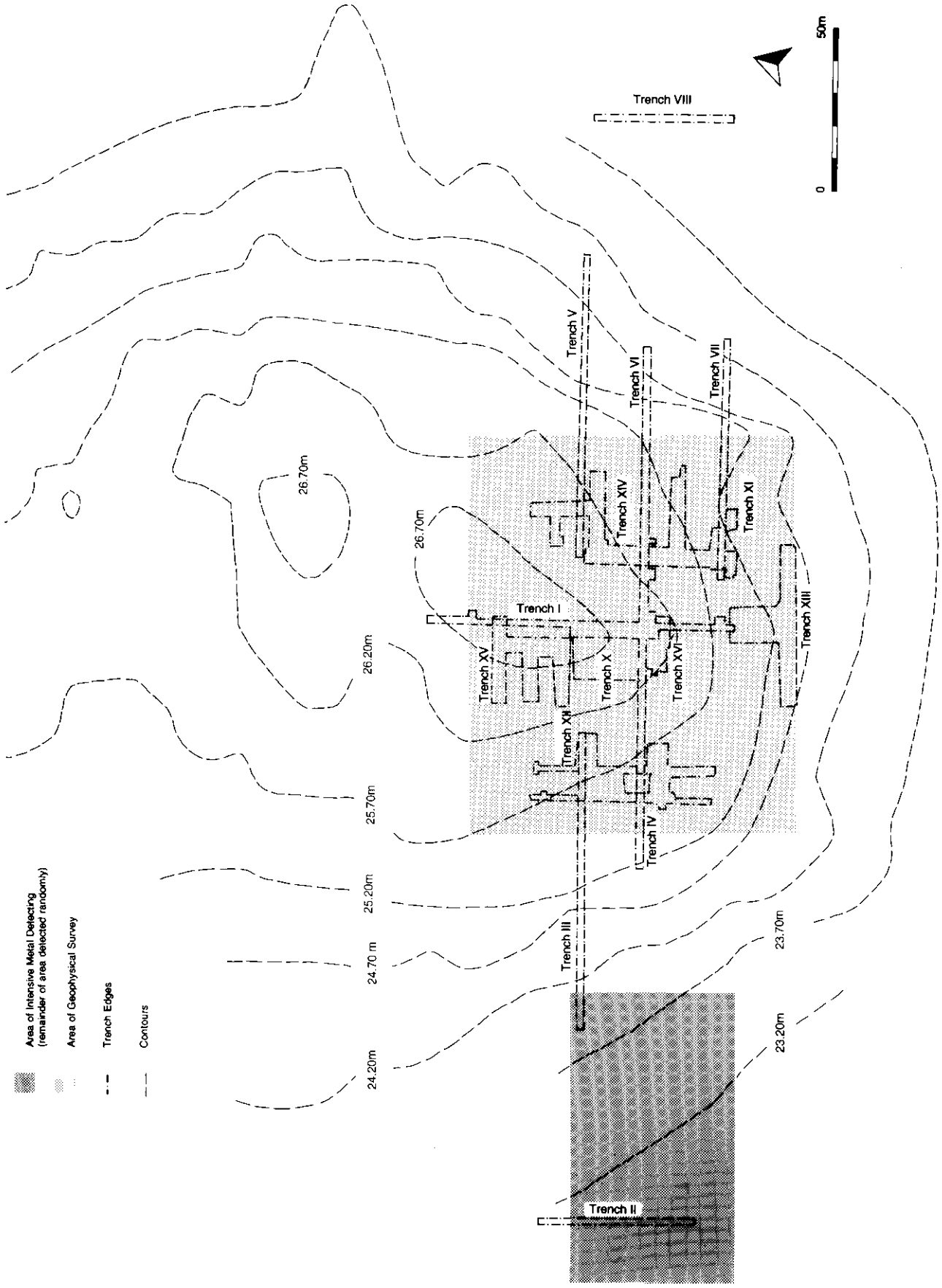


Figure 2.1 Plan of trenches

Figure 2.2 Geophysical and excavation results (with burial overlay)

Figure 2.3 View of 1989 evaluation excavations looking south. Note in the foreground grave 1 with grave 2 under excavation beyond and bones from skeleton 3A spread by the plough into the area between the two graves

All trenches were topsoiled by mechanical excavator except for a five square metres (2×2.5m) area on the south-eastern corner of Trench XV which was taken down by hand to act as a control for artefact retrieval in the ploughsoil. All burials and other features were excavated by hand and plans executed at 1:10, with 1:1 plans for details of complex artefact groups. A variety of colours was used to identify artefacts of different material on the burial plans, and this helped to clarify reconstruction of grave-assemblages during post-excavation work. In addition, a number of pro-forma record sheets for contexts, samples, artefacts and burials, and site notebooks were used to record the excavation as effectively as possible. Context numbers were assigned sequentially from 1–99 for 1987–9, 100–299 for 1990, 300–800 for 1991. As this was a relatively uncomplicated rural site most context numbers were used as the cut for a feature, with fills identified as subdivisions of the main context number. Context number 1000 was used for topsoil and unstratified finds. Photographs in monochrome, colour print, and transparencies were taken of all burials, and high-rise photography was provided by courtesy of Cambridgeshire Fire and Rescue Service.

Over the three excavation seasons all burials found in the trenches were excavated, except for five possible ones from 1989 when time constraints prohibited this, and one definite one in 1990 (grave 64) found on the last day of the excavation in an Iron Age ditch under the western section! During 1991 all graves exposed in the five trenches were fully excavated and recorded, and in addition soil samples were taken from abdominal and chest areas of all burials to look for stomach contents and parasites, and for evidence of flowers or other plants deliberately laid on the body. In 1991 samples were also taken from the soil above and below the left femur as a control for trace element analysis for heavy metals, used as indicators of diet.

Although pre-excavation and post-excavation plans were made of all areas opened in all three seasons, only a sample selection of features such as pits, postholes, and ditches were subsequently investigated in the time available. Dating evidence suggested that the vast majority of pits and ditches were Iron Age and a limited policy of sampling was adopted to investigate these. In Trenches I–XIII few Iron Age features were examined, but in Trenches X and XI most pits and postholes were investigated, and a series of slots through ditches were excavated by context and spit level within any particular fill. In Trench XII virtually all features were excavated, whilst in Trench XIII only one ditch seemed to survive from an area that had been almost completely disturbed by coprolite trenching in the 19th century. Three ditches, two pits and a posthole were sectioned in Trench XIV, whilst the extremely complex pattern of intercutting pits in Trench XV would have required considerably more time than was available to examine adequately, and only eight pits and five ditches were sectioned in this trench. In Trench XVI a single large Iron Age ditch had a section cut through it.

Specialist osteological advice was provided by Corinne Duhig who visited the site during the first two seasons and was present throughout the final season. Advice on the complexities of Anglo-Saxon cemeteries was provided on site by Audrey Meaney, supplemented by many visiting specialists. Of crucial importance was the rapid identification of possible bed-burials by Catherine Hills. Richard Darrah advised on the detailed recording of their excavation in order to help with their later reconstruction.

Many of the skulls were fragile and had been shattered, and these were therefore lifted to be excavated under laboratory conditions. Kathy Tubb from the Conservation Department of the Institute of Archaeology, London, advised and aided in these lifting operations, and also in the lifting of delicate artefacts. After identifying which skulls or artefacts were potentially too fragile to excavate normally, and after consultation to decide whether the bone or artefactual evidence took precedence in any particular case, a block of chalk was lifted with the skull or object on it by cutting the chalk natural around and

Figure 2.4 Excavations in progress in 1990 (Trench X) from the west. Note the shallowness of the soil covering the site (0.2–0.3m) and the burials cutting the dark lines of Iron Age ditches. The dark area between the two ditches (middle left) was formed by the remains of a barrow mound. A bed-burial, the skeleton of a small dog and two further graves were found in the barrow

beneath it. The block was bandaged with plaster of Paris around the sides and aluminium foil spread over the cranium and plastered to the bandaging. Skulls were found to maintain their microenvironment for months when stored after excavation. With some skulls it was possible to lift out large vault fragments first, thus lessening the weight of the block by enabling removal of much of the soil in the interior. However, there are a number of drawbacks to lifting material in blocks for later excavation in a laboratory: (i) the problem of bones drying-out and cracking if the blocks are not dealt with quickly or are stored in the wrong conditions; (ii) the problem of integrating extra artefacts, small-find numbers, and other data with the main excavation records and post-excavation catalogues; (iii) the delay in obtaining a complete picture of a burial and its contents.

2.3 Summary of survey results

2.3.1 Fieldwalking results

In much of the East Anglian region Anglo-Saxon cemeteries have been found whilst their associated occupation areas have eluded detection. In order to try to find the associated settlement for Edix Hill large areas near to the cemetery were fieldwalked. During 1988 and 1989, 8ha over the brow of Edix Hill were fieldwalked by members of the excavation team, whilst 20ha were walked by the Cambridge Archaeology Field Group (CAFG) during 1989/90.

Identifiable Iron Age pottery (much of it at first thought to be Anglo-Saxon by association with the cemetery) and some bone were found as a spread north–south along the ridge of Edix Hill, with a concentration across the southern tail of the knoll, just outside the excavated areas. Four Celtic copper-alloy coins were found just south of the main areas of excavation.

Romano-British pottery scatters were concentrated just south of the excavations, and a thin spread of sherds continued westwards towards the Orwell–Malton road. Metal finds were concentrated on the south-east of the knoll. They consisted of six coins and four brooches, including bow, trumpet, and dolphin types.

Anglo-Saxon pottery could not definitely be distinguished from the Iron Age assemblage, whilst later (medieval and post-medieval) finds were scattered on either side of the hill.

Further fieldwalking has been undertaken by

Figure 2.5 Aerial view of Edix Hill showing trenches opened in 1991 and outline of areas previously excavated

CAFG to the north of Edix Hill in the fields immediately south of the present Orwell–Barrington road. This was chosen as a likely area for settlement based on evidence for a springline and the fact that this area was situated on dry chalkland, separated from the cemetery by a band of Gault Clay which would probably have resulted in very wet ground conditions for at least part of any year. A concentration of pottery has been found which may indicate settlement, but positive identification of the pottery as Anglo-Saxon rather than Iron Age has not been possible.

In addition nearly 100ha were fieldwalked on the north side of the river Rhee, west of Malton Farm (Kemp and Malim 1990). It has been suggested that this might have been a settlement associated with the cemetery at Edix Hill as Malton is possibly a pre-Conquest village (cf pp 6–7). However, fieldwalking produced nothing to support this theory.

2.3.2 Geophysical results

In October 1990, Geophysical Surveys of Bradford undertook a magnetometer survey of 1.2ha covering the brow of Edix Hill. This work had a dual purpose:

i) to give information that would assist in planning an excavation strategy
ii) to test the applicability of geophysical survey (in this case by magnetometer) to locate graves with accuracy, enabling rapid planning of the extent of a known cemetery.

The excavations during 1991 were then used to monitor the results of the survey, and assess its validity as a useful technique for investigating cemeteries.

A Fluxgate Gradiometer (Geoscan FM36) was used for the survey and 800 readings were taken in each 20m square grid. Three types of result were plotted:

i) several linear anomalies representing large ditches and ditched enclosures
ii) grave or pit-type anomalies
iii) points of high ferrous anomaly (in the hope that this would reveal the position of some graves).

Excellent correlation of the major features plotted by magnetometer with the pits and ditches encountered during excavation was achieved, with the clearest geophysical responses occurring in the central area of the survey (ie the brow of Edix Hill and area with least depth of topsoil). This may have been due to the larger size of these features, their proximity to the surface, or to an enhanced fill which often results from increased activity such as habitation. Subsequent excavation suggested that all these

causes contributed to the strength of the linear anomalies. Four pits shown on the geophysical survey were found to correspond to four Iron Age pits excavated in Trench XII (see Fig 2.2). Indeed all features interpreted as pits and ditches on the magnetometer plot over areas that were later trenched or had been investigated during previous seasons were tied into existing archaeological features. Identification of individual graves, however, was successful in only six cases. Of these four had shown up as ferrous signals (grave 76 and grave 98 had spearheads, grave 106 a spearhead and a latch lifter, and grave 109 a latch lifter), whilst the other two were deep-cut graves that showed up as pits, aligned on the geophysical plot in the same way as the graves. Three other ferrous objects detected by the magnetometer were located in Trench X (excavated in 1990), and these seem to be accurate representations of the location of steel grid pegs which had been hammered into the chalk to provide key points for relocating the site grid.

2.3.3 Metal-detecting

In September 1989 a team of archaeologists and metal-detector users undertook a survey of the knoll and surrounding land to see if sufficient evidence was available from surface data to map the area of the cemetery. Conditions for survey work varied as half the area under study had been ploughed and harrowed, whilst a 50m wide band running straight through the site had been left in stubble. Both types of ground were dry.

As the burials in 1987/8 had been found by Chris Montague with the use of a metal-detector it was proposed to prospect the area thoroughly with metal-detectors operated by experienced operators. Members of the Soke Metal-Detecting Club and several local enthusiasts conducted a survey over 300 × 100m in two ways: a) a controlled strip of 50 × 90m was covered in 1m transects and all signals marked and plotted on to a 1:500 plan; b) the remaining area was covered by random detecting in one direction, then crossing the same area at right angles with detectorists 5m apart. With this second approach only very loud signals were marked, whilst other notable signals were dug by the finders to a few centimetres depth in the plough soil. If the object went deeper the signal position was marked for later excavation.

Overall, the 0.45ha of plotted metal-detecting produced 680 signals which showed no obvious patterns to help us decide where there might be burials. Of the signals eleven were non-ferrous, all of which were modern items except the top of an Anglo-Saxon small square-headed brooch (1000 Δ2). The iron signals were not excavated. Different field conditions did not unduly affect the work, although the survey went faster and produced a slightly higher percentage of signals from the ploughed area than from that with stubble. The paucity of recovery, however, needs to be weighed against the fact that when a trial trench was put through this area it revealed no burials or other ancient features at all.

The area covered by blanket (random) metal-detecting produced surprisingly few deep signals, and conditions on the ploughed and harrowed area were definitely preferable to the stubble band. Some of the machines that were used can detect to a depth of 0.3–0.35m, and yet the most interesting finds were a Tudor half coin and a medieval jetton. Burials were not detected by this method. It was noted that there were a great number of signals in the area examined but that the proportion of non-ferrous to ferrous was remarkably low. This led to the conclusion that the site had been well combed in the past and much of the non-ferrous material collected and removed by previous metal-detector users.

Detecting by Chris Montague in the period from 1987–1991 shows that metal finds have been found all over the knoll, with concentrations to the south and east. These artefacts include: an openwork disc; cruciform and disc brooches; a copper-alloy girdle hanger; copper-alloy buckles and studs; iron spearheads and knives; a unique shield fitting in the form of a miniature gilded sword; and bits of shield-boss. Parts of a possible Bronze Age dirk, an Edward III silver penny, and a medieval jetton have also been found, as has a thin scatter of worked flint including a Neolithic flaked axe (see grave 29). Animal bone was not collected, but human and animal bone was noticeable in the ploughsoil on the knoll.

2.4 Summary of excavation results

The earliest activity at the site appears to date from the Bronze Age with the identification by excavation of a shallow ring-ditch 18m in diameter on the brow of Edix Hill. A piece of residual Bronze Age pot and a large jet ring of probable Bronze Age date have been found in the fills of Iron Age features, whilst a reworked Neolithic flint axe was found in grave 29, and parts of a possible copper-alloy dirk were found during metal-detecting. Such finds suggest that the dry and prominent position of Edix Hill had already been selected for burial during this early period. Such a location for burials set amidst wet marginal land can be found to have many parallels in the area.

During the Iron Age there appears to have been intense settlement at Edix Hill, represented by numerous pits associated with domestic occupation, and ditches and fence lines for the control of stock. There was considerable reuse of the site over a long period of time with main ditches recut a number of times, and complexes of intercutting pits. Pottery from this period is largely late and covers at least 100 years, into conquest times. It shows a great variety of vessel forms and fabrics, some imported whilst many have affinities with the Thames valley. Several discrete pits appear to have collections of early Iron Age pottery, and deliberately placed deposits of cattle skulls and dog skeletons were found in others.

Attributed to this period was also one burial (feature 149), grave 49, which appears to have been earlier than Anglo-Saxon date as it was found carefully slotted into an Iron Age ditch and was accompanied by a 1st century AD fibula. In addition its jaw had been placed between the legs which was a custom not uncommon in Roman times. Such factors strongly suggest that this burial was Iron Age or Roman.

An early Roman presence is evidenced by 1st or 2nd century pottery found in the tops of many features. These probably derive from slumping into partially filled Iron Age ditches and pits and indicate definite activity in the vicinity beyond spreads of pottery left by manuring. However, the spread of Roman metalwork which could be interpreted as showing Roman occupation at Edix Hill is not supported by the relatively low densities of ceramic material and the lack of virtually any identifiable features of this period after the 1st century AD. It can, however, be explained as a continuation of occupation at Edix Hill of an Iron Age tradition during early post-conquest times. As outlined above (section 1.1) a Roman villa is known at Harlton to the north, and others occur to the south across the River Rhee at Foxton and Shepreth. Edix Hill is also well positioned near to several Roman roads and prehistoric routes.

A separate report on the earlier phases of the site will be published in due course (Malim forthcoming 1998) with contributions by Morag Woudhuysen (pottery) and Simon Davis (animal bone).

Cut into the filled-in ditches and pits of the Iron Age settlement were one Iron Age and 114 Anglo-Saxon graves. There was also a small number of other features, such as some postholes, which can be assumed to be of this later date by direct association with graves.

No features such as ditches or postpits were found which could be interpreted as cemetery boundary markers.

II Material evidence

Chapter 3 The graves

3.1 The graves: morphology, structures, and stratigraphic evidence

3.1.1 Introduction

The shallowness of burial at Edix Hill generated little vertical stratigraphy. However, there were a number of occasions on which graves were found to cut one another, or to contain more than one burial. This allows stratigraphic sequences to be established for some of the Anglo-Saxon burials and the following discussion explores these relationships as well as examining the nature of each burial (Ch 3.2) and the factors that affected preservation. During excavation 115 burial locations/graves were identified (Fig 3.1) some of which contained more than one burial (this number excludes empty and unexcavated grave-like features, but includes the redeposited skeleton Sk591 (grave 104) and the unexcavated grave 64). Subsequent analysis has given a minimum number of individuals of 148 (in this case excluding the skeleton in grave 64 which was not available for analysis). Included with the skeletons during osteological examination was Sk149 (grave 49) which is not considered to be part of the Anglo-Saxon cemetery community but more probably an Iron Age burial.

The graves were either cut into natural subsoil and chalk, or into the filled ditches and pits of Iron Age occupation. Some burials were found to have been disturbed by later activities such as 19th century excavations, or modern metal-detecting and ploughing, and some may have suffered, in addition, from the mechanical excavator used for topsoil stripping before each season's excavation.

Agricultural damage can be assigned to three main causes: i) compression from heavy machinery leading to shattered but complete skulls and other bones; ii) normal ploughing, detected as swathes cut through the skeletons, dislodging or scattering articulated bones; iii) pan-busting (deep ploughing) which can be seen as a single plough scar running through the skeleton (often not displacing other parts of it) and probably apparent in the chalk and grave-cut.

Grave disturbance by 19th century digging produced a jumbled mass of very broken up bone, devoid of articulation and accompanied by virtually no grave goods (Fig 3.2). Sometimes clay-pipe stems or drain-pipes dating to the 1840s were found very close by. Although some of this grave-robbing might have originated from drain digging, other examples show drains running through skeletons without further disturbance. Coprolite digging also occurred at Edix Hill and it seems likely that some of those engaged

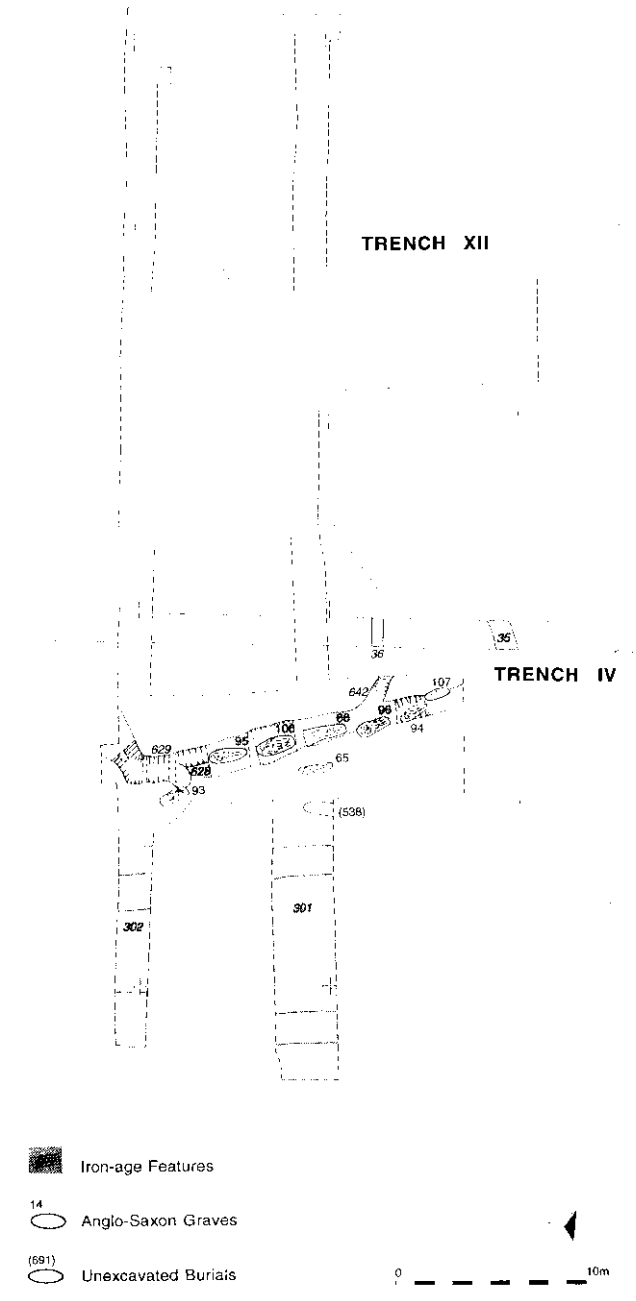


Figure 3.1a Distribution of Anglo-Saxon burials in relation to selected Iron Age features: Trenches IV and XII

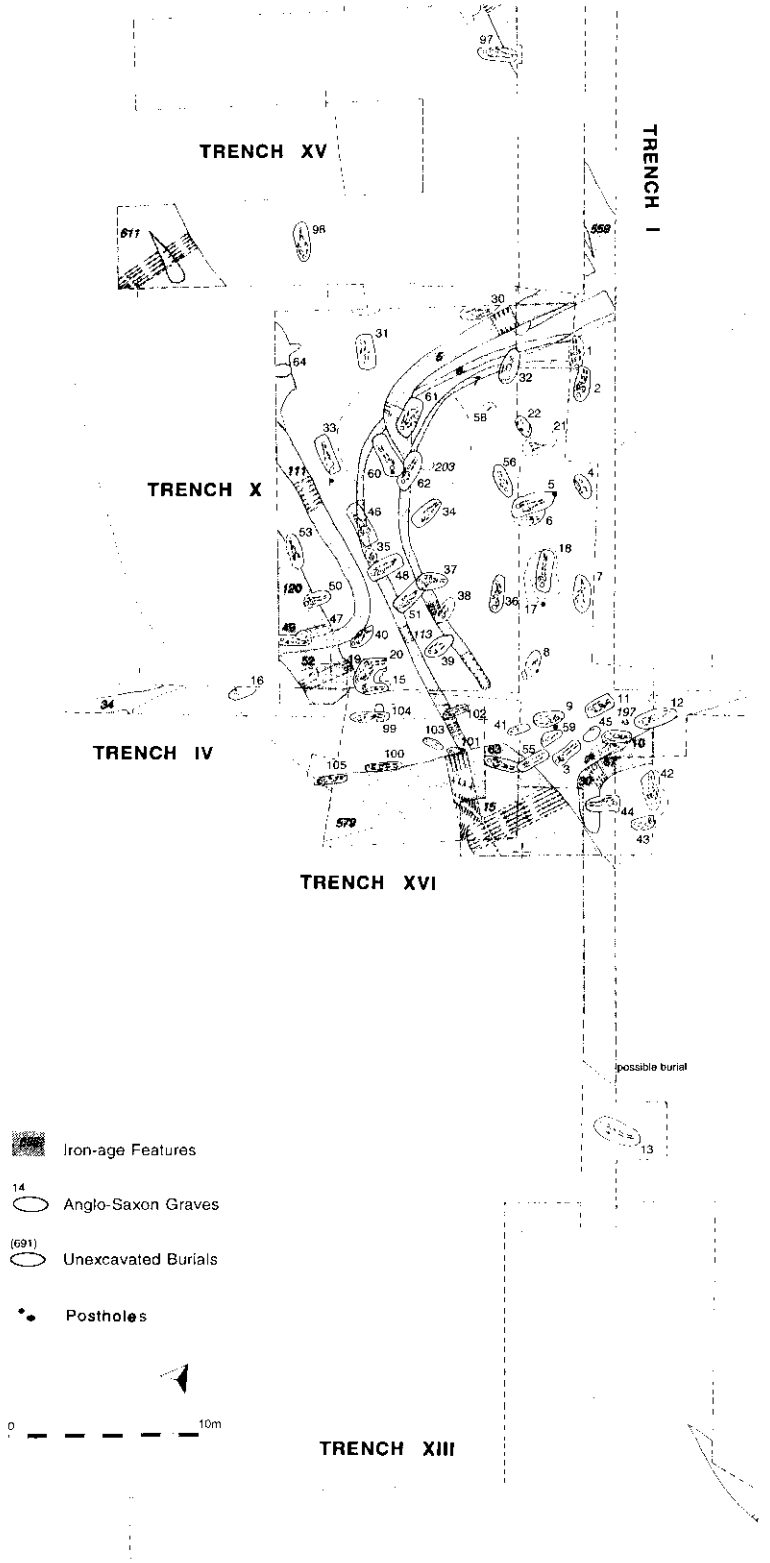


Figure 3.1b Distribution of Anglo-Saxon burials in relation to selected Iron Age features: Trenches I, IV, X, XIII, XV, and XVI

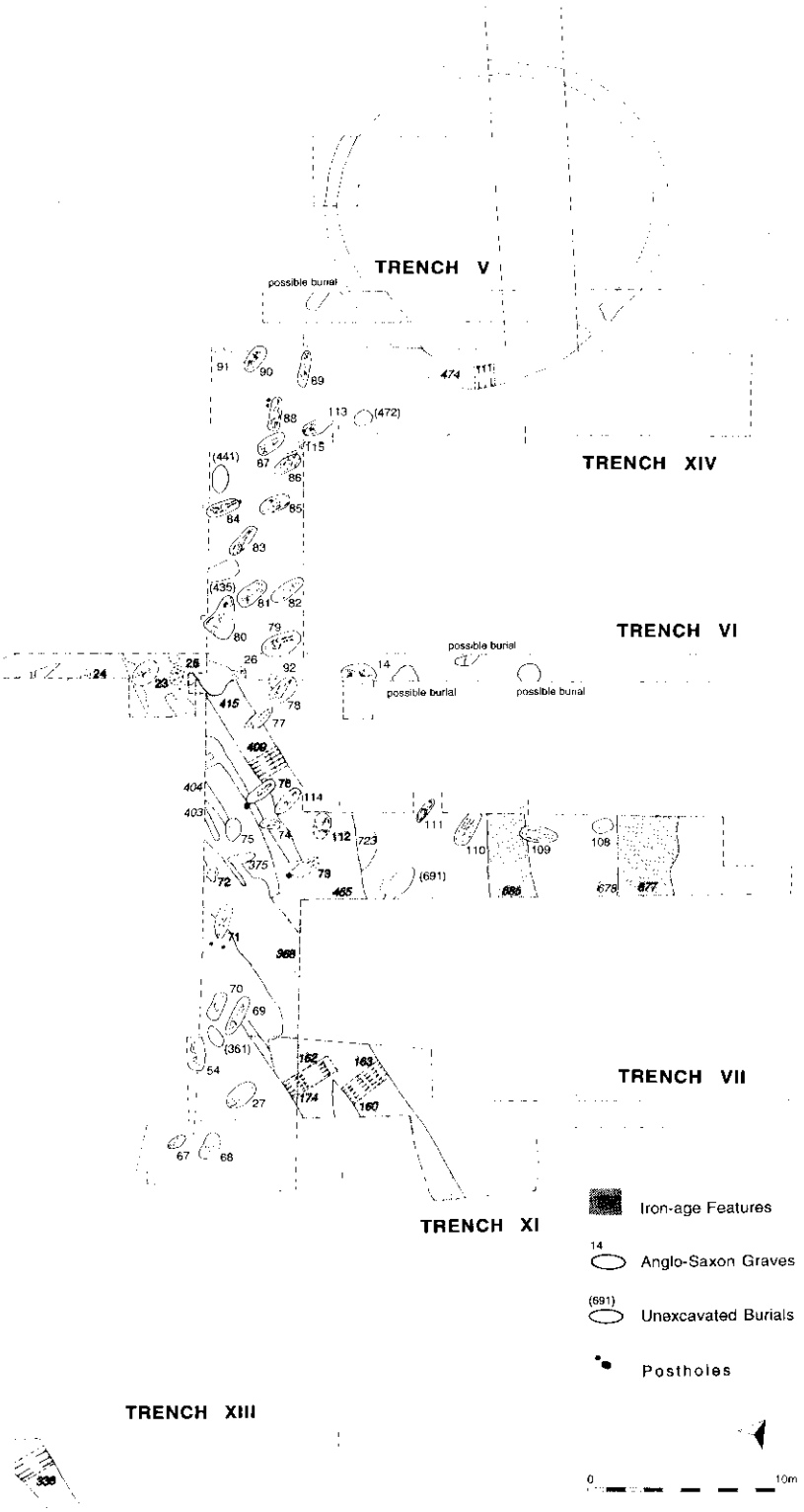


Figure 3.1c Distribution of Anglo-Saxon burials in relation to selected Iron Age features and Bronze Age ring-ditch: Trenches V, VI, VII, XI, XIII, and XIV

Figure 3.2 Example of appearance of grave after 19th century digging over and grave robbing

in this activity found time to dig over and rob some of the graves. Antiquarian interest had led to excavations being conducted on the site in the 1860s, but there is no report by Wilkinson about how the skeletons were treated during or after the excavation. Some of the dug-over graves might therefore be the direct result of Bendyshe's or Wilkinson's investigations, or a consequence of antiquarian interest in the form of workmen coming back to the site and grave-robbing in order to sell artefacts to interested collectors.

The effects of metal-detecting can occasionally be seen as discrete areas of interference in a grave, often identified by bones with copper stains but no associated artefacts. It does not seem to have involved digging over the whole grave.

Grave structures such as coffins, grave marker posts, or possible mounds, are discussed fully in the grave catalogue (see Ch 3.2 and Table 3.1). Direct evidence for coffins in terms of surviving wood, wood-stains in the grave or coffin nails, does not exist but the lack of such types of evidence does not mean that coffins were not used at Barrington. A range of other factors point to the possibility that 'coffins', in the sense of wooden burial constructions, were employed at Edix Hill. These structures may have been simple planks covering over the chalk-cut grave, or they may have been elaborate planked boxes secured by non-metallic means such as dowels. The vast majority of the evidence shows that the corpses were carefully laid directly into the ground, fully clothed and with their personal effects, or placed in boxed graves ('coffins') which were then covered by earth as part of the burial ritual, whereas any evidence suggestive of shroud burials was very limited. 'Coffins' were used for between a quarter and a third of the graves at Edix Hill. Such evidence seems to be consistent with other contemporary cemeteries; St Peter's Broadstairs (Kent) had a very similar percentage of 'coffined' burials (Duhig pers comm).

3.1.2 Orientation and alignment

The orientation of graves at Edix Hill reveals little coherent patterning that would indicate any particular link between burial ritual and astronomic events such as facing east to the sunrise (Figs 3.1 and 3.3). Indeed it would appear that topographical factors were of most importance, with grave orientation frequently conforming to the natural contours of Edix Hill. In addition infilled Iron Age ditches also provided a focus of alignment in a number of cases (Fig 3.4).

The majority of burials were found to be northerly-facing within a broad compass arc of NE–NW: 63 burials were SW–NE (42% of 149); 13 were SSW–NNE (9%); 6–7 were S–N (4–5%); and a further 16–18 were SE–NW (11–12%). The remainder were W–E (28: 19%), WSW–ENE (6: 4%), anomalous or indeterminate (14: 10%). No discernible pattern is apparent in the orientation of the graves when considered by gender, phase or status implied by associated artefacts (cf below, Ch 8). Of the 23 deepest graves (all those cut to 0.2m or deeper into the chalk and therefore implying higher status by associated investment of effort), the orientation was proportionately consistent with that outlined above. One of the anomalous graves, grave 44, is of special note as its orientation was westwards. This grave contained an adult male whose skull and mandible look very different from all the other examples at Edix Hill. On a subjective basis, therefore, we could surmise that this individual, in appearance and orientation, represents a 'foreigner' within the community buried at the cemetery.

Alignments of graves that coincide with Iron Age ditch alignments (deliberately?) occur fifteen times, 13% of known locations (Table 3.1). This phenomenon could be coincidental as when such alignments occur they are usually along west–east orientations, whilst in contrast, the northerly running ditches (eg F15, the southerly continuation of F579, or ditches in Trench XIV) seem seldom to have acted as a focus for burial. However, it would seem that graves were deliberately placed along ditch 304 (Trench XII), and another group of burials which ran beside ditch 579

Table 3.1 Grave structures, alignments and disturbance

(note: grave 64 was unexcavated; grave 49 dates from the late Iron Age)

Grave No	Skeleton No	Barrow	Bed	Coffin	Marker post	Vertical stratigraphy (intercutting burials)	Multiple burials	Contemporary burials	Alignment along Iron Age ditches	Charnel pits?	Disturbance (Anglo-Saxon?)	Grave robbing (19th century disturbance)
1	2											
2	3a1											
2	3a2											
2	3b											
2	3c											
3	4											
4	8											
5	9											
6	10A											
6	10B											
7	11											
8	12											
9	13A											
9	13B											
10	16A											
10	16B											
11	17											
12	19											
13	20A											
13	20B											
14	29											
15	31											
16	33											
17	41											
18	42A1											
18	42A2											
18	42B											
19	44A											
19	44B											
20	45											
21	46											
22	47											
23	48											
24	49											
25	50											
26	51A											
26	51B											
27	52											
28	57											

Grave No	Skeleton No	Barrow	Bed	Coffin	Marker post	Vertical stratigraphy (intercutting burials)	Multiple burials	Contemporary burials	Alignment along Iron Age ditches	Charnel pits?	Disturbance (Anglo-Saxon?)	Grave robbing (19th century disturbance)
29	58A											
29	58B											
30	100											
31	103											
32	110											
33	112											
34	117											
35	119											
36	125											
37	126											
38	127A											
38	127B											
39	128											
40	130											
41	133											
42	135											
43	136A											
43	136B											
44	137											
45	139											
46	146											
47	147A											
47	147B											
48	148											
49	149											
50	150											
51	151				*							
52	155											
53	156											
54	161											
55	171											
56	172											
57	175											
58	177											
59	178											
60	183											
61	184A											
61	184B											
62	188											
63	198											

Grave No	Skeleton No	Barrow	Bed	Coffin	Marker post	Vertical stratigraphy (intercutting burials)	Multiple burials	Contemporary burials	Alignment along Iron Age ditches	Charnel pits?	Disturbance (Anglo-Saxon?)	Grave robbing (19th century disturbance)
64	201											
65	300A											
65	300B											
66	322A											
66	322B											
67	352											
68	354											
69	359											
70	362											
71	367A											
71	367B											
72	369A											
72	369C											
73	372											
74	401											
75	402											
76	405											
77	423											
78	424											
79	428											
80	430A											
80	430C											
81	431											
82	432A											
82	432B											
83	436											
84	440A											
84	440B											
85	447A											
85	447B											
86	450											
87	451A											
87	451B											
88	453A				**							
88	453B											
89	455											
90	458											
91	459											
92	466A											
92	466B											

Grave No	Skeleton No	Barrow	Bed	Coffin	Marker post	Vertical stratigraphy (intercutting burials)	Multiple burials	Contemporary burials	Alignment along Iron Age ditches	Charnel pits?	Disturbance (Anglo-Saxon?)	Grave robbing (19th century disturbance)
93	526											
94	529											
95	530											
96	547A											
96	547B											
97	551											
98	553											
99	576											
100	578											
101	584											
102	586											
103	587											
104	591											
105	592											
106	626A											
106	626B											
107	632											
108	679											
109	683A											
109	683B											
110	687A											
110	687B											
111	688											
112	719A											
112	719B											
112	719C											
113	725A											
113	725B											
114	726											
115	727											
*	Stakeholes possibly contemporary with grave											
**	Postholes possibly not contemporary with graves											

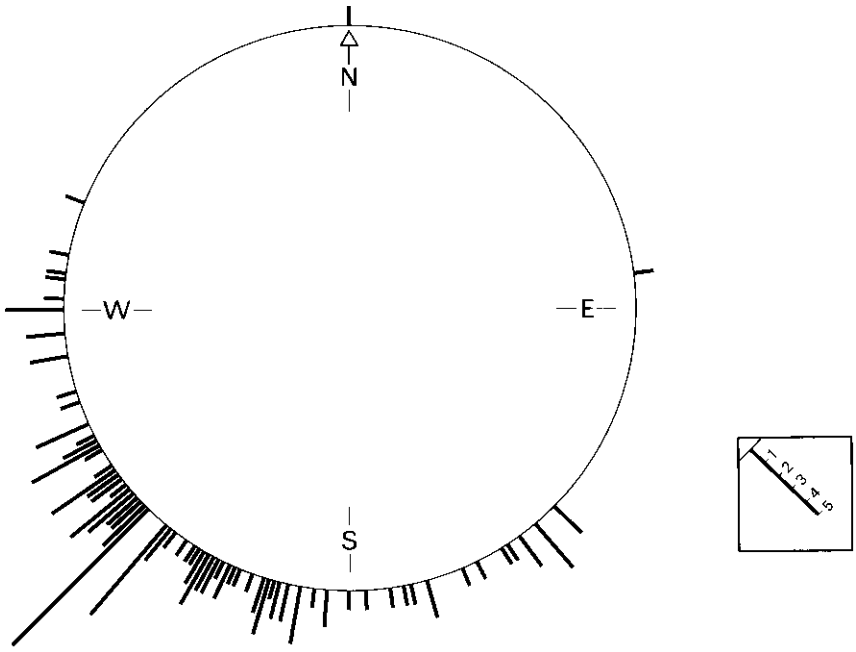


Figure 3.3 Orientation of burials represented by position of head. Length of line represents total number of individuals in each orientation

Figure 3.4 Trench XII showing 1840s field drain and graves along the line of an Iron Age ditch

Figure 3.5 Distribution of graves with structures, coffins, and marker posts

in Trench XVI could also have been deliberately placed there.

3.1.3 Grave structures and morphology

Burial structures have been suggested in a number of cases (see the detailed stratigraphic information in the grave catalogue) based upon circumstantial evidence rather than direct material evidence (Fig 3.5 and Table 3.1). An earth mound (barrow) appears to have existed in at least one location, represented by layer F121 above three graves (graves 60, 61, and 62). No good evidence has survived to indicate where barrows might have occurred elsewhere, but it would seem likely that small mounds could have been used over graves as markers in many instances. The general shallowness of the graves found at Edix Hill might suggest that raising an earth mound over a grave was a practice similar to the more intensive labour of excavating graves into the chalk natural; both would have formed a burial rite involving considerable investment in labour which could have been a significant part of the overall ceremony, but the mound would have left a visual focus for the grave at ground level.

Marker posts for burials appear distinctly plausible for ten graves, 9% of known locations, and these show a distribution similar to that observed for the possible coffined burials, concentrated on the crest of Edix Hill (Trenches X and XVI). In addition a posthole (F129) situated between two early Roman gullies was found to include an Anglo-Saxon loomweight (Fig 3.67) as part of the packing, and is presumably therefore also of this date, although not closely associated with any particular grave.

Graves were of various depths and shapes cut into subsoil and chalk. Of 149 individuals recorded at Edix Hill nine (6%) had rectangular graves, 62 (42%) had sub-rectangular graves, 22 (15%) had ovoid graves, and 56 (37%) were irregular or had no discernible grave-cut. These statistics show that at least half the burials would have had carefully constructed graves and it is not surprising to find that the deepest graves correspond closely with the most regular cuts as their form was better preserved within the hard chalk. Such evidence has been combined with other factors to suggest the presence of coffined burials in the sense of graves containing boxed constructions. Nineteenth century digging over has probably altered the original grave-cut accounting for some of the 'irregular' graves.

Coffins, a term used here to include all types of wooden grave furniture that would have formed a cavity within the grave (including bed-burials), were indicated at 28 locations, approximately a quarter of the 115 burial locations (Fig 3.5 and Table 3.1). These wooden grave structures appear to concentrate around the crest of Edix Hill (Trench X), complementing other evidence for the comparatively high status of burials in this zone of the cemetery (see below, Ch 8.5). However, there is no evidence of the 'bone tumble' effect observed at Raunds and other cemeteries which appears to be linked to the use of coffins. This effect, where ribs and vertebrae appear in a disordered state, is suggested to be the result of the movement of coffins containing decomposing bodies, such as those that were transported long distances (Brothwell 1987). Alternatively it may result from there being an interval between death and burial in order for mourners to arrive from some distance away (Boddington 1987). Although 'bone tumble' cannot automatically be attributed to a coffin burial, or *vice versa,* the fact that no examples were noted suggests that coffin burials at Edix Hill were interred fairly quickly, or that the 'coffins' were more likely to be wood-lined graves than real coffin boxes.

3.1.4 Burial practices

3.1.4.1 Introduction

The positioning of an individual or group of individuals found where they were deliberately 'laid to rest' is highly significant for archaeologists in that it is, in effect, the last statement about those individuals and the community to which they belonged, made by those who buried them. Contemporary examples of this can be seen in the Christian and Moslem practices of burying their dead in a particular orientation and/or position; supine west–east for Christians and facing Mecca for Moslems. These burial customs are actual statements of belief concerning resurrection (Christian) and the terrestrial focal point for devotion (Moslem). The fact that these burials are so similar and are without grave goods provides us with further statements of belief, such as belief in the equality of the individual in the eyes of God and the belief that possessions cannot be taken to the afterlife. So although there are obviously higher status burials with regard to tombs, coffin fittings, and other trappings, these are of a secular nature and have been included as a mark of respect or other emotion by the living.

A cemetery of individuals carefully and deliberately laid out in a variety of different positions, however, as in the case of Anglo-Saxon cemeteries, places more emphasis upon the deceased. Differences in treatment may be determined by one, or a combination, of the following factors: gender; occupation; age; and status. It also suggests that the belief system of the community (presuming there was one) did not emphasise the equality of individuals after death but rather a continuation of their social status of their position in the afterlife. Positioning and orientation combined with the presence or absence of grave goods may therefore have been of great symbolic significance to the deceased if they were to be correctly 'categorised' or identified in the next life. This also means that they relied upon their community and loved ones, even after death, to provide them with the appropriate

'send off' which may have resulted in a diverse combination of grave-types and ritual activity.

3.1.4.2 Cremation

The only burial practice definitely found at Edix Hill was that of inhumation, as neither definite cremation urns nor burnt bones have been found (see below 5.5.1). However, two brooch fragments and a buckle found by metal-detecting appear to have been deformed by intense heat, indicating that cremation could have been practised on a minor scale, or at some distance from the known main area of the cemetery (see below, 5.2.1.1, 5.2.1.10, 5.2.4.1, and Chapter 9).

3.1.4.3 Inhumations: shrouds

A phenomenon described as the 'parallel-sided' effect has been observed for skeletons at Raunds which was interpreted as probably deriving from shroud burials (Boddington 1987). At Edix Hill there were only two examples that could tentatively be described in this fashion, those from grave 44 and grave 76, and on the whole the evidence available suggests there were no shroud burials. No pins for securing shrouds were found at the head or feet of burials, although occasionally other pins that have been interpreted as clothing accessories were found in amongst the skeletons. Grave 69 is recorded as having a series of iron stains which followed the outline of the skeleton and it is possible that these derived from some form of iron fastenings which had held together a shroud. However, if this were the case then grave 69 would have been very unconventional compared to known examples from other cemeteries and it may have been more the result of over-imaginative recording than actual evidence.

3.1.4.4 Inhumations: burial ritual

The evidence presented above for burials interred within carefully constructed boxed graves (open coffins) without use of shrouds emphasises the visual nature of the burial rite in relation to each individual – the dead person was carried and lowered into the grave as a recognisable member of the community. Such a rite, presumably a communal ceremony, is apparent from the fact that bodies were laid in the ground fully clothed and on view, in several cases accompanied by prestigious grave goods such as jewellery, weapons and vessels. The contents of the vessels may have been more important than the containers. The grave goods that accompanied the bodies were not utilitarian articles of everyday life, and tools associated with farming or craft activities are seldom found. Instead, the objects with which the dead were buried were apparently intended to reflect the status of the individual within society, and possibly the wealth of the family within the community (see below, Chapter 8). Age at death and rites of passage no doubt determined with which objects an individual could be buried. Those same objects may also signify the prestige acquired through other accomplishments. Clothing may well have been more impressive and expensive than the dress accessories that accompanied it (many of which show considerable signs of wear and reuse, such as the wrist-clasps at Edix Hill: see below, 5.2.5.1). All these factors would have formed part of an elaborate burial ritual, and the positioning of artefacts within the grave, or dress accessories on the body, may also have been imbued with symbolic meaning rather than functional necessity.

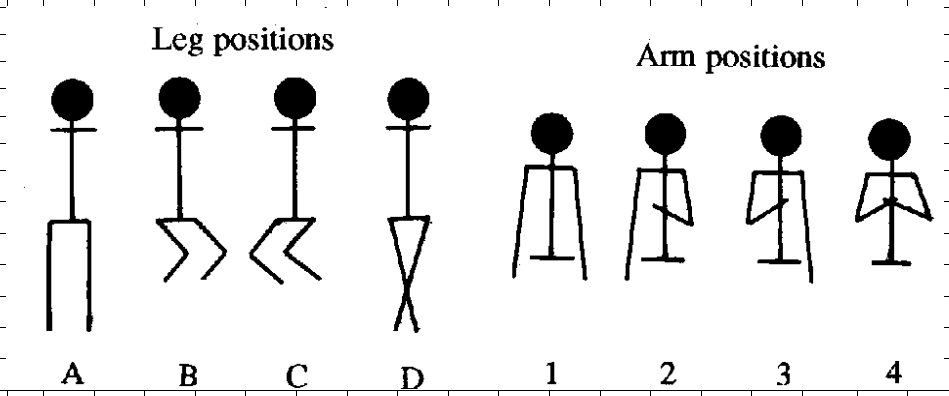
One aspect of this communal ceremony was the careful arrangement of the body in the grave, a part of the burial ritual which was evidently given great importance. It is difficult to interpret the significance of all the different positions in which the body and individual limbs were laid, given the vast variability of positioning seen at Edix Hill, but to the assembled community different arrangements may well have conveyed clear symbolic meaning.

The skeletons were found to be extended and supine (61 examples), flexed, either lying on their sides or semi-flexed with partly supine body (six and fourteen examples respectively), and only very occasionally was there variation such as with the two prone burials at Edix Hill, Sk33 in grave 16 and Sk130 in grave 40, or the contorted burial Sk119 in grave 35.

On first appearance there is a great deal of variety in the way the bodies were positioned within the graves which suggests an apparent lack of convention in the arrangement of limbs, quite unlike that seen in Christian ritual. Coincidence of layout is therefore of importance because the greater the degree of correspondence between any two or more skeletons the stronger the implication that some kind of deliberate burial rite was practised. An initial attempt to analyse this data suggests the definition of eight elements that divide into two subgroups (Table 3.2) from which the layout of each individual burial can be assigned to form composite groups, of which 24 possible combinations exist. These two subgroups use the distribution of limbs as their categories, with leg-positioning being most important and that of arms of secondary significance. The latter appears to have been influenced by the types of artefacts that accompanied the burials suggesting that the positioning of the arms enhanced the display of finery and reflected the individual's status. For example: many of the males with crooked arms had shields above them; the extended nature of female burial Sk683's (grave 109) left arm allowed her chatelaine unobstructed flow. Other females can be seen to have arms positioned to emphasise their possessions; Sk428's (grave 79) left arm is crooked above her elephant ivory purse ring and girdle group, and Sk126's (grave 37) right arm is crooked around the area where the garnet brooch was found. Posi-

Table 3.2 Burial positions

	Grave No		1	2	2	2	2	3	4	5	6	6	7	8	9	9	10	10	11	12	13	13	14	15	16	17	18	18	18	19	19	20	21	22	23
	Skeleton No		2	3A1	3A2	3B	3C	4	8	9	10A	10B	11	12	13A	13B	16A	16B	17	19	20A	20B	29	31	33	41	42A1	42A2	42B	44A	44B	45	46	47	48
LEGS	Extended	**A**	X			X		X	X	X	X							X		X	X	X		X					X	X		X	X?		
	Bent to left	**B**										X		X			X																		
	Bent to right	**C**											X		X	X			X				X												
	Crossed at ankles	**D**					X																												
ARMS	Extended	**1**	X			X?				X					X				X		X											X		
	Left crooked	**2**											X			X		X											X	X	X	X			
	Right crooked	**3**															X					X													
	Both crooked	**4**					X	X	X		?	X?		?						X			X	X							?	?			
			A1			A1?	D4	A4	A4	A1	A4?	B4?	C2	B4?	C1	C2	B3	A2	C1	A4	A1	A3	C4	A4					A2	A2	?2	A2	A1		



	Grave No		24	25	26	26	27	28	29	29	30	31	32	33	34	35	36	37	38	38	39	40	41	42	43	43	44	45	46	47	47	48	49	50	51
	Skeleton No		49	50	51A	51B	52	57	58A	58B	100	103	110	112	117	119	125	126	127A	127B	128	130	133	135	136A	136B	137	139	146	147A	147B	148	149	150	151
LEGS	Extended	**A**	X					X	X	X	X		X	X	X?			X	X		X		X	X			X			X			X	X	
	Bent to left	**B**																				X													
	Bent to right	**C**										X					X									X									X
	Crossed at ankles	**D**																											X			X			
ARMS	Extended	**1**						X	X		X?	X?	X?	X	X?								X				X?							X	
	Left crooked	**2**								X														X								X			X
	Right crooked	**3**																X			X	X													
	Both crooked	**4**															X		X										X						
			A?					A1	A1	A2	A1	C1	A1	A1	A1		C4	A3	A4		A3	B3	A1	A2		C?	A1?		D4	A?		D2	A?	A1	C2

	Grave No		52	53	54	55	56	57	58	59	60	61	61	62	63	64	65	65	66	66	67	68	69	70	71	71	72	72	73	74	75	76	77	78	79
	Skeleton No		155	156	161	171	172	175	177	178	183	184A	184B	188	198	201	300A	300B	322A	322B	352	354	359	362	367A	367B	369A	369C	372	401	402	405	423	424	428
LEGS	Extended	**A**				X	X					X		X	X		X		X?	X			X						X			X	X		X
	Bent to left	**B**			X					X	X										X													X	
	Bent to right	**C**	X?					X	X																					X					
	Crossed at ankles	**D**		X																														?	
ARMS	Extended	**1**										X		X					X		X													X	
	Left crooked	**2**					X								X		X															X			X
	Right crooked	**3**									X											X	X												
	Both crooked	**4**		X	X	X		X		X																									
			C?	D4	B4	A4	A2	C4	C?	B4	B3	A1		A1	A2		A2		A1	A?	B1	?3	A3						A?	C?		A2	A?	B1	A2

	Grave No		80	80	81	82	82	83	84	84	85	85	86	87	87	88	88	89	90	91	92	92	93	94	95	96	96	97	98	99	100	101	102	103	104
	Skeleton No		430A	430C	431	432A	432B	436	440A	440B	447A	447B	450	451A	451B	453A	453B	455	458	459	466A	466B	526	529	530	547A	547B	551	553	576	578	584	586	587	591
LEGS	Extended	**A**						X	X									?						X	X	X	X	X			X	X	X	X	
	Bent to left	**B**				?													X	X?			X							X					
	Bent to right	**C**										X																							
	Crossed at ankles	**D**				X										X													X					
ARMS	Extended	**1**																									X	X	X		X	X		X	
	Left crooked	**2**							X							X																			
	Right crooked	**3**																							X	X				X					
	Both crooked	**4**						X	?		?							?	X				X	X								X		
						D?		A4	A2		??	C?				D2		A4?	B4	B?			B4	A4	A3	A3	A1	A1	D1	B3	A1	A1	A4	A1	

	Grave No		105	106	106	107	108	109	109	110	110	111	112	112	112	113	113	114	115
	Skeleton No		592	626A	626B	632	679	683A	683B	687A	687B	688	719A	719B	719C	725A	725B	726	727
LEGS	Extended	**A**		X	X		X		X	X	X								
	Bent to left	**B**	X															X	
	Bent to right	**C**				X						X							X
	Crossed at ankles	**D**																	
ARMS	Extended	**1**		X	X		X		X			X							
	Left crooked	**2**								X									X
	Right crooked	**3**																	
	Both crooked	**4**	X			X													
			B4	A1	A1	C4	A1		A1	A2	A?	C1						B?	C2

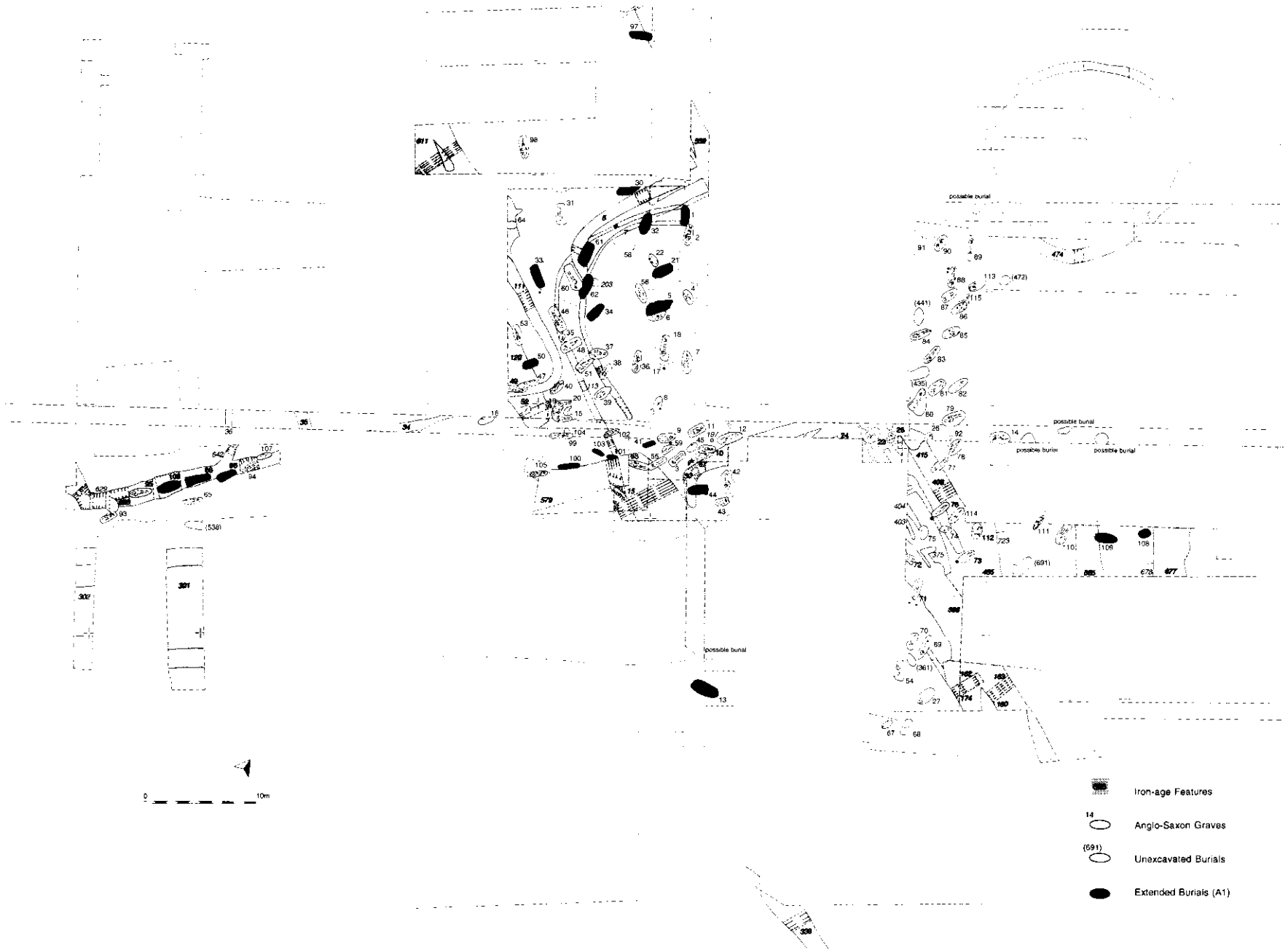


Figure 3.6 Distribution of extended burials

tioning of legs however, is perhaps more closely related to gender-specific roles or other attributes: all burials that were flexed to the right were male, and those flexed to the left were predominantly female. Children conform to adult patterning and it is interesting to note that Sk632 (grave 107), a child with a spear, is flexed on the right side consistent with the apparently male positioning.

Of the eighteen graves with multiple burials fourteen were contemporary and were buried either facing one another in some instances (eg grave 106), or on top of each other (eg graves 2 and 9, see Table 3.1). However, even the contemporary inhumations seem seldom to have contained bodies laid out identically and they often display a considerable lack of similarity. Examples of the same positioning in multiple burials can best be seen in the surviving evidence for Sk44A and B (grave 19), and the layout of one of the burials that cuts this grave, Sk45 (grave 20) which appears to conform with the earlier ones. The pattern preserved by the bones of Sk58A and B (grave 29) also shows a high degree of conformity, as do the almost identical Sk626A and B (grave 106). However, other multiple graves are largely dissimilar in the way in which bodies were laid out.

In contrast a number of single graves can be found that contain inhumations arranged in a very similar manner to one another. The most convincing 'group' (A2 in Table 3.2) displaying uniformity of layout (with legs straight, left arm crooked over the stomach and right arm slightly bent to rest the hand over the right innominate) is formed by the grave 19 and 20 complex, together with Sk42B (grave 18), Sk135 (grave 42), Sk198 (grave 63), Sk405 (grave 76), Sk440A (grave 84), possibly Sk127 (grave 38) and Sk300A (grave 65), with Sk16B (grave 10), Sk172 (grave 56) and Sk428 (grave 79) also very similar in arrangement. Although this group is composed of virtually all feminine burials it is, however, spread widely over the cemetery and includes individuals from both early and late phases. Group B4 is also female or unsexed and a small further group of females can be seen comprising all of group A3. Similarly the 'legs crossed at ankles' sub-group D all seem to be 'rich' individuals, both male and female in this instance. Amongst male burials there are very strong similarities between Sk3C (grave 2) and Sk146 (grave 46) (D4), Sk148 (grave 48) and Sk453 (grave 88) (D2), and Sk553 (grave 98) (D1) all of which are extended and have their legs crossed at the ankles: with the right legs crossing the left and arms arranged identically for the first two, and with left leg crossing right and arms arranged similarly to one another for the latter. Another set of male burials displays considerable similarity by the extended and semi-flexed nature of their layout (groups C1 and C2 – Sk11 (grave 7), Sk13A and B (grave 9), Sk17 (grave 11), Sk125 (grave 36), Sk151 (grave 51), Sk688 (grave 111) and Sk727 (grave 115)) although the pattern of their arms is variable (see Table 3.2). Approximately half of all male graves which survived well enough to allow recording of the positioning of the bodies display apparent conformity of layout within the two sets of male burials just discussed, ie legs bent to the right or crossed at the ankles, and it is worth noting further that all of these were weapon burials. Such evidence strongly suggests that a convention in burial rite for some sector of the male population existed, but the widespread nature of their distribution throughout the cemetery and the lack of closer dating evidence with which to phase the male graves prevents further deductions to be drawn at this stage.

The most popular layouts (A1 and A2) seem to be divided equally between males, females, and unsexed individuals, and one of these groups does appear to cluster in one part of the cemetery. Those with fully extended legs and arms (group A1) are found predominantly within the northern part of the central area (Fig 3.6). This concentration, and the outliers of this group elsewhere in the cemetery, are composed largely of males or high status females. Also included are several immature skeletons which show signs of familial relationship to the adults (see Chapter 8.3.2 below).

Finally two pairs of graves containing burials with similar layouts in close proximity and identical orientations are found on the brow of Edix Hill (grave 33 (Sk112) and grave 60 (Sk183), grave 46 (Sk146) and grave 53 (Sk156)) and these pairs strongly suggest the presence of spouses (see below, Chapter 8.3.3).

Six burials found lying on their sides seem almost to have been laid to rest as though they were sleeping (eg Sk29 (grave 14), Sk161 (grave 54), Sk183 (grave 60), Sk458 (grave 90), Sk526 (grave 93), and Sk727 (grave 115)). The grave-cuts appear to have accommodated a rise at the head-end giving the appearance that the skulls had been 'pillowed', although it is also possible that this effect was produced by differential slumping of the post-cranial body during decomposition.

The apparent exceptions to the general trends noted above were seen with the prone burials Sk33 (grave 16) and Sk130 (grave 40), and with grave 35 which contained a twisted skeleton (Sk119) which must have partly decomposed before being buried in a restricted area between two other graves (graves 46 and 48). These burials, together with Sk137 (grave 44) which was unique in facing west, seem to be so deliberately different from the norm that special circumstances must be associated with them. Prone and contorted burials have been interpreted at other sites as representing possible sacrifices or punishments and this might account for these exceptional burials at Edix Hill. It would seem that two of these burials were subject to interference when decomposition had reached an advanced stage – Sk119 was arranged in an impossible position for a fully articulated body, although it was evident that large parts of the body had remained articulated at burial; Sk33 is only partially complete and it would appear that the lower part of the body was removed in antiquity (see below, 3.1.5), although the upper part of the body was clearly articulated when it was

laid prone in the grave. Other skeletons at Edix Hill suggest that some kinds of post-burial interference occurred (eg the Iron Age burial Sk149 (grave 49) with its disarticulated jaw between its legs, or the apparent relocation of an articulated foot in grave 31) but such practice was rare and therefore suggests that both Sk33 and Sk119 were singled out for exceptional treatment.

3.1.4.5 Objects other than grave goods

Apart from deposition and layout of definite grave goods and costume accessories other objects were sometimes found in the graves. In addition to the few examples of fairly complete Anglo-Saxon pots, a number of potsherds were found in most grave fills some of which could be clearly identified as deliberately placed deposits (eg in graves 5, 40, and 108). However, other sherds were often abraded Iron Age or Roman pottery which were residual and had accidentally become incorporated into graves. The occurrence of animal bone appears to be of similar origin, with no definite examples of deliberate deposition in graves, except a small dog which was buried into the fill of grave 60 or 62 (see below, 3.1.5).

Inclusion of stones as part of the grave occurred occasionally: as a thin layer separating Sk3C from Sk3B in grave 2; used as a 'head surround' for Sk149 in grave 49 (an Iron Age grave); found placed on and around the pelvic area as with Sk44B (grave 19), Sk127 (grave 38), Sk440 (grave 84), and Sk530 (grave 95); or around the legs or feet in the case of Sk9 (grave 5), Sk19 (grave 12), and Sk184 (grave 61). Stones were also found within other graves which had been disturbed by later activity. Most stones were not very large but they were significant enough to be noted by the excavators. Although these stones were probably accidentally included in the grave fills it is also possible that they were deliberately placed there, especially when found on top of the skeleton.

The only other objects found in the graves were various nails which were too few and irregular to have been part of coffin manufacture (see below, 5.6.1 and 5.7.4).

3.1.5 Stratigraphic phasing: contemporary burial, secondary burial, and later disturbance

Contemporary burials are probable in fourteen of the graves containing multiple inhumations (Table 3.1 and see below Chapter 8.3.4) which represents 16% of the 114 burial locations fully investigated during excavation. In addition, a further fourteen burial locations display relationships suggesting broad contemporaneity between one grave and a neighbouring one. For example, grave 60 cuts grave 61 but both are sealed beneath a barrow together with grave 62.

Grave markers must have been used, and respect for burial locations seems to have been usual at Edix Hill as, although contemporary disturbances to Anglo-Saxon burials occurred 23 times (26% of 114 burial locations, Table 3.1), most are no more than the edge of one grave-cut just overlapping that of another. However, in grave 98 the bones of a child (Sk591) were found piled up at the feet of Sk576 and scattered in the grave fill. These would seem to have derived from the empty grave 104 through which grave 98 was cut. In grave 80 some bones of a child had been placed in a small pit below the burial of an adult. Within the multiple burials there were four instances where deliberate reuse of an existing grave led to disturbance of the earlier skeletons (grave 6, graves 17/18, grave 66, and grave 109).

Charnel pits might account for the burials in grave 23, grave 25, grave 26, and perhaps grave 80, but the appearance of these is not that dissimilar from those graves that have bones chopped and redeposited and which are interpreted as examples of 19th century excavations (Table 3.1), as noted at 24 locations (31% of known graves). The distribution of grave-robbing shows a definite concentration on the east side of Edix Hill (Trench XIV), just off the crest, which would be consistent with Wilkinson's description of the graves he excavated in the 1860s. Although 19th century drains were seen to cut through burials in other areas of the cemetery, generally they had not resulted in grave-robbing except around the Trench XIV area. Coprolite trenches were found to have cut through the southern spur of Edix Hill, and finds of some human bone and broken amber beads in the top of the backfill of these trenches suggests that destruction occurred in this area because of coprolite digging. In contrast, metal-detecting was only firmly identified in connection with grave 38.

3.2 Catalogue of graves

3.2.1 Excavations 1989–1991 (Table 3.3)

The format below discusses the grave as a feature (depth below surface to top of grave = depth from current ground surface to the level at which the grave was noted in the subsoil or chalk; depth into chalk/subsoil = depth from which the grave was first noted to the base of the grave; orientation = in degrees from 0° N), and then goes on to give essential skeletal information before listing the grave goods.

Grave 1 (Feature 2, Sk2)
Depth below surface to top of grave: 0.3–0.42m; mostly in subsoil; shape/type of grave: uncertain; orientation: 165°.

A complex of four burials (Sk2 (grave 1), Sk3A, Sk3B, and Sk3C (grave 2)) were cut as shallow graves into the subsoil and chalk. The highest bones were the scattered remains of Sk3A and the lower part of Sk2. The legs of Sk2 were at 0.3m below the present field surface, whilst the scapula was at a depth of 0.42m (both graves were mostly cut in subsoil and with minimal hollowing-out of the chalk). Although

Table 3.3 Summary of grave and burial information – 1987–91 excavations

Grave	Burial	%	Height	Orient.	Posture	Age	Mean yrs	Age range	Pathologies	Grave type	Cut shape	Width	Length	Depth into chalk	Depth below surface	Predates	Postdates	Cuts IA feature	Follows IA feature	Damage	Miscellaneous	Skeletal sex	Sex by grave goods	Comb	Pot	Bucket Br	Fe	Rings Fe	Br	Tweezers	Buckle	Knife	Beads Amber wt. in g.
1	2	65	1.63	S–N	S	A	37	35–39	d o	P	?	0.75	1.90?	0	0.30 - 0.42		3.1	113		Slumped	In subsoil	F										1	
2	3.1.1	5		S–N	D	A					Sub-Rect			0.12		2	3.2&3.3			Plough/pan busting		F?		1								1	1	
2	3.1.2	2			D	A					Sub-Rect			0.12		2	3.2&3.3			Plough/pan busting		M?											
2	3.2	55	1.69	S–N	S	A	41	23–59	a	S	Sub-Rect	0.98	2.01	0.12		3.1	3.3			Burial of 3.1 & plough	3.2 and 3.3 contemporary	M		1									
2	3.3	85	1.79	S–N	S	A		18		P	Rect	1.04	2.03	0.12		2,3.1&3.2				Virtually undisturbed	3.2 and 3.3 contemporary	M	M	1							1	1	
3	4	80	1.61	SW–NE	S	A	30	25–35	de	P (C?)	Sub-Rect?	0.85	1.98	0.2	0.35					Virtually undisturbed		F	F					1	4	1	2	1	11
4	8	15		SE–NW	S	A			d	S	Oval	0.8	1.3	0	0.29					Ploughing	In subsoil	M?	M?									1	
5	9	90	1.66	SW–NE	S	A	27	25–29	d e i s	S(C?)	Sub-Rect	1.1	2.25	0.08-0.10	0.18-0.24		10			Virtually undisturbed	Posthole / marker	F	F									1	7
6	10.1	70		SW–NE	S	C		6		S	Oval	0.75	1.50+	0.08	0.24	9	10.2			Virtually undisturbed	Marker post?		F									1	
6	10.2	60		W–E	SF L	C		4		S	Oval	0.75	1.50+	0.08	0.24	10.1				Burial of 10.1	10.1 & 10.2 contemporary												
7	11	85	1.72	S–N	SF R	A	30	25–35	d g	S	Oval	0.93	1.83	0.12	0.26					Virtually undisturbed	No associations	M	M								1	1	
8	12	75		S–N	SF L	C		4		P	Sub-Rect	0.77	1	0.04	0.32					Machine & animal	Marker post?							1				1	
9	13.1	85	1.61	W–E	SF R	A		45+	a d t	P	Sub-Rect	0.75	1.75	0.23	0.24		13.2	132		Animal activity	13.1 & 13.2 contemporary	M	M								1	1	
9	13.2	80		W–E	SF	A		17		P	Sub-Rect	0.75	1.72	0.23	0.24	13.1		132		Animal activity	13.1 & 13.2 contemporary		M								2	1	
10	16.1	80	1.65	W–E	SF L?	A	32	30–34	a d		Sub-Rect			0.15	0.31		16.2		Adjacent to 30	Minor plough damage	16.1 & 16.2 almost contemporary	F											
10	16.2	50		W–E	S	P	15–16	15–16	s	S	Sub-Rect	0.68	1.68	0.15	0.31	16.1			Adjacent to 30	Water damage	16.1 & 16.2 almost contemporary		F				2					12
11	17	60	1.60	S–N	SF R	A		45+	d	P (C?)	Sub-Rect	0.75	1.63	0.16	0.2					Poor preservation	No associations	M?										1	
12	19	90	1.83	SW–NE	S	A	22	20–24	d e g s	P	Sub-Rect	0.87	2.1	0.16	0.29				Adjacent to 30	Animal activity	Marker post?	M	M								1	1	
13	20.1	60		W–E	S	I				P	Sub-Rect			?	0.38		20.2	Abuts 15		Poor preservation	20.1 & 20.2 contemporary				1						1	1	
13	20.2	85	1.66	W–E	S	A		25	d e	P	Sub-Rect	1.1	2.05	?	0.38	20.1		Abuts 15		Virtually undisturbed	20.1 & 20.2 contemporary	F	F						7		1	1	22
14	29	80		W–E	SF R	A	40	35–45	a d e i	S	Oval	1	1.60?	0.08	0.26					Agricultural damage	No associations	F	F	1	1							1	15
15	31	75		W–E	S	P		12	e s	P	Sub-Rect	0.57	1.46+	?	0.32		44.1			Plough damage	31 & 45 respect each other		F										
16	33	30		SW–NE	P	A	30	25–35	d g	S	Sub-Rect	0.68	1.68	0.1	0.28					19thC & agriculture	Grave robbed	M											
17	41	10		S–N	D	A			d	SPREAD				0	0.25		42			19thC & agriculture	In subsoil. Grave robbed											1	
18	42.1.1	2			D	C		3			Sub-Rect			0.1	0.35		42.2			19thC & agriculture												
18	42.1.2	2			D	A	21.5	18–25	d		Sub-Rect			0.1	0.35		42.2			19thC & agriculture			F?								1	
18	42.2	85	1.70	S–N	S	A	19	17–25	d i	BED	Sub-Rect	0.92	2.3	0.45		41		423		Virtually undisturbed		F	F	1			1				1?		2	
19	44.1	45	1.69	S–N	S	A		18	a d e	P	Sub-Rect	1.05		?	0.32	31 & 45	44.2			Later burials	44.1 & 44.2 contemporary	F	F								1		5
19	44.2	60		S–N	S	A		35	d	P	Sub-Rect			?	0.32	31 & 44.1				Later burials	44.1 & 44.2 contemporary	F	F					6	2		2		17
20	45	70	1.56	NW–SE	S	A		19	d e g s	P	Sub-Rect			?	0.32		44.2			Plough damage		F	F					1	1		1?		3
21	46	50		W–E	S	A					?		1.7	0	0.23					Plough damage	No associations. In subsoil											1	
22	47	10		NW–SE	S	A					?	0.55	1.4	0	0.23					Plough damage	Close to 46. In subsoil												
23	48	10		W–E?	D	A	30	25–35	d s	SPREAD/P?				?	0.34			404	* Assoc with 48, 50, 51	19thC & agriculture	* Charnel pit/grave robbing	M?	F?								1		
24	49	2		WSW–ENE	D	A									0.29			30 & 368		19thC disturbance	In ditch fill	M?											
25	50	5		W–E?	D	A	20.5	18–23		SPREAD					0.34			373		19thC & agriculture	Associated with 48 and 51												
26	51.1	60		W–E?	D	P		15		S				?	0.34			409		19thC & agriculture	Associated with 48 and 50												
26	51.2	10		W–E?	D	A		45+	a d						0.34			409		19thC & agriculture	Associated with 48 and 50	M									1?		
27	52	30	1.74	SW–NE	D	A		45+	a d t	P	Sub-Rect	0.95	1.85	0.2	0.42					19thC disturbance	19thC Grave robbed	M	M								1	1	
28	57	40	1.70	SSW–NNE	S	A	40	35–45	d t	P	?	0.7	2.00?	0.1	0.25					Plough damage	No associations	M	M								1	1	
29	58.1	40	1.75	SW–NE	S	A				S	?	0.90?	1.80?	?	0.24					Plough damage	58.1 & 58.2 contemporary	M	M									1	
29	58.2	50		SW–NE	S	A				S	?	0.90?	1.80?	?	0.24					Plough damage	58.1 & 58.2 contemporary		F								1		
30	100	65		SW–NE	S	A/P		17	a e	P	?	0.60?	1.80?	0	0.30?				Aligned with 5	Plough damage	In subsoil											1	
31	103	75	1.66	S–N	S	A		45+	a d e	S (C?)	Rect	1.13	1.95	0.10-0.14	0.45			153 & 199		Damage to left side ?	Later interference	M										1?	
32	110	60	1.77	S–N	S	A		45+	a d	P	Sub-Rect	0.7	1.85	0.1	0.25			113/114		Disturbed ?	Reason for disturbance not clear	M										1	
33	112	60	1.74	S–N	S	A	21.5	18–25	d e g s	P (C?)	Sub-Rect	0.97	2.05	0.25	0.29			154		Poor preservation	Marker post?	M	M								1	1	
34	117	80	1.66	W–E	S	A	21.5	18–25	d e	P (C?)	Sub-Rect	0.6	1.7	0.05	0.2			114		Agricultural activity		M	M								1	1	
35	119	80	1.67	?	F	A	27	19–35	a i			0.70?	0.70?		0.15		146 & 148	113		P-mortem manipulation	In ditch fill	F											
36	125	80	1.72	S–N	SF	A	20.5	18–23	d s	P	Sub-Rect	0.7	1.80+	0.08	0.23					19thC drain	19thC disturbance	M	M								2	1	
37	126	75	1.64	SW–NE	S	A		45+	a d	S (C?)	Sub-Rect	1	1.56	0.12	0.23	151		114	Assoc with 191 & 192	Virtually undisturbed	Marker/stakeholes?	F	F									1	
38	127.1	40		SW–NE	S	A	40	35–45	a d t	S	Sub-Rect	0.80?	1.7	?	0.3			114		Plough damage		F	F						2			1	21
38	127.2	1				C	2–3	2–3						?	0.3					Plough damage													
39	128	20		SW–NE	S	P	16–17	16–17	i s	S	Oval	0.93	1.8	0.1	0.3			114		Poor preservation			F								2		
40	130	80		SW–NE	SF L	P	15–16	15–16	e i	S	Oval	0.7	1.6	0.08	0.22				Aligned with 111	Virtually undisturbed													
41	133	85		SW–NE	S	C	6–7	6–7	e s	P	Sub-Rect	0.5	1.3	0.2	0.3					19thC drain	Respects 13, pos. contemporary												
42	135	90	1.64	S–N	S	A		50	a d g o	P	Sub-Rect?	0.63	1.75?	0.15	0.19			195		Virtually undisturbed		F									1	1	
43	136.1	1		S–N?	D	P/A				S	?	0.50+	1	0.06	0.26					19thC or agriculture	Grave robbed?												
43	136.2	15		E–W?	D	C		5		S	?	0.60+	0.80+	0.06	0.26					19thC or agriculture	Grave robbed?												
44	137	70	1.72	W–E	S	A		35	a d g	P (C?)	Rect	0.8	1.72	0.16	0.24			30		Virtually undisturbed	Shroud?	M										1	
45	139	1		SSW–NNE		C/P				P	Rect	0.5	1.35	0.15	0.18					19thC disturbance	Grave robbed											1	
46	146	80	1.84	SE–NW	S	A	41	23–59	a d e g n	P (C?)	Sub-Rect	1.1	2.25	0.41	0.2	119		113		Virtually undisturbed		M	M								1	1	
47	147.1	30		SW–NE	D	P	16-17	16–17		SPREAD		0.85	1.9	0	0.10-0.20					Plough damage	In ditch fill		M										
47	147.2	5		SW–NE	D	A	48	26–70	e	SPREAD		0.85	1.9	0	0.10-0.20		149	120		Plough damage	In ditch fill	F	F										
48	148	95	1.76	SW–NE	S	A	30	25–35	d e g n t	P (C?)	Sub-Rect	1.03	1.98	0.2	0.2	119		113		Virtually undisturbed		M	M								1	1	
49	149	75	1.61	W–E	S	A	30	25–35	d	P (C?)	Rect	0.62	1.70+	0	0.26	147		120	111	P-mortem disturbance?	In ditch fill	F	F										
50	150	90	1.73	SW–NE	S	A		45+	a d	P (C?)	Sub-Rect	0.75	1.60+	0.12	0.3			120		Virtually undisturbed		M						1			1	1	
51	151	80	1.74	W–E	S	A	22	19–25	a d g i	P (C?)	Sub-Rect	0.65	1.8	0.12	0.23		126	113 & 114	Assoc with 191 & 192	Virtually undisturbed	Contemporary with 126?	M	M						2			1	
52	155	3		S–N?		A				P	?	0.35+	0.70+	0.05	0.35			120 & 158		Reason for damage ??	In ditch fill												
53	156	80	1.68	SE–NW	S	A	27	25–29	d s	P	Oval	0.65	1.8	0.15	0.3			120		Agricultural activity		F	F								1	1	7
54	161	90	1.57	S–N	SF L	A	29	23–35	d e o	P	Oval	1	1.65	0.25	0.4					Virtually undisturbed		F	F					1			1	1	
55	171	75	1.58	SW–NE	S	A	23	21–25	d e i	P (C)	Rect	0.63	1.9	0.17	0.35	198?	198?	15		19thC drain		F											
56	172	60		SE–NW	S	C		8	s	P	Sub-Rect	0.65	1.7	0.1	0.3					Virtually undisturbed													
57	175	75		SW–NE	SF R	I		4–5m		P	Oval	0.35	0.5	0.1	0.3				Adjacent to 30	Virtually undisturbed	Marker post?												
58	177	5		SW–NE?	D	A			a	?	?			0	0.3				143	Single limb only	In fill of pit												
59	178	85		S–N	SFL	C	3–4	3–4		S	Sub-Rect	0.75	1.24	0.04	0.3					Virtually undisturbed	Marker post?										1?		
60	183	70		SE–NW	SF L	A	28.5	25–32	d	BED	Rect	1.35	2.53	0.18	0.23	121	188	5, 6, 7		Agricultural activity??	Possible mound. Marker post?	F	F?					4+			2?	1	
61	184.1	80	1.57	SW–NE	S	A	30	25–35	a d e	P (C?)	Sub-Rect	1	2.04	0.2	0.35	121		5, 6, 7, 200		Virtually undisturbed	Possible mound.	F	F									1	21
61	184.2	<1				I		10m								121				Plough damage	Possible mound.												
62	188	80		SW–NE	S	P		16	e s	P (C?)	Sub-Rect	0.9	1.9	0.23	0.2	121/183		5 & 114		Virtually undisturbed	Possible mound. In ditch fill		M								1	1	
63	198	90	1.75	W–E	S	A	23.5	22–25	a d s	P?	?	0.45	1.75	0	0.32-0.45	171?	171?	15		Virtually undisturbed	In ditch fill	M									1	1	
64	201			S–N		A				?	?				0.6					Apparently undisturbed	NOT EXCAVATED												
65	300.1	95	1.77	WSW–ENE	S	A		35	a d e g i t	P	Sub-Rect	0.7	2.1	0.12	0.35			532	Beside 304	Agricultural activity	Contemporary with 300.2?	M											
65	300.2	2		?	S?	C		2										107		Burial of 300.1 & agri.	In ditch fill												

Table 3.3 Summary of grave and burial information – 1987–91 excavations

Grave	Burial	%	Height	Orient.	Posture	Age	Mean yrs	Age range	Pathologies	Grave type	Cut shape	Width	Length	Depth into chalk	Depth below surface	Predates	Postdates	Cuts IA feature	Follows IA feature	Damage	Miscellaneous	Skeletal sex	Sex by grave goods	Comb	Pot	Bucket Br	Bucket Fe	Rings Fe	Rings Br	Tweezers	Buckle	Knife	Beads Amber wt. in g.
66	322.1	95	1.77	SW–NE	S	A			d i	P	Sub-Rect?	0.7	2.3	?	0.4		322.2	543	304	19thC drain	In ditch fill	M	M								1		
66	322.2	40	1.66	SW–NE	S	A		25	d	P	Sub-Rect?	0.7	2.3	0.22	0.4	322.1				Burial of 322.1	In ditch fill	F	F					1	1		1?	1	59
67	352	90		SW–NE	S	C	3.5	3–4		P	Oval	0.52	0.9	0.09	0.3					Virtually undisturbed													
68	354	10		S–N	D (S?)	A		45+	a d	P	Sub-Rect	0.77	1.54	0.05	0.32					Agricultural activity		F	F					1			1?		15
69	359	90	1.61	S–N	S	A		18	d	P (C?)	Sub-rect	0.62	1.85	0.06	0.32				357	Virtually undisturbed	Shroud?	F	F					1			1	1	
70	362	70	1.71	S–N	D	A	42	40–44	a d	P	Sub-Rect	0.92	1.7	0.12	0.27					19thC disturbance	Grave robbed	M?	M										
71	367.1	40		?S–N	D	A	30	25–35	d o	SPREAD	Oval			0.07	0.15			368		19thC disturbance	Grave robbed	M											
71	367.2	2		?S–N	D	A	21.5	18–25	d	P				0.07	0.15					19thC disturbance	Grave robbed												
72	369.1	5		SW–NE?	D	A			d t	SPREAD				0	0.28			368		19thC & agriculture	In ditch fill. Grave robbed		F										5
72	369.3	1		SW–NE?	D	P		16		SPREAD		0.62	1.09?	0	0.28			368		19thC & agriculture	In ditch fill. Grave robbed												
73	372	50	1.74	W–E	S	A	21.5	17–25	d e s	SPREAD		0.8	2.00?	0	0.21					19thC & agriculture	In subsoil. Damaged	M											
74	401	40		W–E	D (S?)	C		<7		S	Oval?	0.50?	1.2	0	0.3			373		Plough damage	In ditch fill		F?										
75	402	5		?S–N	D	A			d	S	Irregular	0.68	1.24	0.05	0.3			404		19thC & agriculture	Grave robbed												
76	405	90		SW–NE	S	P		15		P (C?)	Sub-Rect	0.54	1.93	0.11	0.3			373, 409		19thC drain	Marker post? Shroud?		M								1		
77	423	15		SW–NE	S(D)	P/A	21.5	18–25	d	P	Sub-Rect	0.7	1.78	0.25	0.3			409, 425		Poorly preserved		M	M					1			1		
78	424	90		SSW–NNE	S	P		14		S	Irreg. Oval	0.87	1.69	0.08	0.28	466?			425	Agricultural activity			F				1			1		6
79	428	99	1.61	WSW–ENE	S	A	32	30–34	d e s	P(C?)	Sub-Rect	1.1	2.1	0.2	0.23					Virtually undisturbed		F	F					1	1		2	1	125
80	430.1	10		?	D	A	21.5	18–25	a d s	SPREAD	Irregular	1.3	1.8	0.17	0.23			430.3		19thC digging	Charnel pit / grave robbed	M						1					
80	430.3	<5		?	D	C		<12		SPREAD		1	1.6	0.3	0.23		430.1			Burial 430.1	Charnel pit/grave robbed												
81	431	20	1.68	SW–NE	D	A	47	45–49	a d e	P	Sub-Rect	0.92	1.81	0.22	0.24					19thC digging	Grave robbed	M											<1
82	432.1	75	1.71	SW–NE	S(D)	A			a d g	P	Sub-Rect	0.76	2.05	0.12	0.13					19thC drain	Grave robbed	F?	F								1		5
82	432.2	2		SW–NE	D	C	3–4	3–4		P		0.76	2.05	0.12	0.13					Bones in backfill?													
83	436	99	1.71	SSW–NNE	S	A	21.5	17–25	d e s	P	Sub-Rect	0.66	1.93	0.1	0.3					Virtually undisturbed		F	F								1	1	8
84	440.1	95	1.58	SW–NE	S	A	30	25–35	a d e g o	P	Sub-Rect	0.72	1.8	0.13	0.35					Virtually undisturbed	Marker post?	F	F								1		22
84	440.2	50		W–E	SF	I		perinatal		P				0.13	0.35					Virtually undisturbed	Contemporary with 440.1												
85	447.1	35		SW–NE	S(D)	A	30	25–35	a d s t	P	Sub-Rect	0.76	1.78	0.2	0.28			448		19thC drain	Grave robbed	M											
85	447.2	50		SW–NE	S(D)	C	6–7	6–7		P	Sub-Rect	0.96	1.78	0.2	0.28					19thC drain	Grave robbed												
86	450	20		?SW–NE	D	A		45+	a d	S	?	0.9	1.5	0.09	0.22		727			19thC digging	Grave robbed												
87	451.1	60	1.81	SW–NE	D	A	54.5	50–59	d g t	P	Oval	0.86	1.98	0.11	0.21				449	19thC digging	Grave robbed	M											
87	451.2	3		?	D	P		15	s		Oval	0.86	1.98							19thC digging	Respects 453, grave robbed												
88	453.1	98	1.71	S–N	S	A	21.5	18–25	d g s	P (C?)	Rect	0.6	1.79	0.24	0.24					Virtually undisturbed		M	M			1					1	1	
88	453.2	3		?		A	40	35–45	d			0.6	1.79							Bones in backfill?	Respects 451	M											
89	455	85		S–N?	D	P/A	17–18	17–18	s	P	Sub-Rect	0.52	2.09	0.13	0.31					19thC or earlier	Grave robbed												
90	458	98	1.56	SSW–NNE	F L	A		60+	a d e g o	P	Sub-Rect	0.64	1.42	0.3	0.25	459		457, 464, 467		Virtually undisturbed		F										1	
91	459	10		W–E	D	A		18		SPREAD				0	0.23-0.33		458			Plough damaged	In subsoil		F		1				1			1	
92	466.1	5		SSW–NNE?	D	A			d	SPREAD				0	0.28		424?	425		19thC digging	In subsoil. Grave robbed	M											
92	466.2	<1		SSW–NNE?	D	C/P				SPREAD				0	0.28		424?			19thC digging	In subsoil. Grave robbed												
93	526	99	1.62	SW–NE	SF	A	40	35–45	a d i o	P	Sub-Rect	0.6	1.78	0.15	0.27				304	Agricultural activity		F	F							1		1	3
94	529	75		SW–NE	S	C		9		P	Sub-Rect?	0.5	1.5	0.09	0.42			458	304/543	Poor preservation	In ditch fill										1	1	
95	530	99	1.65	WSW–ENE	S	A	55.5	52–59	d e	P	Oval	0.75	1.88	0	0.26-0.34			304/628	304	Virtually undisturbed	In ditch fill	F	F						2		1		18
96	547.1	85	1.66	SW–NE	S	A	30	25–35	a d	P (C)	Sub-Rect	0.85	1.9	0.18	0.41			304/543		Virtually undisturbed	Contemporary with 547.2	F	F					1				1	4
96	547.2	90		SW–NE	S	C	10–11	10–11		P(C)	Sub-Rect	0.85	1.9	0.18	0.41			304/543		Virtually undisturbed	Contemporary with 547.1		F										
97	551	98	1.74	W–E	S	A	25	20–30	d g	P	Irreg. Sub-I	0.8	1.93	0.1	?			559, 557		Agricultural activity		M			1						1	1	
98	553	80	1.72	SE–NW	S	A		45+	a d t	P (C?)	Sub-Rect	0.65	2.04	0.16	?					Virtually undisturbed		M	M								1	1	
99	576	95	1.75	W–E	SF L	A		45+	a d s	P (C)	Rect	0.63	1.85	0.12	0.37		591			Agricultural activity		M										1	
100	578	95	1.75	WSW–ENE	S	A	22	19–25	a d e	P (C)	Sub-Rect	0.45	1.74	0.22	0.33					Virtually undisturbed		M										1	
101	584	98		W–E	S	C		3	e s	P	Sub-Rect	0.43	0.92	0.08	0.13?			579 & 585		Agricultural activity	Abuts 587		F										
102	586	90		SW–NE	S	C	10–11	10–11	s	P	Oval/Sub-R	0.5	1.47	0.1	?			585		Virtually undisturbed													
103	587	90		W–E	S	C		8	e	P	Sub-Rect	0.46	1.2	0.16	?					Agricultural activity	Abuts 584												
104	591	15		NNW–SSE	D	C		7						0.12	0.37	576				Burial 576	Redeposited with 576												
105	592	98	1.66	WSW–ENE	SF L	A	55.5	52–59	d e i s	P	Sub-Rect	0.57	1.68	0.15	0.25?				579	Virtually undisturbed		F			1								
106	626.1	95	1.63	SW–NE	S	A	19	18–20	d o	P	Oval	0.9	2.05	0.23	0.21				304	Virtually undisturbed	In ditch fill	F	F					1			1	1	109
106	626.2	98	1.77	SW–NE	S	A		18	d	P	Oval	0.9	2.05	0.23	0.21				304	Virtually undisturbed	Contemporary with 626.1	M	M										
107	632	35		WSW–ENE	SF R	C		5	s	P	Oval	0.58	1.15	0.18	0.43				304	Virtually undisturbed			M								1		
108	679	80		WSW–ENE	S	C	1.5			P (C?)	Sub-Rect	0.7	1.04	0.24	0.43					Virtually undisturbed			F		1								2
109	683.1	3		?	D	A			a d		Oval	0.85	2.1	0.32	?	683.2		685		Burial of 683.2??	Grave robbed		F		1								
109	683.2	90		W–E	S	A	40	35–45	a d s	P (C?)	Oval	0.85	2	0.4	?		683.1	685		Virtually undisturbed	Possibly contemporary with 683.1	F	F		1						1	1	
110	687.1	65	1.51	S–N	S(D)	A		25	d e g	P	Sub-Rect	0.91	2.0+	0.16	?					19thC drain	Grave robbed	F	F										
110	687.2	55	1.63	S–N	S(D)	A	27	25–29	e	P	Sub-Rect	0.91	2.0+	0.16	?					19thC drain	19thC disturbance	F	F										
111	688	60	1.65	SSW–NNE	SF	A		45+	a d	P	Sub-Rect	0.49	1.55+	0.1	?					Plough damage		M	M								1		
112	719.1	30	1.77	?	D	A	30	25–35	a d t	SPREAD	?			0	0.21				409	19thC and agriculture	In fill of ditch	M											
112	719.2	2		?	D	C	7–12	7–12		SPREAD	?			0	0.21				409	19thC and agriculture													
112	719.3	<1		?	D	C/P				SPREAD	?			0	0.21				409	19thC and agriculture													
113	725.1	2		WSW–ENE	D	A	30	25–35	d s	S	Sub-Rect	0.74	1.5+	0.1	0.2?					19thC digging	Grave robbed	F											
113	725.2	1		WSW–ENE	D	A				S	Sub-Rect			0.1	0.2?					19thC digging	Redeposited	M											
114	726	85	1.63	SW–NE	D	P/A	21.5	17–25	d e	S				0	0.14				409	19thC and agriculture	In ditch fill	F	F										
115	727	99	1.79	S–N	SF	A	22	20–24	d e g	P	?		1.85	0.26	0.22	450				Virtually undisturbed		M	M								1		

Key to table 3.3: Posture: S: Supine, D: Disturbed, R: Right side, L: Left side, F: Flexed, SF: Semi-flexed, P: Prone; Age: A: Adult (18+ yrs), P: Puberty (12–17 yrs), C: Child (1–11 yrs), I: Infant (less than 1yr), Years: mean of age range; Grave type: P: Pit, S: Scoop, C: Coffin; Pathologies: a: arthropathies (excluding spinal) including DISH, D: dental, e: epigenetic, G; activity/gait, i: infection, n: neoplasia, s: stress indicators, t: trauma, o: other. Spinal osteoarthropathies so numerous as to be excluded from this table (see Chapter 4)

Table 3.3 Summary of grave and burial information – 1987–91 excavations

Grave				Brooch	Wristclasp	Girdle group	Chatelaine	Latch lifter	Shield	Spearhead	Miscellaneous
	Amber	Glass	Misc						boss = 1; fittings = x		
1											Sharpened animal bone
2											
2											
2											Copper alloy vessel mount
2									1		Copper alloy vessel mount and stud
3	30			2	3	x					Cu alloy mount & 2 coins
4											Cu alloy rivet, plate frags & vessel glass
5	5	61	1								Rim sherds
6		1									
6											Sherds
7									1	1	
8											Iron fragments
9										1	Nails and Cu alloy vessel mount
9									x		Shield studs
10											
10	15	1		2	2	x	1?	3			Cu alloy girdle hanger
11											Cu alloy hook & rivet (mount) and nails
12									1	2	Shield stud
13											Iron fragment
13	35	1	1	3	2	x		2			2 strap ends, ivory purse ring frag
14	5	7									
15	9	4	2								
16											Sherds
17											Nails and iron plate fragment
18											
18											Coin pendant
18		1				x		1			Weaving batten, spindle whorl, etc.
19	14	1	1	1	1.5+1?						Ag or Cu alloy sheet & Ag? ring
19	52	22	1	2	2.5+1?	x					Cu alloy strapends, bucket pendant
20	12			1		x	1				Nail
21											
22											
23			1								Spindle whorl & iron frags
24											
25											
26											Iron fragment
26											Nail (51.1 or 51.2)
27									x		Shield grip frags?
28									1	1	
29									1		Stud
29	3	11		2							Cu alloy strap ends
30											
31											Iron fragments, sherds and shell frags
32											
33									1	1	Shield braces
34									1		Shield studs and nails
35											
36									1?	1	Disc-boss?, shield fitting
37				1							Iron objects
38	24	1				x					Pin & stain=Brooch? iron rod and nails
38											
39				2(3)		x		?			Stud, rivets, iron fragments, sherds
40											
41											
42											Rod
43											
43											
44											
45											
46									1	1	Cu alloy rivet, ceramic counter, glass frag
47										1	Cu alloy fitting
47						x		1?			Sherds
48									1	1	
49		1	1	1							Nails, sherds (Roman?) Brooch - 1st CAD
50											Spearhead possibly associated
51									1	1	Stud and rivets, Samian sherd
52											
53	26			2							Pin/nail, sherds
54						x		1			Nail, sherds
55											
56											
57											
58											
59											Cu alloy stud
60						x	1				Bed, silver ring, pin, chain link, box fitting
61	17	5									
61											
62										1	Iron pin
63											Iron nails
64											NOT EXCAVATED
65											
65											Cu alloy bracelet

Table 3.3 Summary of grave and burial information – 1987–91 excavations

Grave				Brooch	Wristclasp	Girdle group	Chatelaine	Latch lifter	Shield	Spearhead	Miscellaneous
	Amber	Glass	Misc						boss = 1; fittings = x		
66									x	1	Shield studs, vessel fittings
66	72	1	1	2		x					Pin, Cu alloy strip (vessel fittings?)
67											
68	18		2	2	1	x		?			Nails/rod
69					2	x		1			Ivory ring, vessel mount, strap mount
70									x		Shield stud, iron plate, boss rim
71											Iron plate from 367.1 or .2
71											
72	10										Cu alloy sheet and iron & shell frags
72											
73											Cu alloy disc brooch from 1000 near 372
74					0.5						Ceramic counter
75											Cu alloy fitting (belt slide or cleat)
76										1	
77									x		Iron studs, nail and plate
78	11	1		1		x		3			Cu alloy fittings & nails
79	145	12		2		x		4			Ivory ring, belt ring, Cu alloy sheet
80											Sherds & iron frags from 430.1/2
80											
81	1										Nail
82	10										Nail & iron sheet
82											
83	3	11		1		x		3			Antler ring, girdle hanger, studs
84	29	2	1								Nail
84											
85											Shark's tooth
85											
86											Iron frags
87											Iron frags from 451.1 or 2
87											Iron frags
88									1	1	Shield studs
88											
89											
90											
91		7				x					Silver wire, gold pendants, nail
92											
92											
93	18			2	2						Iron fragments
94											Bone pin
95	45	18	1	2							Cu alloy sheet & bracelet
96	12		1	2		x?					Cu alloy pendant, Cu alloy tube
96		2									Cu alloy bead tube
97											
98										1	
99											Iron frags
100											
101		1									
102											Iron rod
103											
104											
105											Cu alloy pin
106	167	11	2	2	2						Girdle hanger, studs
106										1	Cu alloy sheet, belt ring
107										1	
108	1	14									
109		2									Hob nail
109		1				x	1				Spindle whorl, coin, box fitting
110	2		1								Nail, stud, iron fragments
110	4										Nail
111										1	
112											Knife frags from this context
112											
112											
113											
113											
114	17										
115										1	

mostly in subsoil, Sk2 seems to have survived without severe plough damage, with missing bones apparently restricted to the right lower arm and some ribs; but it is worth noting that both feet were missing. These should have lain in the northern end of the grave where it cut the upper fills of a probable Iron Age gully/ditch; this disturbance may indicate slumping of, or animal activity in, the softer ditch fill.

Feature F2

Sk2 – Female, 35–39. Height 1.63m. 65% complete. Special pathological features observed. Supine.

- **Knife**, *Δ1, iron (Type A), with mineral-preserved horn handle and possible leather sheath. Length 160mm.*
  Worked bone, *Δ2. Length 63mm.*

(Fig 3.30)
Knife by waist, on L side, no record of where Δ2 was found. Plan Fig 3.68.

Grave 2 (Feature 3, Sk3A.1, Sk3A.2, Sk3B, and Sk3C) (see also Grave 1)

Depth below surface to top of grave: 0.3–0.42m; grave depth cut into chalk: 0.12m; shape/type of grave: sub-rectangular; orientation: 177°.

Of this complex Sk3C was the earliest burial in a well formed sub-rectangular grave cut into chalk. It was virtually undisturbed by later activity but its skull had been shattered (by compression?). Sk3B had been laid directly over Sk3C with a layer of stones separating the two bodies. This deliberate deposit of stones strongly suggests that Sk3C and Sk3B were contemporary. Sk3A.1 and Sk3A.2, 5% and 2% of two individuals respectively, seem to have been placed over Sk3B using the same grave, but there are insufficient data to show whether this third burial was contemporary, or whether it was a slightly later addition which may have disturbed Sk3B. The plan of Sk3B shows few ribs remaining, no right arm or skull, and a spinal column that has been 'knocked' out of line in the middle. Some of this disturbance may have occurred when Sk3A.1 and Sk3A.2 were added to the grave but most of the disturbance can be attributed to the effects of ploughing (possibly 'pan-busting') which has left very little of the upper part of Sk2 remaining. From beneath the skull of Sk2 (grave 1) a humerus was found which has been identified as belonging to Sk3A, the grave of which had been cut at its north-western (feet) end by grave 1.

Feature F3

Sk3A.1 – possibly female adult, 5% complete;

Sk3A.2 – possibly male adult with evidence of arthritis, 2% complete. Disturbed.

- **Buckle**, *Δ2, (oval loop), iron, with traces of leather belt and a few threads. Width 21mm.*
  Knife, *Δ1, iron, with horn handle and traces of leather sheath. Length 113mm.*
  Comb, *Δ3, 2 antler fragments. Length of largest fragment 34mm.*

(Fig 3.30)
Buckle found with knife in laboratory. Comb fragments found with bones during washing.

Sk3B – Male, age 23–59. Height 1.69m. Evidence of arthritis. 55% complete. Supine.

- **Mount fragment**, *Δ1, possibly from the rim of a vessel: two pieces of copper-alloy sheet joined by copper-alloy rivet. Length 19mm. Probably from same vessel as mount listed in F3C, below.*
  Comb, *Δ2, antler (double-sided composite) with iron rivets. Length of largest fragment 30mm.*

Sk3C – Male, age 18. Height 1.79m. 85% complete. Supine.

- **Buckle**, *Δ3, (D-shaped), iron loop, copper-alloy plate and iron rivet with mineral-preserved remains of leather belt and textile on the loop. Width 12mm.*
  Knife, *Δ4, iron (Type C, size-group 3), with mineral-preserved traces of horn handle and possible traces of leather sheath. Length 179mm.*
  Iron object, *Δ5, unidentified, with possible traces of leather. Found with knife; identification as a steel suggested. Length 48mm.*
  Shield boss *(Group 3)* **and grip**, *Δ2, iron, with mineral-preserved wood, possibly beech, and leather from the shield board. External diameter 162mm, grip length 113mm.*
  Shield stud, *Δ7, iron. Diameter 15mm. Found during sieving. Not illustrated*
  Mount, *Δ1, copper-alloy sheet with copper-alloy rivet, from unidentifiable thin-walled object, perhaps a vessel. Width 9mm.*
  Iron fragment, *Δ6, unidentified. Maximum dimension 25mm. Not illustrated.*
  Comb, *Δ8, two fragments of double-sided composite antler comb. Length of largest fragment 30mm. Found in grave fill.*

Shield boss over left forearm. Buckle and knife at waist. Plan Fig 3.68

Grave 3 (Feature 4, Sk4)

Depth below surface to top of grave: 0.35m; grave depth cut into chalk: 0.2m; shape/type of grave: oval, rectangular with depth; deep cut; coffin?; orientation: 225°.

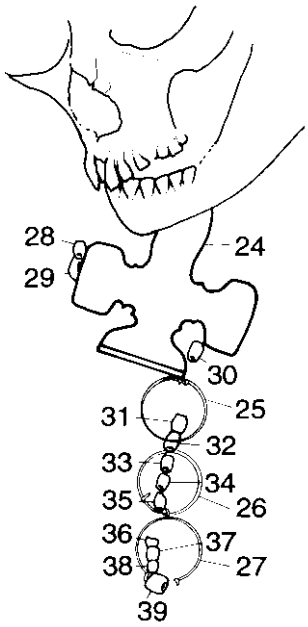


Figure 3.7 Grave 3, detail of brooch, slip-knot rings, and amber beads

The head seemed to be pillowed up by the end of the grave and the body cramped in the narrow cavity. The jaw had fallen open and one brooch was found inside the skull, suggesting post-mortem movement in the grave. The depth and narrowness of the grave, together with the suggestion of a cavity which allowed the jaw to drop open, could indicate use of a 'coffin'.

Feature F4

Sk4 – Female, age 25–35. Height 1.61m. Evidence of congenital/developmental pathology and trauma. 80% complete. Supine.

- **Small long brooches, 2**, *Δ23, Δ24, (cross-headed type), copper-alloy, with mineral-preserved textile. Lengths Δ23 73.5mm, Δ24 72.5mm.*
  Slip-knot rings, *4,Δ1, Δ4, Δ25, Δ26, Δ27, copper-alloy. Diameters Δ4 28mm, Δ25 24mm, Δ26 21mm, Δ27 22mm.*
  Amber beads, 30, *Δ2, Δ3.1–2, Δ5.2, Δ6–8, Δ22.1–3, Δ28–43, Δ44.1–3, total weight c 11gr. Not illustrated.*
  Buckle, *Δ13, (D-shaped), with probable mineral-preserved leather and textile. (Associated with Δ18).*
  Buckle plate, *Δ12, iron, with mineral-preserved leather and textile. Length 42mm.*
  Ring, *Δ19, Δ20, iron, in two fragments. Diameter 28mm.*
  Wrist-clasps, **3 pairs**, *Δ10, Δ11, Δ17, copper-alloy (Form B 7) one possibly with a few mineral-preserved threads. Lengths Δ10 32.5mm, Δ11 35mm, Δ17 37mm.*
  Knife, *Δ15, Δ16, iron (Type A), with mineral-preserved horn handle and possible leather sheath. Length 112mm.*
  Tweezers, *Δ5, copper-alloy. Length 44mm.*
  Mount, *Δ14, copper-alloy sheet with iron rivet. Length 24mm.*
  Roman coins, **2**, *Δ17.1 and 17.2, copper-alloy. Not illustrated.*
  Clay object, *Δ22.3, unidentified. Not illustrated.*
  Unidentified object, *Δ18, iron. Width 14mm. Suggested identifications have included a buckle or a chatelaine fragment. (Associated with Δ13.)*

One brooch inside skull. Beads and slip-knot rings down front of costume and over right shoulder (Fig 3.7). Wrist-clasps by lower arms. Buckle plate at waist. Purse group (coins and wrist-clasp), buckle and knife between legs. Plan Fig 3.68.

Grave 4 (Feature 8, Sk8)

Depth below surface to top of grave: 0.29m; grave depth: in subsoil only; shape/type of grave: oval; orientation: 135°.

Skeleton partly articulated but badly disturbed by ploughing.

Feature F8

Sk8 – Possibly male, adult. 15% complete. Supine.

- **Rivet**, *Δ1, copper-alloy. Diameter of head 18mm.*
  Knife, *Δ3, Δ4, iron (Type A), with mineral-preserved traces of a leather sheath and textile. Length 60mm longest piece.*
  Plate fragment, *Δ5, iron. Maximum dimension 30mm.*
  Glass vessel fragment, *Δ7, pale blue colour. Missing, not illustrated.*

'Natural stone', Δ2, recorded as deliberately deposited. Not illustrated.

Knife in chest area; rivet beside left elbow. Plan Fig 3.68.

Grave 5 (Feature 9, Sk9) (see also Grave 6)

Depth below surface to top of grave: 0.18–24m; grave depth cut into chalk: 0.08–0.1m; shape/type of grave: sub-rectangular, coffin? (marker post?); orientation: 225°.

Both features F9 and F10 (graves 5 and 6) were represented by shallow scoops in the chalk. Feature F9 appeared to cut the northern edge of feature F10

and was more sub-rectangular in shape than the ovoid feature F10.

To the north of grave 6 there appears to be a wide, shallow grave-cut, but this probably derives from the infill of feature F9 which was definitely cut in a wide rectilinear form to take the supine burial. The positioning of the arms and slumping of the bead necklace with Sk9 are suggestive of post-burial movement during decomposition within a cavity, possibly indicating the use of a coffin.

The regularity of the feature is enhanced by the apparent bulge at the east end having been caused by a posthole (F209) that contained two possible postpipes. It was impossible to decide the stratigraphic relationship between the grave and posthole, but their relative locations would argue strongly for contemporaneity and that the post(s) acted as a marker for the grave.

Feature F9

Sk9 – Female, age 25–29. Height 1.66m. Evidence of congenital and developmental pathology (thirteen thoracic vertebrae) and special pathological features observed. 90% complete. Supine.

- **Beads, 67**, *Δ1–6, Δ8–45, Δ63–83, 61 glass (including 46 polychrome, 14 monochrome), 5 amber (total weight c 7gr), 1 'chalk'. Not all illustrated.*
  Knife, *Δ52 , iron (Type A; size-group 1), with traces of leather sheath and horn handle. Length 87mm.*
  Pottery, *Δ54, rim sherd. Length 107mm.*

Beads along shoulders and to R side; knife at waist, to R side; potsherd at right hand. Plan Fig 3.68.

Grave 6 (Feature 10, Sk10A, Sk10B) (see also Grave 5)

Depth below surface to top of grave: 0.24m; grave depth cut into chalk: 0.08m; shape/type of grave: oval, scoop; orientation: 240°.

The burials within feature F10 consisted of two children with Sk10B underlying Sk10A. Grave 6 (Sk10B) was the earliest in the sequence, and it can be seen from the plan that the crouched position has been accommodated by the otherwise oval grave-cut of grave 6. In addition the skull and lower arms of Sk10B are largely missing, the conclusion being that Sk10B was placed in a grave deliberately cut for a crouched burial, and that the insertion of the supine burial Sk10A changed the outline of the grave and disturbed the skull and lower arms of the earlier burial.

Feature F10

Sk10A – Child, age 6. 70% complete. Supine.

- **Knife,** *Δ1, iron (Type A), with mineral-preserved horn handle and traces of leather sheath. Length 72mm.*
  Bead, *Δ2, glass.*

Knife at waist. Plan Fig 3.69.

Sk10B – Child, age 4. 60% complete. Flexed.

No finds were recorded with this burial.

Grave 7 *(Feature 11, Sk11)*

Depth below surface to top of grave: 0.26m; grave depth cut into chalk: 0.12m; shape/type of grave: oval; orientation: 213°.

Burial of a well-preserved skeleton and artefacts in an undisturbed state. The shield boss and spearhead have remained *in situ*, and there is no sign of plough damage or other interference, although the bent spearhead might have derived from ploughing. However, it is possible that the spearhead had been deliberately damaged before burial, and the shield broken, as the position of the boss would not have allowed room for the complete shield in the existing grave-cut.

Feature F11

Sk11 – Male, age 25–35. Height 1.72m. Evidence of arthritis and special pathological features. 85% complete. Supine and flexed.

- **Buckle**, *Δ3, (oval loop), iron, with mineral-preserved leather and textile. Width 12mm.*
  Knife, *Δ6, iron (Type A; size-group 1), with horn handle and leather sheath. Length 113mm.*
  Spearhead, *Δ1, iron (Type E2), with mineral-preserved ash wood (Fraxinus sp.) in socket. Length 246mm.*
  Shield boss *(Group 3)* **and grip**, *Δ2, iron, with mineral-preserved wood (willow (Salix sp.) or poplar (Populus sp.)) and leather from the board. Diameter 165mm. Small fragment of possible horn on the grip, perhaps intrusive.*

Spearhead at head of grave, to L side. Shield boss over L elbow. Buckle at waist. Knife beneath left pelvis. Plan Fig 3.69.

Grave 8 (Feature 12, Sk12)

Depth below surface to top of grave: 0.32m; grave depth cut into chalk: 0.04m; shape/type of grave: sub-rectangular; (marker post? F132); orientation: 203°.

There has been some damage to the skull and feet (crushing by agricultural machinery or through

animal activity). The fill of the grave continued to the south of the skull and covered a posthole (or double posthole), F190, which had contained a post 0.15m thick, cut 0.2m deep into the chalk, with an elongated area of packing around it which might originally have contained another post. This would suggest contemporaneity between the grave and posthole, for which the latter might have acted as a marker post(s).

Feature F12

Sk12 – Child, age 4. 75% complete. Flexed.

- **Knife**, *Δ1, iron, with mineral-preserved horn handle and possible leather sheath. Length 90mm.*
  Ring, *Δ3, iron. Fragmentary. Not illustrated.*
  Fragments, *Δ2, unidentified iron. Not illustrated.*

Knife just above waist, behind the back. Plan Fig 3.69.

Grave 9 (Feature 13, Sk13A, Sk13B) (see also Grave 41)

Depth below surface to top of grave: 0.24m; grave depth cut into chalk: 0.23m; shape/type of grave: sub-rectangular; orientation: 251°.

Contains two burials, Sk13A and Sk13B. This grave, at its western end, was cut through a pit, F132, and was found to have been disturbed by animal activity at its eastern end. However, the skeletal remains survived very largely intact and undisturbed.

Sk13B was the earlier of the two burials and was placed semi-flexed at the base of a rectangular grave, the head pillowed against the west end of the grave. Sk13A was placed in a similar manner over the earlier burial without causing disturbance, but with a less angular grave-cut than lower down. The second skeleton was found to extend to a depth of 0.18m in the grave with Sk13B occupying a space 0.05m deep beneath it. These depths, and the way in which the skull of Sk13B was lying almost vertically in the grave, show that there has been considerable subsidence in the grave as part of the post-burial process. The shield studs found in association with the arm bones of Sk13B, however, had not subsided from the burial above although three of them were found around the right hand suggesting some slippage had occured in the lower burial. It would seem therefore, that the two burials are contemporary, and have been deliberately laid out in very similar manner to one another. Immediately to the south-west another grave (grave 41, F133) lies on the same alignment, and the proximity of the two graves, without intercutting, suggests the position of the first grave was known when the second was dug.

Feature F13

Sk13A – Male, age 45+. Height 1.61m. Evidence of arthritis, dental pathology, and trauma. 85% complete. Supine with legs flexed.

- **Buckle**, *Δ6, iron (oval loop), with spun threads on tongue. Width 21mm.*
  Buckle loop, *Δ5, fragment, iron (unclassifiable), with possible leather. Maximum dimension 19mm.*
  Knife, *Δ7, iron (Type A; size-group 1), with mineral-preserved horn handle and possible leather sheath. Length 135mm.*
  Spearhead, *Δ1, iron (Type H3). Length 405mm.*
  Vessel-mount, *Δ2, copper-alloy sheet with iron rivets and preserved wood. Mount for stave built container made from willow (Salix sp.) or poplar (Populus sp.). Width 27mm.*
  Iron fragment, *Δ8, perhaps a nail, which had been mounted on some material at least 8.5mm thick, ie probably wood rather than leather. Length 14mm.*
  Iron objects, *Δ3, Δ4, unidentified. Maximum dimensions Δ3 24mm, Δ4 20mm.*

Spearhead at head of grave, on L side. Mount and knife, blade towards head, at waist. Buckle by right knee. Plan Fig 3.69.

Sk13B – Unsexed, age 17. 80% complete. Supine with legs flexed.

- **Buckle**, *Δ1, copper-alloy (D-shaped loop), with long plate plus textile and fragment of leather belt. Width 18mm.*
  Buckle, *Δ7.2, iron (oval loop). Width: 15mm. Identified with knife (below) in laboratory. Spun threads on loop.*
  Knife, *Δ7.1, iron (Type A), with possible horn handle and traces of leather sheath. Length 61mm.*
  Shield board rivet discs, **4**, *Δ2–5, iron, with remains of wood – willow (Salix sp.) or poplar (Populus sp.) – and leather from the shield board and mineral-preserved plant stems. Diameters Δ2 39mm, Δ3 40mm, Δ4 40mm, Δ5 39mm.*
  Iron strip, *Δ6, iron, unidentified.*

Shield rivet discs by waist, upper leg and lower arm to R side. Buckle and knife at waist, R side. Copper-alloy buckle over left elbow. Plan Fig 3.69.

Grave 10 (Feature 16, Sk16A, Sk16B)

Depth below surface to top of grave: 0.31m; grave depth cut into chalk: 0.15m; shape/type of grave: sub-rectangular; (marker post? F196); orientation: 233° (aligned along Iron Age ditch F30).

Two burials assigned to this grave were excavated

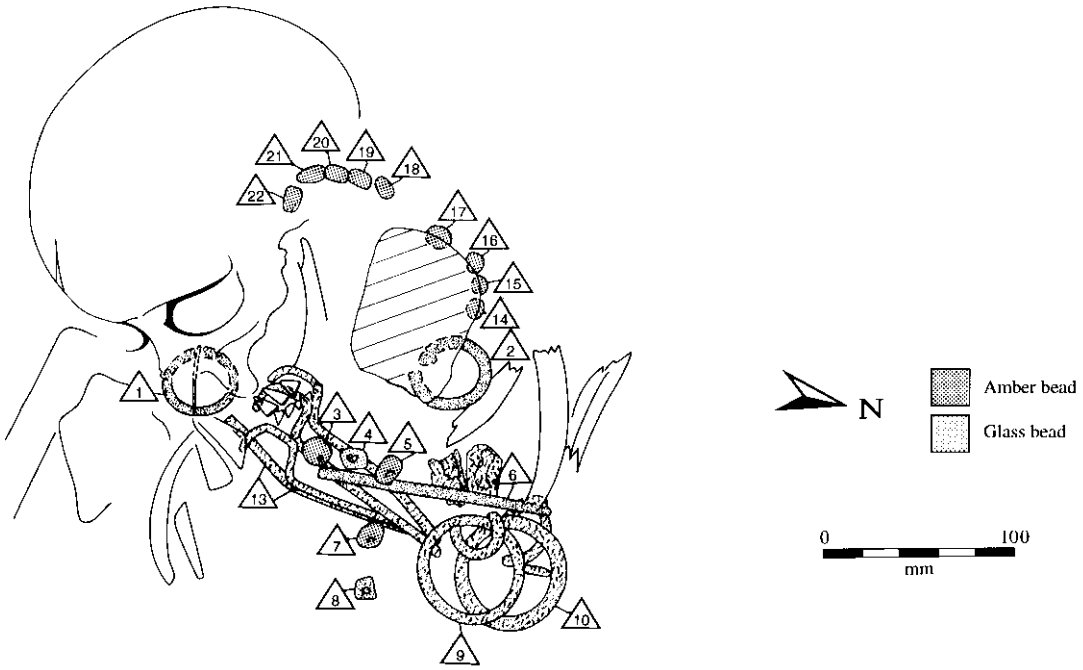


Figure 3.8 Grave 10, detail of bag contents on chest

in succeeding years. The direct correlation between them was not clearly recorded, but it appears that Sk16B was the first inhumation, laid supine in a well-cut sub-rectangular grave. The skull was pillowed against the western end and the feet were found to be raised at the eastern end indicating that the post-cranial skeleton had slumped into the base of the grave-cut.

The later skeleton (Sk16A) appears to have had minimal burial and to have been placed in the soil overlying the filled grave of Sk16B. Although the depth of Sk16A gave it little protection from ploughing (it was found to be missing some of its skull and feet bones), in comparison to the better protected burial Sk16B much more of the skeleton had survived. This is attributed to differential burial conditions, while the poor preservation of the ironwork from burial Sk16B also suggests unfavourable soil conditions in the grave.

A posthole (F196) was found at the head end of Sk16A which might have acted as a marker post for the burial. There is no stratigraphic or dating evidence to confirm this, but the proximity of the two features argues for such an interpretation, especially as there was no evidence for associating the posthole with other structural features of Iron Age date. The posthole was 0.3m in diameter and cut to a depth of 0.38m into the chalk, but the postpipe appeared to be only 0.1m thick and 0.25m deep.

Both burials seem to have been positioned adjacent to an Iron Age ditch (F30) and aligned along its northern edge (as was also the case with grave 12 immediately east of grave 10). There is insufficient evidence to indicate that Sk16A and Sk16B were contemporary, but it is likely that the later burial had been deliberately located over a known grave. This suggests that there was no great time gap between the two burials.

Feature F16

Sk16A – Female, age 30–34. Height 1.65m. Evidence of arthritis and special pathological features. 80% complete. Supine and flexed.

No artefacts found with this burial.

Sk16B – Unsexed, age 15–16. Evidence of dietary pathology. 50% complete. Supine.

- **Annular brooches**, **2**, *Δ1, Δ2, Δ27, copper-alloy, one with mineral-preserved textile. Diameters Δ1 39mm, Δ2 38mm. Δ27 is an iron object that overlay Δ2, and could be the brooch pin. Length 29mm.*
  Beads, *Δ3–5, Δ7, Δ14–24, Δ29, 1 polychrome glass, 15 amber (total weight c 12gr). Amber beads not illustrated.*
  Wrist-clasps, **2 pairs**, *Δ11, Δ12, copper-alloy, (Form B 7) with associated semi-mineral-preserved textile. Lengths Δ11 37mm, Δ12 30mm.*
  Girdle group, *(see Ch 6.10)*
  Rod, *with suspension loop, Δ6, copper-alloy. Like a girdle hanger shaft but the usual terminal is absent. Length 122mm.*
  Latch lifters, **3**, *Δ13, iron. Lengths 127mm, 125mm, and 88mm.*
  Mount, *Δ8, copper-alloy sheet, perforated. Maximum dimension 12mm.*
  Rings, **2**, *Δ9, Δ10, iron, overlain by fragments of a small iron ring and rods. Associated with latch*

lifter complex. Diameters 55mm and 56mm.
Copper-alloy fragments, **3**, *Δ30, small copper-alloy. Maximum dimension 8mm. Two fragments not illustrated.*

Annular brooches by shoulder. Beads around back of neck and on chest. Wrist-clasps by wrists. Girdle group (contents of bag?) on L chest and under chin (Fig 3.8). Fragments Δ30 found inside cranium. Plan Fig 3.69.

Grave 11 (Feature 17, Sk17)

Depth below surface to top of grave: 0.2m; grave depth cut into chalk: 0.16m; shape/type of grave: sub-rectangular; very regular – coffin?; orientation: 220°.

This feature was a well-cut grave for an adult. Local conditions seem to have resulted in very poor preservation around the stomach area with no surviving lumber or thoracic vertebrae. Accompanying grave goods were few but there were no indications of disturbance to the burial by ploughing or robbing. The regularity and depth of the grave, and the fact that the jaw had dropped open suggests a cavity existed and indicates the possibility that this was a coffin burial. Two small nails were found, but these do not look like examples of coffin nails.

Feature F17

Sk17 – Possibly male, age 45+. Height 1.60m. Evidence of arthritis and dental pathology. 60% complete. Supine with knees flexed.

- **Mount**, *Δ4, copper-alloy, perforated at either end; one copper-alloy rivet survives. Length 18.5mm.*
  Knife, *Δ3, (Type A; size-group 1), iron. Length 150mm.*
  Nails, **2**, *Δ1, Δ2, iron. Lengths Δ1 14mm, Δ2 13mm.*

Knife at waist; mount between legs. Nails towards sides of grave. Plan Fig 3.70.

Grave 12 (Feature 19, Sk19)

Depth below surface to top of grave: 0.29m; grave depth cut into chalk: 0.16m; shape/type of grave: sub-rectangular; scooped base; (marker post?); orientation: 225° (aligned with Iron Age ditch F30).

Feature F19 is a grave cut deeply (for Barrington) into the chalk and the edge fill of an Iron Age ditch (F30) alongside which the burial might have been deliberately aligned. It contains the largely undisturbed burial of an adult male. Overall the skeleton is very well preserved but the highest points (skull and feet) have been damaged.

Immediately to the south-west (the head-end) of the grave a posthole (F197) was found which may to have functioned as a marker post for the burial. No stratigraphic or dating evidence can attribute this feature to either Iron Age or Anglo-Saxon times, but by association it would seem logical that it was connected with the grave. The post was 0.32m wide and had 0.02m of packing all around it; the posthole was cut 0.4m deep into the chalk (cf feature F16/1F96, grave 10).

Feature F19

Sk19 – Male, age 20–24. Height 1.83m. Evidence of arthritis, dietary, congenital/developmental pathology, and special pathological features. 90% complete. Supine.

- **Buckle**, *Δ7, iron (oval loop), with possible traces of leather belt and few threads, found in grave fill. Width 16mm.*
  Knife, *Δ5, iron (Type A; size-group 1), with probable horn handle and traces of leather sheath. Length 98mm.*
  Shield boss *(Group 6)* **and grip**, *Δ3, iron, with mineral-preserved lime wood (Tilia sp.), and leather. External diameter 125mm, grip length 127mm. Shield rivets, iron, with mineral-preserved wood, possibly lime, from the board.*
  Spearheads, **2**, *Δ1–2, iron (both Type E4), both with mineral-preserved hazel wood (Corylus sp.) in socket. Lengths Δ1 360mm, Δ2 355mm.*

Spears by head, on R side, pointing into the grave. Knife by waist L side. Shield boss between legs, just above R knee. Plan Fig 3.70.

Grave 13 (Feature 20, Sk20A, Sk20B)

Depth below surface to top of grave: 0.38m; grave depth cut into chalk: uncertain; shape/type of grave: sub-rectangular; orientation: 281°.

Contains two burials laid in a wide sub-rectangular grave. The earliest burial was that of a woman (Sk20B). Over her left shoulder and chest an infant (Sk20A) had been laid. Both skeletons were supine and were separated by a substantial layer of soil 0.05m thick. The higher burial was not complete, partly because of its position closer to the surface than Sk20B, and partly because of poorer bone preservation in children's skeletons. The underlying burial of Sk20B shows virtually no disturbance to either its bones or grave goods.

The two burials were contemporary. Feature F20's relationship to an Iron Age ditch (F15) at its eastern end is recorded as uncertain, but the plan of the grave-cut suggests that it abuts the ditch rather than cutting it.

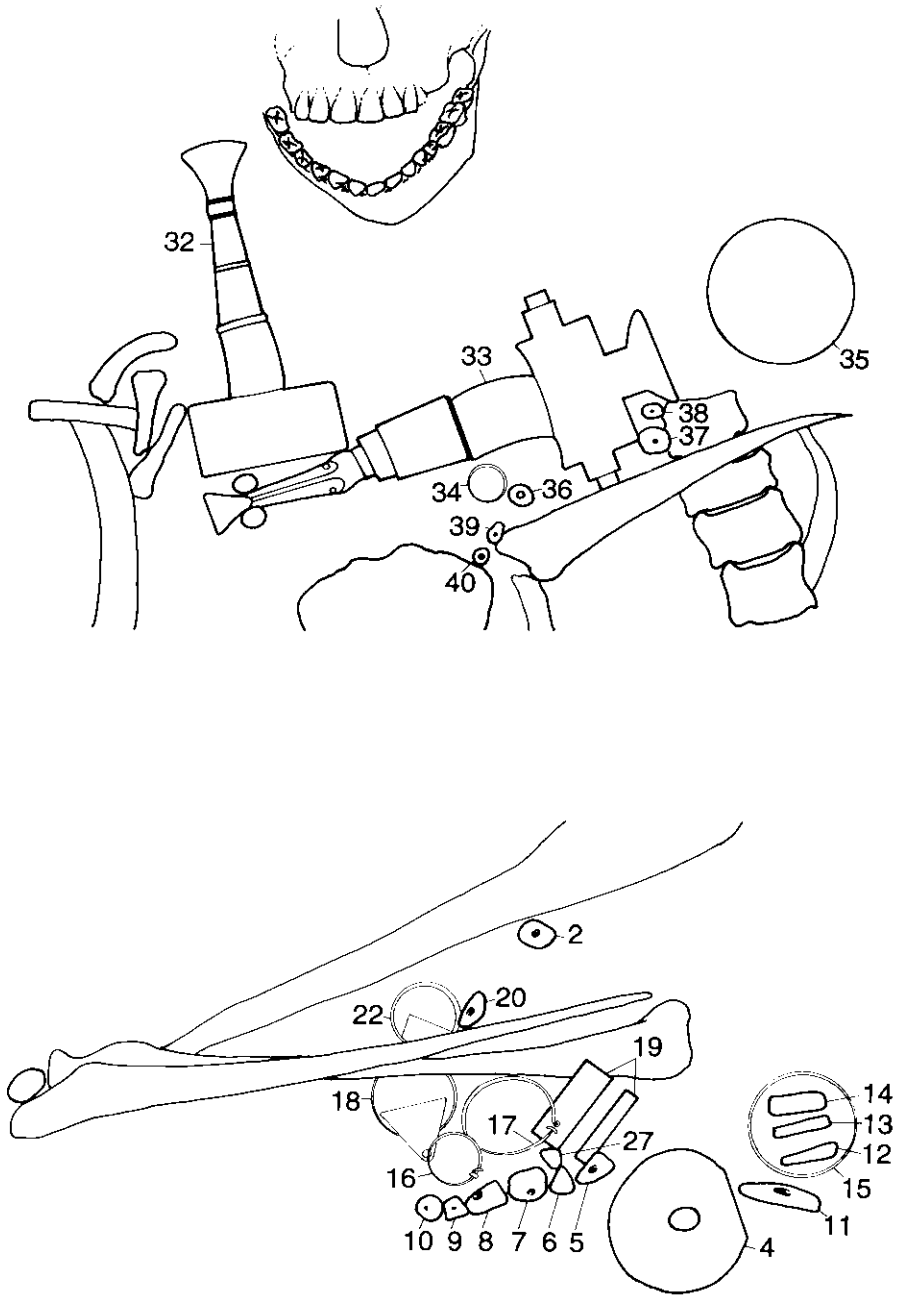


Figure 3.9 Grave 13, detail of brooches on chest and necklace slumped around right arm

Feature F20

Sk20A – Infant. 60% complete. Supine.

- **Buckle**, *D3, iron (fragmentary, unclassifiable), with mineral-preserved leather. Width 17mm.*
  Knife, *Δ2, iron (Type B; size-group 1), with probable horn handle and traces of leather sheath. Length 109mm.*
  Pot, *Δ1. Height 154mm. Sub-globular, with inverted rim.*
  Unidentified fragment, *Δ4, iron. Maximum dimension 15mm. Not illustrated.*

Knife around L ribs. Buckle at waist, R side. Pot beyond the feet. Plan Fig 3.70.

Sk20B – Female, age 25. Height 1.66m. Evidence of arthritis and congenital/ developmental pathology. 85% complete. Supine.

- **Cruciform brooch**, *Δ33, tinned copper-alloy face with iron pin (Type D), with mineral-preserved textile. Length 119mm.*
  Small long brooch, *Δ32, (cross-headed derivative type), copper-alloy with textile impression over head of brooch. Length 78mm.*
  Disc brooch, *Δ35, copper-alloy with white metal surface and iron pin with mineral-preserved*

textile. Diameter 38mm.
Beads, *Δ1–14, Δ20, Δ24–7, Δ29.1–7, Δ31, Δ36–40, Δ41.1–3, Δ42–43, Δ46, 35 amber (total weight c 22gr), not illustrated, 1 polychrome glass, 1 crystal.*
Slip-knot rings, **7**, *Δ15–18, Δ22, Δ28, Δ34, copper-alloy, 3 with spangles, Δ17 with attached rod. Average diameter 21.5mm.*
Buckle, *Δ44, iron (D-shaped) with inlaid silver strips on loop, with mineral-preserved textile and leather. Width 15mm.*
Strap-end, *Δ21, copper-alloy with iron rivets. Length 17mm.*
Wrist-clasps, **2 pairs**, *Δ19, Δ23, copper-alloy (Form B 13a). Lengths Δ19 33mm, Δ23 32.5mm.*
Latch lifters, *Δ30.1, 2 (or 3) on iron ring, with mineral-preserved plant stems and textile. Length 191mm. (see Ch 6.10).*
Knife, *Δ30.2, iron (Type A; size-group 1), with horn handle and mineral-preserved leather sheath. Length 67mm.*
Purse ring fragments, *Δ30, ivory. Length of largest fragment 35mm.*
Copper-alloy fragments, *Δ45, unidentified, possibly a strap-end. Lengths 30mm.*
Iron fragment *Δ41, unidentified, associated with organic material. Not illustrated.*

Cruciform brooch across throat; small long brooch on R shoulder, head downwards. Disc brooch on L shoulder. Some beads around brooches, slumped to R (Fig 3.9). Slip-knot rings by R arm with beads. Ivory ring fragment, latch lifters, knife at L hip. No record of where Δ44 and Δ45 found. Plan Fig 3.70.

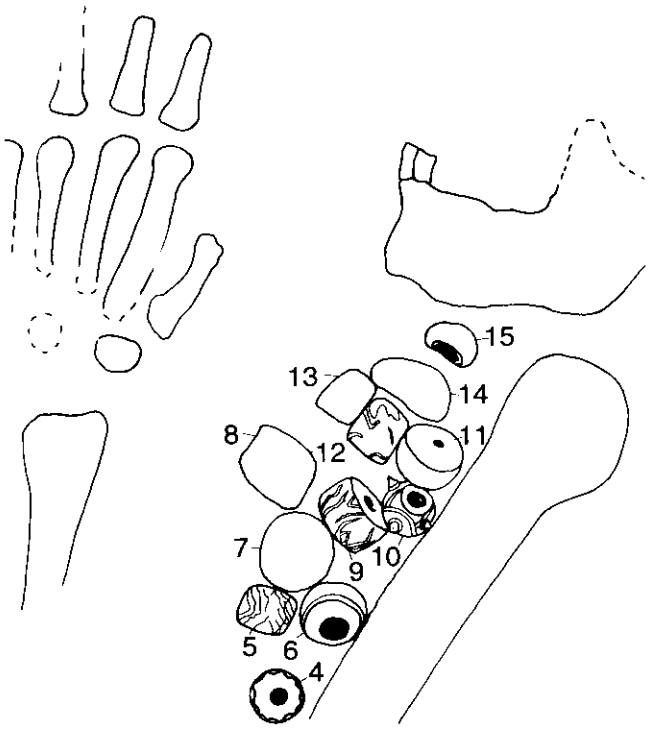


Figure 3.10 Grave 14, detail of necklace

Pot, *Δ2. Complete. Height 98mm.*
Comb, *Δ1 , antler (double-sided composite) with iron rivets. Length 130mm.*

Beads below chin (Fig 3.10). Knife under R elbow, above the waist. Comb and pot to L side slightly above the waist. Plan Fig 3.70.

Grave 14 (Feature 29, Sk29)

Depth below surface to top of grave: 0.26m; grave depth cut into chalk: 0.08m; shape/type of grave: oval scoop; orientation: 227°.

Well preserved burial of an adult female, carefully laid on her side in a semi-flexed position with a necklace of coloured glass beads still lying as threaded. The skeletal remains and grave goods show that there has been very little disturbance, but the skull (which had been pillowed-up on the side of the grave) and a pottery vessel had been severely damaged by agricultural activity.

Feature F29

Sk29 – Female, age 35–45. Evidence of arthritis, congenital/developmental pathology, and disease. 80% complete. Semi-flexed.

- **Beads**, *Δ4–15, 7 polychrome glass, 5 amber (total weight c 15gr), amber not illustrated.*
  Knife, *Δ3, iron (Type A; size-group 1), with traces of horn handle and possible leather sheath. Length 96mm.*

Grave 15 (Feature 31, Sk31) (see also Graves 19 and 20)

Depth below surface to top of grave: 0.32m; shape/type of graves: intercutting sub-rectangular; orientation: 236°.

The most complex stratigraphic group is that of graves 15, 19, and 20, all of which had shallow graves scooped out of the chalk (Fig 3.13). In this group it is apparent that the first burial was that of Sk44B (grave 19), with Sk44A contemporary but placed with its left arm just overlapping the right shoulder of Sk44B. This double burial was then backfilled, to be disturbed at a later date by the grave-cuts of graves 15 and 20. The cutting of grave 15 led to the removal of the right humerus of Sk44A (and probably the skull, right clavicle, and ribs), whilst the digging of grave 20 led to the removal or disturbance of the leg and feet bones of both skeletons in grave 19, with the exception of the right femur of Sk44A. Ploughing has crushed and removed parts of the skulls from both grave 15 and grave 20.

There is no direct relationship between graves 15 and 20 but their similarity in orientation and

Figure 3.11 Grave 16, prone burial

skeletal position within the graves could suggest contemporaneity. The relationship between these later burials and the earlier ones would either suggest that grave 19 was no longer apparent when graves 15 and 20 were cut or that graves 15 and 20 were deliberately positioned as close as possible to the known location of grave 19, which might have been marked in some way, perhaps by a mound or a post. If the latter interpretation is believed, then the disturbance caused by the later burials may have been an unfortunate consequence of knowing the location (of say, a family plot) but no longer being aware of the exact orientation of the original burials (see also grave 66).

Feature F31

Sk31 – Unsexed, age 12. Evidence of arthritis. 75% complete. Supine.

- **Beads**, *Δ1–13, 4 glass (3 polychrome, 1 monochrome), 9 amber (missing), 1 shell, 1 bone. Not all illustrated.*

Beads over L arm and below jaw, Δ11 found during sieving, no record of where Δ13 found. Plan Fig 3.71.

Grave 16 (Feature 33, Sk33)

Depth below surface to top of grave: 0.28m; grave depth cut into chalk: 0.10m; shape/type of grave: sub-rectangular scoop; Anglo-Saxon disturbance: grave-robbed?; orientation: 292°.

This feature was a grave containing the prone burial of an adult male. The lower part of the skeleton had been badly damaged, and no grave goods were found. Although ploughing appears to have been responsible for removing the upper (right) side of the skull, the virtually complete disappearance of the skeleton from the ribs downwards argues for other causes. No ploughmarks cutting into the side of the grave were seen and this grave must therefore have been partly dug over and robbed, probably during the 19th century, but possibly at a much earlier date.

The position of the torso with left arm lying beneath the ribs shows that the body had been laid prone in the grave (Fig 3.11). Some of the fingers of the left hand were found pointing upwards, in a clenched position, between the right scapula and humerus. This detail suggests strongly that there was no post-mortem movement. The broken part of the left humerus was found in the area of the lower body together with part of a fibula and some vertebrae fragments: this may be the consequence of later robbing. Evidence for removal of the right arm without disturbance to the rest of the upper body and old cracks in the skull suggest there might have been deliberate interference with the grave during Anglo-Saxon times. Movements of articulated parts have been noted for burials Sk103 (grave 31) and Sk149 (grave 49), and for the unnatural position of the skeleton Sk119 (grave 35), but the evidence from this burial suggests that disturbance was long after decomposition had occurred.

Feature F33

Sk33 – Male, age 25–35. Evidence of arthritis and dental disease. 30% complete. Prone.

Plan Fig 3.70. No finds associated with this burial. (Fig 3.11)

Grave 17 (Feature 41, Sk41) (see also Grave 18)

Depth below surface to top of grave: 0.25m; grave depth: in subsoil only; shape/type of grave: grave-robbed?; orientation: 144°.

Above grave 18 was a very disturbed area of bones identified as grave 17. Some of this disturbance is clearly attributable to deep ploughing or pan-busting, but it may also be attributable to 19th century activity. There are two distinct fills composing the matrix around these bones, which appear to have become very mixed, but the osteological data show them to be from two separate individuals.

Feature F41

Sk41 – Unsexed, adult, possibly 45+. Evidence of arthritis. 10% complete. Apparently disturbed.

- **Knife**, *Δ1, iron (Type A; size-group 1), with mineral-preserved horn handle and leather sheath. Length 106mm.*
  Nails, **5**, *Δ2–4, Δ6, iron, Δ3 and Δ4 with decorated heads. Possible decayed antler noted on Δ2 and Δ4 but this could be iron pan. Lengths Δ2 31mm, Δ3 is two nails joined by corrosion 12mm*

and 14mm long, Δ4 17mm, Δ6 42mm. Drawn from x-radiograph.
Iron fragments, *Δ5, unidentified, including one large piece of plate. Maximum dimension 31mm.*

No record of where nails found. Plan Fig 3.70.

Grave 18 (Feature 42, Sk42A.1, Sk42A.2, Sk42B) (see also Grave 17)

Depth below surface to top of grave: 0.35m to top of F18A; grave depth cut into chalk: 0.45m to base of F18B; shape/type of grave: F18B: sub-rectangular; bed-burial; orientation: 154°.

Overlying filled-in grave 18B (feature F42B) the bones of a child and an adult were found (Sk42A.1 and Sk42A.2 respectively) at 0.1m below the level of the chalk natural. The earliest burial is that of a woman (Sk42B) laid on a bed lowered into a specially shaped deep grave. The grave was cut 0.45m into the chalk, was vertical-sided, and had apsidal ends. The burial was virtually intact and had suffered little post-burial disturbance (Fig 3.12).

Feature F42

Sk42A.1 – child, age 3. 2% complete. Sk42A.2 – unsexed adult, age 18–25, with possible signs of disease. 2% complete. Not illustrated.

- **Coin pendant**, *Δ1, copper-alloy. Recorded in site notebook as 'With skull fragments 42AΔ2??'. Diameter 13mm.*
  Knife, *Δ5, iron, (Type A, size-group 1) with mineral-preserved horn handle and remains of leather sheath. Length 127mm.*
  Iron object, *Δ2, unidentified.*

Sk42B – Female, age 17–25. Height 1.70m. Evidence of disease, possibly leprosy. 85% complete. Supine.

- **Bead**, *Δ29, 1 glass (lost).*
  Rings, 2, *Δ19, silver, in fragments. These look like necklace rings, but no slip-knot is present. Diameter 22mm.*
  Key, *Δ20, iron, with mineral-preserved textile. Length 155mm.*
  Knives, 2, *Δ22.7 and Δ25, iron (both Type C, size-group 1). Δ22.7 with mineral-preserved horn handle and textile on both sides of blade. Lengths Δ22.7 120mm, Δ25 75mm.*
  Bucket hoops and handle, *Δ1, iron, from oak wood (Quercus sp.) bucket. Handle with mineral-preserved textile. Basal diameter of vessel approximately 270mm. Also two associated copper-alloy mounts with mineral-preserved maple (Acer sp.) from a small wooden vessel inside the bucket.*

Figure 3.12 Grave 18B, bed-burial with soil block containing bucket beside left foot, and soil block for possible box including comb over left femur

Weaving batten, *Δ21, Δ36, iron. Cut down sword Δ21, with modified tip 36 (see 6.3.9 and 6.6). Total length 765mm. Hilt made from three pieces of horn and possible remains of a leather sheath along the blade.*
Iron bracket and angled rod, *Δ22.1 and Δ22.10, probably the remains of an iron-bound wooden box. Mineral-preserved ash wood (Fraxinus sp.) on the bracket Δ22.1. Length Δ22.1 62mm. Δ22.10 102mm.*
Comb, *Δ22, antler (single-sided composite) with iron rivets. Length 142mm.*
Spindle whorl, *Δ22.4, antler. Diameter 41mm.*
Copper-alloy sheet, *Δ22.6, folded. Could be from mount or pendant. Maximum dimension 20mm.*
Fossil sea urchin, *Δ23, Diameter 30mm. Not illustrated.*
Sheep astragalus, *Δ22.5. Not illustrated.*
Glass, *Δ34, fragment. Maximum dimension 21mm. Not illustrated.*
Rod, *Δ27, iron: possibly a nail, with remains of threads. Length 11mm*

Figure 3.13 Graves 15, 19, and 20

Iron fragments, *Δ22.2, Δ22.9, Δ22.12–18, Δ22.20, Δ22.22 and Δ22.25, Δ26, Δ28, Δ32 and Δ33, unidentifiable. Δ22.9 and Δ22.20 are sets of superimposed iron plate fragments joined by a fragment of curved iron rod. Δ22.13–16 and Δ22.25 are fragments of a curved iron rod. Δ28 drawn from x-radiograph.*
Funerary bed, *represented by Δ2–9, Δ18, Δ30–31, 11 eyelets, iron, all with mineral-preserved textile remains: 2 with mineral-preserved remains of ash wood board and another unidentified organic material, possibly leather; Δ10–15, 6 cleats, iron, all with mineral-preserved wood and possible traces of leather or textile: 2 with identifiable textile remains; Δ16–17, 2 headboard stays, twisted iron, mineral-preserved textile and wood. See below 6.9.*

Weaving batten and key to L side of body. Knife Δ25 to left of L breast. Comb, box fragments, iron fragments, and Δ22.1–25 (possible box contents) on upper L leg. Bucket at L foot (Fig 3.12). Plan Fig 3.71.

Grave 19 (Feature 44, Sk44A, Sk44B) (see also Graves 15 and 20)

Depth below surface to top of grave: 0.32m; shape/type of grave: intercutting sub-rectangular; orientation: 192°.

In this group of graves it is apparent that the first burial was Sk44B (grave 19), with Sk44A contemporary but placed with its left arm just overlapping the right shoulder of Sk44B (Fig 3.13). This double burial was then backfilled, to be disturbed at a later date by graves 15 and 20 (see discussion of grave 15). This disturbance may have led to the redistribution of some artefacts (mostly beads) between Sk44A, Sk44B, and Sk45.

Feature F44

Sk44A – Female, age 18. Height 1.69m. Evidence of arthritis and congenital/developmental pathology. 45% complete. Supine.

- **Small long brooch**, *Δ30, copper-alloy (cross-headed type), with mineral-preserved threads. Length 80.5mm.*
  Beads, *Δ3, Δ5–7, Δ10–11, Δ15, Δ17–19, Δ23–4, Δ32–4, 1 glass, 14 amber (total weight c 5gr), 1 calcite. Amber beads not illustrated.*
  Buckle, *Δ31, iron loop (oval) and copper-alloy plate. Width of buckle plate 15mm.*
  Finger ring, *Δ20, silver. Diameter 16.5mm.*
  Wrist-clasps, **2 pairs**, *Δ9, Δ13, Δ21, Δ22, copper-alloy (pair of Form B 7 plus single catch-piece of Form B 13c). Lengths Δ9 31.5mm, Δ13 23mm, Δ21 27.5mm, Δ22 35mm, Δ22 now missing.*

Δ13 broken but bent over to act as catch.
Copper-alloy sheet, *Δ8, unidentified. Rolled up as if for scrap. Maximum dimension 11mm.*

Wrist-clasps by wrists, ring on middle finger R hand. Buckle at waist, to R. One bead by R breast, other beads over body.

Sk44B – Female, age 35. 60% complete. Supine.

- **Openwork disc brooches**, **pair**, *Δ48.1, Δ49, copper-alloy with iron pins and mineral-preserved textile. Diameters Δ48.1 46.1mm, Δ49 45mm.*
  Beads, *Δ1, Δ12, Δ14, Δ16.1–16, Δ17, Δ25–29, Δ31–5, Δ37–9, 40.1–6, Δ42.1–4, Δ43, Δ48.2–3, Δ53, Δ62–76, Δ77.1–2, Δ78, Δ80.6–9, Δ83.1–2, Δ84, Δ84.1–2, Δ85, Δ90, 22 glass including 'gold-in-glass' type, 52 amber (total weight c 17gr), 1 cristobalite. Not all illustrated.*
  Bead tubes, **3**, *Δ50, Δ51, Δ52, copper alloy. Lengths Δ50 14mm, Δ51 16mm, Δ52 15mm.*
  Bucket-pendant fragments, *Δ36, copper-alloy.*
  Buckles, **2**, *Δ80.2 and Δ80.4, iron loop and tongue (unclassifiable), one with copper-alloy plate and one with iron plate. With mineral-preserved textile and leather. Widths Δ80.4 13mm, Δ80.2 11mm.*
  Strap-ends, **4**, *Δ2, Δ45, Δ58, Δ59, copper-alloy, Δ45 with iron rivet. Lengths Δ2 29mm, Δ45 41mm, Δ58 32mm, Δ59 32mm.*
  Wrist-clasps, 1 pair, 2 singletons and two fragments, *Δ44, Δ46, Δ47, Δ60, Δ80.1, Δ87, Copper-alloy (Form B 13a), clasp-halves, both hook-pieces, (Form B 7 and B 13c) Lengths Δ44 34mm, Δ46 37.5mm, Δ47 11.5mm, Δ60 35mm, Δ87 14.5mm.*
  Rings, 2, *Δ54, Δ82, copper-alloy. Diameters Δ54 27.5mm, Δ82 24mm.*
  Rings, **6**, *Δ55, Δ56, Δ57, Δ81, Δ83, Δ88, iron, one Δ57 with S-shaped fitting. Diameters Δ55 58mm, Δ56 64mm, Δ57 58mm, Δ81 67mm, Δ83 50mm, Δ88 47mm.*
  Iron rod fragment, *Δ86, unidentified, with mineral-replaced textile. Identification as pin or buckle tongue suggested. Length 22mm.*
  Copper-alloy sheet fragments, *Δ61, Δ80.3, Δ89, unidentified. Maximum dimension Δ89 15mm. Δ61 possible strap-end fragment with rivet. Δ89 is hooked strip fragment.*
  Stud, *Δ79, copper-alloy, with silver front plate and two perforations, as if for suspension. Diameter 14mm.*

Disc brooches on shoulders (Fig 3.14). Beads looped below them. Wrist-clasps by wrists, and waist (Δ47 pair beneath left wrist, Δ44, Δ46, Δ80.1, and Δ87 under right wrist, Δ60 by pelvis). Buckles on chest. Iron and copper-alloy rings hanging down from waist (see 6.10). Plan Fig 3.71.

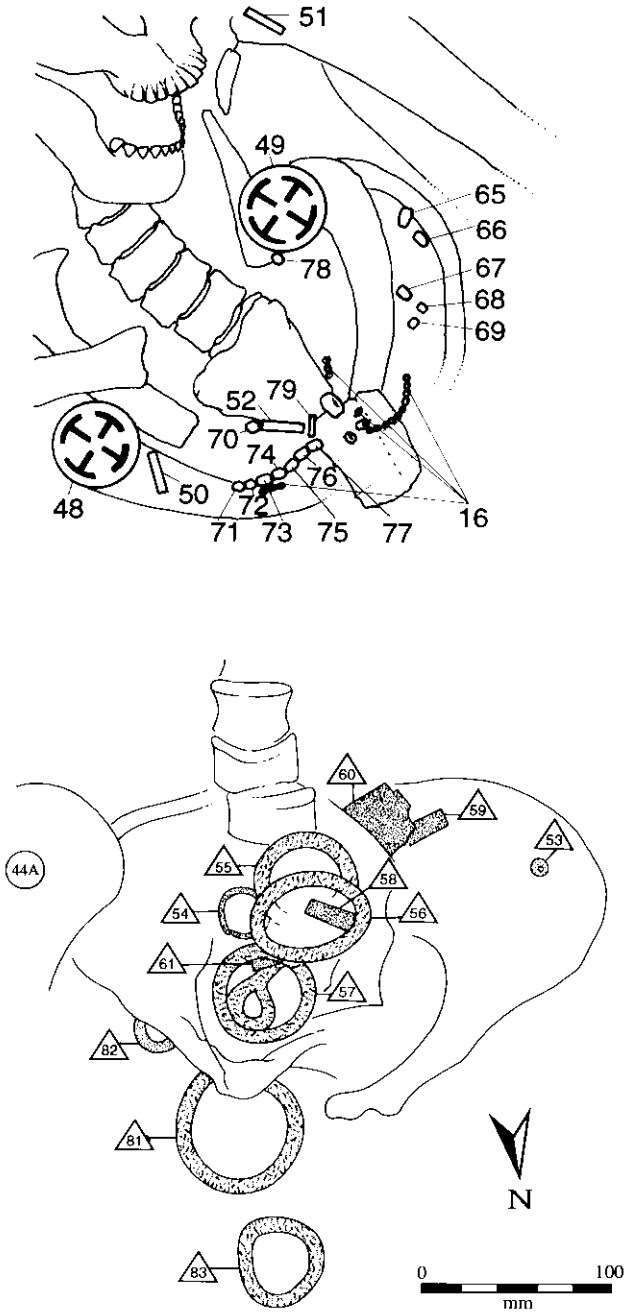


Figure 3.14 Grave 19B, details of chest and pelvic areas

Grave 20 (Feature 45, Sk45) (see also Graves 15 and 19)

Depth below surface to top of grave: 0.32m; shape/type of grave: intercutting sub-rectangular; orientation: 220°.

See discussion of grave 15.

Feature F45

Sk45 – Female, age 19. Height 1.56m. Evidence of arthritis, congenital/developmental and dietary pa-

thology, and special pathological features. 70% complete. Supine.

- **Penannular brooch**, *Δ12, (Type C), copper-alloy. Width 29mm.*
  Beads, *Δ4–5, Δ7–11, Δ14.1–5, 12 amber (total weight c 3gr). Not illustrated.*
  Chatelaine fragments, *Δ2, iron with mineral-replaced textile. Maximum dimension 46mm. Not illustrated.*
  Ring, *Δ3, copper-alloy. Diameter 53mm.*
  Tweezers, *Δ1, copper-alloy, one side only, on iron suspension ring. Length 62mm.*
  Nail, *Δ13, iron. Length 14mm.*
  Iron object *Δ14, unidentified. Not illustrated.*

Penannular brooch on pelvis; 5 beads beside it and remainder to R of pelvis. Tweezers and chatelaine fragments between legs, except for one chatelaine link beside penannular brooch with nail and iron fragment (see 6.10). Plan Fig 3.71.

Grave 21 (Feature 46, Sk46)

Depth below surface to top of grave: 0.23m; grave depth: subsoil only; shape/type of grave: uncertain; orientation: 202°.

This feature was a burial found to a depth of 0.14m in the subsoil. No grave-cut was discerned and the skeleton had been badly damaged by ploughing, although most elements of the skeleton were still present.

Feature F46

Sk46 – Unsexed, adult. 50% complete. Extended and supine.

- **Knife**, *Δ1, iron (Type A; size-group 2), with possible traces of horn handle and leather sheath. Length 160mm. No record of where found. Plan Fig 3.71.*

Grave 22 (Feature 47, Sk47)

Depth below surface to top of grave: 0.23m; grave depth: subsoil only; shape/type of grave: uncertain; orientation: 140°.

This feature was a burial found to a depth of 0.14m in the subsoil. No grave-cut was evident and the skeleton had been largely removed by ploughing. Parts of both arms survived, some ribs and vertebrae, and some skull fragments which were found close to the burial in grave 21.

Feature F47

Sk47 – Unsexed, adult. Evidence of arthritis. 10% complete. Extended and supine.

No associated artefacts. Plan Fig 3.71.

Grave 23 (Feature 48, Sk48) (see also Graves 25 and 26)

Depth below surface to top of grave: 0.34m; shape/type of grave: uncertain spread; charnel-pit?; grave-robbing?; orientation: 190°.

Broken human bone (the remains of several individuals) was evident at three points (F48, F50, and F51) in a spread of archaeological material. These deposits may constitute one and the same feature, namely a large pit dug into the top of several Iron Age ditches. Whether the disturbance caused to the bones was the result of modern ploughing, 19th century excavation or original burial practice (in the form of a charnel pit) is impossible to determine. The broken and scattered nature of the deposit strongly suggests that this is a result of the digging-up and backfilling of a grave (or graves). Each of these features seems to have been cut into the fills of Iron Age ditches F404, F373, and F409 respectively. Feature F48 has the best claim to having been a discrete burial. Only part of F50 was available for excavation, and F51 was found spread over a relatively large area. No true grave edges could be defined.

Feature F48

Sk48 – Osteologically identified as male, age 25–35, but grave goods imply female. Evidence of arthritis, congenital/developmental and dietary pathology. 10% complete.

- **Bead**, *Δ1, jet-like material.*
  Buckle, *Δ3, copper-alloy loop (D-shaped) with iron tongue and mineral-preserved textile. Width 18mm.*
  Spindle whorl, *Δ2, ceramic. Diameter 38mm.*
  Iron fragments, **2**, *Δ5–6 unidentified.*

No record of where buckle found. Plan Fig 3.71.

Grave 24 (Feature 49, Sk49)

Depth below surface to top of grave: 0.29m; grave depth: in fill of Iron Age ditch; shape/type of grave: uncertain; grave-robbed?; orientation: 195°.

This feature was the burial of an adult (male?) dug into the fill of an Iron Age ditch (F30, or a continuation of F368). Parts of the leg bones were recovered hastily during the final days of recording in the 1989 season; the rest of the skeleton lay beyond the edge of the trench. The bones appeared somewhat broken and disturbed, and this could be the consequence of grave-robbing.

Feature F49

Sk49 – Possibly male, adult. 2% complete. Not illustrated.

No artefacts recorded in this context. Plan Fig 3.71.

Grave 25 (Feature 50, Sk50) (see also Graves 23 and 26)

Depth below surface to top of grave: 0.34m; shape/type of grave: uncertain spread; charnel-pit?; grave-robbing?; orientation: 198°.

See discussion of grave 23 above.

Feature F50

Sk50 – Unsexed, age 18–23. 5% complete.

No artefacts recorded in this context. Plan Fig 3.71.

Grave 26 (Feature 51, Sk51A, Sk51B) (see also Graves 23 and 25)

Depth below surface to top of grave: 0.34m; grave depth: uncertain; shape/type of grave: uncertain spread; charnel-pit?; grave-robbing?; orientation: uncertain.

The remains of two individuals were identified in this spread. See discussion of grave 23 above.

Feature F51

Sk51A – Unsexed, age 15. Evidence of possible disease. 60% complete. Sk51B – Male, age 45+. 10% complete. Both disturbed.

- **Iron fragments**, **2** *Δ1–2, unidentified. Δ1 probably the tip of a knife blade (not illustrated); Δ2 possibly a nail, length 23mm.*

Plan Fig 3.72.

Grave 27 (Feature 52, Sk52)

Depth below surface to top of grave: 0.42m; grave depth cut into chalk: 0.2m; shape/type of grave: sub-rectangular; grave-robbed; orientation: 197°.

A chalk-cut grave which contained the very disturbed bones of an adult male. The bones were concentrated at one end of the grave and did not include the skull. Articulated upper parts of the skeleton had been overlain by a jumbled mass of other bones, and artefactual finds were few and mostly of iron. It is clearly evident that this grave had been robbed and dug over, probably in the 19th century.

Feature F52

Sk52 – Male, aged 45+. Height 1.74m. Evidence of arthritis, congenital/developmental pathology, and dental disease. 30% complete.

- **Buckle,** *Δ1, copper-alloy (small oval). Width 11mm.*
  Knife, *Δ4, iron (Type A; size-group 2), with horn handle, leather sheath, and mineral-preserved textile. Length 156mm.*
  Iron sheet fragments, *Δ2–3, with mineral-preserved textile and possible mineral-preserved leather. Could be from a shield grip. Recorded with knife Δ4 in laboratory. Maximum dimension Δ3 22mm.*

Plan Fig 3.72.

Grave 28 (Feature 57, Sk57)

Depth below surface to top of grave: 0.25m; grave depth cut into chalk: 0.1m; shape/type of grave: uncertain; orientation: 187°.

Burial of an adult male with the skull missing and probable plough damage to the remaining bones. Found in 1987, not excavated or recorded as part of main project.

Feature F57

Sk57 – Male, age 35–45. Height 1.70m. Evidence of trauma. 40% complete. Supine.

- **Shield boss,** *Δ2, iron (Group 3). External diameter 160mm.*
  Shield studs, *UM 1988.227.1, 2, and 3, UM 1988.228.1 and 2. UM 1988.228.1 and 2, with applied silver foil.*
  Stud and plate, *UM 1988.230.*
  Spearhead, *Δ1, iron (Type H3). Length 555mm.*
  Knife, *Δ3, iron. Length 188mm.*
  Buckle loop, *UM 1988.231, iron, crescent shaped with applied silver foil.*
  Nail, *iron, UM 1988.229.*
  Iron object, *unidentified, UM 1988.232.*

Spearhead by L side of upper body, knife beneath spearhead; shield boss by L knee. Plan Fig 3.72.

Grave 29 (Feature 58, Sk58A, Sk58B)

Depth below surface to top of grave: 0.24m; grave

depth cut into chalk: uncertain; shape/type of grave: uncertain, orientation: 230°.

A double burial in a shallow scoop in the chalk (edge of grave not defined). The bodies were laid in the grave side by side, and the skeletons had suffered badly from plough damage at the head-end. There appeared to be no disturbance to either skeleton which could be attributed to the insertion of the other and therefore these burials were definitely contemporary. The burials were discovered in 1988 and therefore were not excavated or recorded as part of the main project.

Feature F58

Sk58A – Male, adult. Height 1.75m. 40% complete. Supine.

- **Knife**, *Δ2, iron (Type B or C), with mineral-preserved horn handle and possible leather sheath. Length 134mm.*
  Shield boss, *Δ3, (Group 1.1), external diameter 170mm with grip (Type A1?), iron, with mineral-preserved leather and wood, possibly alder (Alnus sp.) from the shield board, and leather, textile, hair and possible feathers on the grip.*
  Shield stud, *Δ1, iron with copper-alloy head (part of Δ3), mineral-preserved leather on both sides. Diameter 20mm.*

Shield boss on R forearm. Knife and shield stud by R elbow.

Sk58B – Unsexed, adult. 50% complete. Supine.

- **Applied saucer brooches**, **pair**, *Δ18–19, (zoomorphic type), gilt copper-alloy with inset blue glass. Diameters Δ18 68mm, Δ19 66mm.*
  Beads, *Δ1–14, 11 glass (9 monochrome, 2 polychrome), 3 amber. Not all illustrated.*
  Buckle, *Δ17, iron loop (apparently D-shaped) with tinned copper-alloy plate and iron rivet, with mineral-preserved textile and leather. Width 16mm.*
  Strap-end, *Δ15–16, copper-alloy, with iron rivet and textile impression on one side, with fragments of copper-alloy sheet from a possible second example. Length 37mm.*
  Flint axe, *Δ20, found in grave fill below Sk58B, between femurs.*

Brooches by shoulders. Beads mostly scattered around hips. Buckle at waist; strap-end by L breast. Plan Fig 3.72.

Grave 30 (Feature 100, Sk100)

Depth below surface to top of grave: 0.3m; grave depth: subsoil only; shape/type of grave: uncertain; orientation: 246° (aligned with Iron Age ditch F5).

This feature was assigned to a shallow burial that had no discernible grave-cut but had a skeleton that had been carefully laid in the subsoil. Ploughing had removed its right side, backbone and skull. It lay aligned with an Iron Age ditch (5).

Feature F100

Sk100 – Unsexed, age 17. Evidence of arthritis and congenital/developmental pathology. 65% complete. Supine.

- **Knife**, *Δ1, iron, length 108mm.*

L side of upper body. Plan Fig 3.72.

Grave 31 (Feature 103, Sk103)

Depth below surface to top of grave: 0.45m; grave depth cut into chalk: 0.1–0.14m; shape/type of grave: rectangular; coffin?; later interference (possibly Anglo-Saxon disturbance), robbed?; orientation: 158°.

This grave consisted of a regular rectangular cut in the chalk. The shape and regularity of the grave-cut could indicate that this burial was coffined.

A large shallow pit (F152) cut into the chalk and fill of F103, to a depth of 60mm, appears to have disturbed and removed all of the left side of the skeleton except for the lower leg. Articulated left foot found against spine. There is no artefactual indication of when this disturbance occurred. The disturbance may indicate Anglo-Saxon interference with the grave and deliberate post-mortem movement of pieces of the body, possibly robbing.

Feature F103

Sk103 – Male, age 45+. Height 1.66m. Evidence of arthritis and disease. 75% complete. Supine.

- **Iron fragments**, **2**, *Δ1–2. Δ2 two fragments possibly from a knife. Length Δ1 34mm. Not illustrated.*
  Shell fragment, *Δ4, mother-of-pearl. Maximum dimension 18mm. Not illustrated.*

Plan Fig 3.72.

Grave 32 (Feature 110, Sk110)

Depth below surface to top of grave: 0.25m; grave depth cut into chalk: 0.1m; shape/type of grave: sub-rectangular; orientation: 168°.

Feature F110 was a grave cut into the top fills of two Iron Age ditches (F6 and F7) and into the

intervening chalk. The skeleton appeared better preserved over the ditch fills, although the disappearance of the right lower arm might be attributed to its having sunk more deeply into the ditch which was not excavated. This might also explain the missing left foot, but definite damage from external sources seems to have occurred to the lower right leg. Two fills were noted in this grave, and the upper fill might indicate some disturbance.

Feature F110

Sk110 – Male, age 45+. Height 1.77m. Evidence of arthritis and dental disease. 60% complete. Supine.

- **Knife**, *Δ1, iron (Type A), with mineral-preserved horn handle. Pupae cases on one side may derive from a leather sheath. Length 130mm.*

At waist, to L side. Plan Fig 3.73.

Grave 33 (Feature 112, Sk112)

Depth below surface to top of grave: 0.29m; grave depth cut into chalk: 0.25m; shape/type of grave: sub-rectangular, deep cut, coffin?; marker post?; orientation: 147°.

Feature F112 was a well-made grave cut deeply into the chalk and an Iron Age pit (F154). Differential conditions of preservation within the grave had resulted in little of the vertebrae, ribs or scapula surviving. The regularity of the grave-cut, and its depth and spaciousness beyond that which was necessary to accommodate the skeleton, argues strongly for a coffin burial.

Posthole F170 was found adjacent to the south-west corner of the grave and may have acted as a marker post, but there was no dating evidence to assign it to either the Iron Age or Anglo-Saxon period. Without further postholes having been discovered it is unlikely that F170 is part of any other grave structure.

Feature F112

Sk112 – Male, age 18–25. Height 1.74m. Evidence of congenital/developmental, dietary, and other special pathology. 60% complete. Supine.

- **Buckle**, *Δ2.2, iron, with possible traces of leather belt. Drawn from x-radiograph. Width 21mm.*
  Shield boss, *Δ2, Δ2.1, Δ2.3–4, (Group 3), external diameter 175mm, and grip (Type A1), iron, both with mineral-preserved wood and leather. Shield board probably lime (Tilia sp.) and shield grip willow (Salix sp.) or poplar (Populus sp.).*
  Shield rivets, *Δ2.5, iron, with mineral-preserved wood and leather. Diameter 20mm. Not illustrated.*
  Shield braces, **2**, *Δ3.1–2, iron with mineral-preserved textile. Lengths Δ3.1 81mm, Δ3.2 108mm.*
  Spearhead, *Δ1, iron (Type H2), with mineral-preserved ash wood (Fraxinus sp.) in socket. Length 334mm.*
  Knife, *Δ4, iron (Type B(?)/size-group 1). Mineral-preserved textile and possible horn handle. Length 124mm.*

Spearhead by L side of head and shoulder. Shield over lower abdomen with buckle beneath. Knife at waist, to L side. Plan Fig 3.73.

Grave 34 (Feature 117, Sk117)

Depth below surface to top of grave: 0.2m, grave depth cut into chalk: 0.05m; shape/type of grave: sub-rectangular, coffin?; orientation: 218°.

The skull and upper left side of the skeleton in this grave had been dislodged by pan-busting, and the skull was found along the furrow to the south-west of the burial. The regularity of the grave-cut could suggest a coffin burial, but the shallowness of the grave into the chalk argues against this, and there is no other evidence to support the suggestion.

Feature F117

Sk117 – Male, age 18–25. Height 1.66m. Evidence of congenital/developmental pathology. 80% complete. Supine.

- **Buckle**, *Δ9, iron (oval loop). Width 20mm.*
  Knife, *Δ2, iron (Type A; size-group 1) with mineral-preserved textile. Traces of horn handle and possible pelt sheath. Length 131mm.*
  Shield boss, *Δ1, iron (Group 3; possibly transitional Group 3/6), with mineral-preserved alder wood (Alnus sp.) and leather. Diameter 158mm.*
  Shield grip fragments, *Δ10, Δ11, iron, with mineral-preserved wood and textile. Length Δ11 42mm.*
  Shield studs, **4**, *Δ3–6, iron, with mineral-preserved leather and wood. Diameters Δ3 29mm, Δ4 28mm, Δ5 22mm, Δ6 30mm.*
  Nails, **2**, *Δ7–8, iron. Length Δ7 15mm, Δ8 24mm.*

Shield boss on pelvis, to L. Knife at waist, also to L. Buckle at waist on R side. Nails beside shield studs Δ5 and Δ6 on L femur. Plan Fig 3.73.

Grave 35 (Feature 119, SK119) (see also Graves 46 and 48

Depth below surface to top of grave: 0.15m; grave depth: ? cut into ditch fill; shape/type of grave and orientation: not discernible; Anglo-Saxon disturbance.

This feature was cut into the top of the fill of an Iron Age ditch (F113), close to but not cutting graves 46 and 48 (Fig 3.16). Grave 35 may have slightly overlapped the top of grave 48, and would appear to have been deliberately placed into the small gap between the other two burials. This necessitated bending the articulated limbs and spine into positions that would have been impossible for an intact corpse. There was no discernible grave-cut and the bones apparently lay on top of the in-filled ditch (F113).

The above evidence would suggest that grave 35 was later than graves 46 and 48. It also suggests that when the burial in grave 35 occurred the grave diggers must have known the exact positions of the other two graves which were left undisturbed.

Feature F119

Sk119 – Female, age 19–35. Height 1.67m. Evidence of disease. 80% complete. Grossly contorted.

No artefacts in this context. Plan Fig 3.73.

Grave 36 (Feature 125, Sk125)

Depth below surface to top of grave: 0.23m; grave depth cut into chalk: 0.08m; shape/type of grave: sub-rectangular; minor 19th century disturbance; orientation: 169°.

Shallow grave containing an adult male. The skull had been badly damaged and the left upper arm removed by insertion of a drain in the 1840s. This might have disturbed an iron disc (part of a shield?) which was found just south of the head, although this might also have been its original resting place. Indeed, if a shield boss had been placed in the grave it could have laid over the left arm and been removed in the 19th century.

Feature F125

Sk125 – Male, age 18–23. Height 1.72m. Evidence of arthritis, dental disease, and dietary pathology. 80% complete. Supine and flexed.

- **Buckle**, *Δ4, iron loop (D-shaped) and copper-alloy plate with possibly silvered copper-alloy rivet, with traces of leather belt and mineral-preserved textile. Width 14mm.*
  Buckle, *Δ7, iron loop (oval) and plate with silvered iron rivet; traces of leather belt and mineral-preserved textile on reverse of plate and loop. Width 19mm.*
  Knife, *Δ6, iron (Type A, size-group 1), with possible horn handle and traces of leather sheath. Length 119mm.*
  Disc, *Δ2, probably from apex of shield boss, iron, with leather and alder wood (Alnus sp.) and associated rivet fragments. Diameter 107mm.*
  Shield grip, *Δ3, iron, fragmentary. Length 101mm.*
  Spearhead, *Δ1, iron (Type H3), with mineral-preserved wood in socket. Length 486mm.*
  Plate, *Δ5, iron. Not illustrated.*
  Rivet, *Δ9, iron, probably from shield or buckle Δ4. Diameter 27mm.*
  Iron fragment, *Δ8, unidentified. Maximum dimension 8mm. Not illustrated.*

Spearhead at head of grave, to R of head. Shield fittings immediately above head. Knife by waist, to R side, blade towards head. Buckle Δ7 at waist, to L side, buckle Δ4 by shield fittings. Plan Fig 3.73.

Grave 37 (Feature 126, Sk126) (see also Grave 51)

Depth below surface to top of grave: 0.23m; grave depth cut into chalk: 0.12m; shape/type of grave: sub-rectangular; coffin; orientation: 265°.

The edges of two graves (F126 and F151) were very clear where they were cut into chalk, but at their interface they overlay an Iron Age ditch (F114) and it was very difficult to trace the full extent of the graves in the ditch fill. From field observation F126 (grave 37) was recorded as cutting F151 (grave 51), but the logic of this stratigraphic relationship would seem to be reversed when all records are considered. Both features are well-formed graves with well-preserved burials. Grave 37 appears to be the earlier and deeper, extending as a wide, sub-rectangular scoop in the chalk. The skeleton (Sk126) was largely intact and the vertical position of the skull shows that it must have slumped down into the grave during decomposition, as can also be seen by the brooch which was found face down, obviously having fallen forward from its position on the right shoulder. Most of the feet bones are missing because they were slightly higher than the main part of the body and had rested on the edge of the grave. Such size and regularity in the grave-cut together with evidence for movement during decomposition suggests use of a coffin with the feet possibly resting against it. The regularity of the grave-cut has been interrupted near the head by grave 51.

It would seem likely that graves 37 and 51 were close in date as there is minimal disturbance to either of them which indicates a knowledge of the position of the earlier grave when the second one was dug.

Feature F126

Sk126 – Female, age 45+. Height 1.64m. Evidence of arthritis and dental disease. 75% complete. Supine.

- **Garnet disc brooch**, *Δ1, gilt copper-alloy with gilt silver beaded wire rim shell bead inlay plus*

inlaid red glass or garnet, and iron pin. Mineral-preserved threads on back. Diameter 47mm.
Knife, *Δ2, Δ4, iron (Type A), Δ4 is part of tang, with mineral-preserved horn handle. Length of Δ2 63mm.*
Iron objects, *Δ3, unidentified.*

Brooch by R side between waist and breast, fallen face down. Knife above R shoulder. Plan Fig 3.73.

Grave 38 (Feature 127, Sk127A, Sk127B)

Depth below surface to top of grave: 0.3m; shape/type of grave: sub-rectangular; orientation: 235°.

A shallow scoop in the chalk and fill of an Iron Age ditch (F114). The edges were unclear, but it seemed very wide for a grave. It contained the burial of a female, with the head pillowed up, which had been badly damaged at head and feet end by ploughing (with copper staining on the clavicles giving evidence for two copper-alloy brooches which may have been removed by metal-detectorists), and a few bones of a young child.

Features F127

Sk127A – Female, age 35–45. Evidence of arthritis, dental disease, and trauma. Supine; 40% complete.

Sk127B – Child, age 2–3; 1% complete.

- **Beads**, *Δ4–16, 18–23, 26–9, 31–2, 1 glass, 24 amber (total weight c 21gr). Amber beads not illustrated.*
  Pin fragments, *Δ2, Δ3, iron. Δ2 with mineral-preserved textile. Lengths Δ2 17mm (not illustrated), Δ3 13mm.*
  Rings, **2**, *Δ30, Δ33, iron. Diameters Δ30 24mm, Δ33 25mm.*
  Knife, *Δ1, iron (Type B), with mineral-preserved horn handle. Possibly leather, pupae cases and small fragment of textile on the blade. Length 107mm.*
  Nail/Rod, *Δ25, iron, with possible threads, possibly joins with Δ24. Length 49mm.*
  Rod, *Δ24, iron, with possible threads, bent into loop. Maximum dimension 11mm.*
  Iron object, *Δ17, unidentified. Maximum dimension 10mm.*

Beads over chest, with pin Δ25. Knife below pelvis, to L side. Pin between upper legs. One iron ring under each armpit (see 6.10). Plan Fig 3.74.

Grave 39 (Feature 128, Sk128)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.10m; shape/type of grave: oval; orientation: 226°.

Burial of an adolescent in a shallow scoop into the chalk and into the fill of Iron Age ditch F114. There was very poor preservation of bone other than the arms, upper legs, and parts of the skull. The lower legs were missing. An interesting assemblage of tinned and copper-alloy objects comprising a belt suite survived *in situ*, showing that the disturbance cannot be attributed to either grave-robbing or metal-detecting. An incomplete small long brooch was found beneath the jaw which suggests movement of this object after burial or deliberate placement as part of the burial rite.

Feature F128

Sk128 – Unsexed, age 16–17. Evidence of dental disease, dietary pathology, and infection. 20% complete. Supine.

- **Disc brooch**, *Δ4, copper-alloy with iron pin, with mineral-preserved threads on face. Worn with pin vertical. Diameter 37mm.*
  Annular brooch fragment, probable, *Δ10, copper-alloy, broken in antiquity, with mineral-preserved textile. Length 35mm.*
  Small long brooch, *Δ11 (square-head derivative type), copper-alloy with iron pin, and mineral-preserved textile. Length 47mm.*
  Buckle, *Δ1, tinned copper-alloy (shield-on-tongue type). Width 24mm.*
  Buckle, *Δ6, iron loop (oval) and copper-alloy plate, with mineral-preserved leather and textile. Width 20mm.*
  Plate, *Δ5, copper-alloy with two iron rivets; mineral-preserved leather and textile. Possible buckle plate. Length 30mm.*
  Stud, *Δ8, copper-alloy, probably from buckle. Diameter 19mm.*
  Shoe-shaped rivets, **2**, *Δ2–3, tinned copper-alloy. Lengths Δ2 16mm, Δ3 18mm.*
  Suspended iron object, *Δ7, Δ9, iron. Length of largest fragment 23mm.*

Disc brooch on R shoulder. Small long brooch beneath jaw. One buckle by R elbow; second buckle by R hip. Shoe-shaped studs to either side of lower body. Other objects around the waist and L femur (see 6.10). Plan Fig 3.74.

Grave 40 (Feature 130, Sk130)

Depth below surface to top of grave: 0.22m; grave depth cut into chalk: 0.08m; shape/type of grave: oval; orientation: 212° (aligned beside Iron Age ditch F111).

This feature was a grave scooped out of the chalk (Fig 3.15). The body had been carefully laid in a prone and semi-flexed position with the left arm under the chest and right leg crossing left at ankle. Large Iron Age sherds which may have been grave goods were found in the grave. The skull was badly broken but

Figure 3.15 Grave 40, prone burial

there was no indication of disturbance to the burial. The grave had been aligned with an Iron Age ditch (F111).

Feature F130

Sk130 – Unsexed, age 15–16. Evidence of cancer. 80% complete. Prone and semi-flexed.

- **Potsherds**, *probably deliberately deposited. Maximum dimension 90 × 127mm. Not illustrated.*

No other artefacts recorded in this context. Plan Fig 3.74.

Grave 41 (Feature 133, Sk133) (see also Grave 9)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.2m; shape/type of grave: sub-rectangular; orientation: 235°.

This feature was a well-cut grave for a child. The surviving skeleton was largely complete, except where an 1840s drain (F116) had been cut through the legs. The proximity of the foot end of this grave to the head end of the burials in grave 9 and the alignment of both graves suggests a similar date for graves 41 and 9.

Feature F133

Sk133 – Child, age 6–7. Evidence of dietary pathology. 85% complete. Supine.

No artefacts recorded in this context. Plan Fig 3.74.

Grave 42 (Feature 135, Sk135)

Depth below surface to top of grave: 0.19m; grave depth cut into chalk: 0.15m; shape/type of grave: uncertain (probably sub-rectangular); orientation: 172°.

The grave of an adult female which was cut partly into chalk and partly into the fill of an Iron Age pit (F195). The chalk-cut north end was clearly defined showing a rectangular shape to the grave although it was impossible to define the grave edge within the pit fill. The skull had been propped up, presumably against the edge of the grave. The skeleton was virtually complete and had not been disturbed.

Feature F135

Sk135 – Female, age 50. Height 1.64m. Evidence of arthritis, dental disease, congenital/developmental and special pathology. 90% complete. Supine.

- **Buckle**, *Δ3, iron (fragmentary: unclassifiable). Length of largest fragment 11mm.*
  Knife, *Δ1–2, Δ5, iron (Type A), in several fragments; with mineral-preserved threads, traces of leather sheath on blade tip and horn handle. Length of largest fragment 38mm.*
  Rod, *Δ4, iron, rectangular rod, possibly latch lifter fragment, with mineral-preserved textile. Length 32mm.*
  Iron object, *Δ7, unidentified.*

Buckle and knife at waist; knife to R, buckle in middle. Rod by head. Plan Fig 3.74.

Grave 43 (Feature 136, Sk136A, Sk136B)

Depth below surface to top of grave: 0.26m; grave depth cut into chalk: 0.06m; shape/type of grave: uncertain; disturbance – grave-robbing?; orientation: 270°?

This feature contains a few bones from two separate burials and probably represents two distinct

graves which were shallow scoops in the chalk. The leg bones of Sk136A appeared still to be *in situ* but all the other bones were disturbed. Severe disturbance to these burials might be attributed to ploughing or 19th century activity.

Feature F136

Sk136A – Unsexed, adolescent/adult. 1% complete (orientation 204°).

Sk136B – Child, age 5. 15% complete.

No artefacts recorded in this context. Plan Fig 3.74.

Grave 44 (Feature 137, Sk137)

Depth below surface to top of grave: 0.24m; grave depth cut into chalk: 0.16m; shape/type of grave: rectangular; coffin? shroud burial?; orientation: 83°.

This feature was an extremely regular grave cut into chalk and across Iron Age ditch F30. It contained the well-preserved skeleton of an adult male, laid in the grave facing west. The skull had fallen forwards and sideways suggesting movement after decomposition, and the toes had fallen back. The evidence for displacement of bones suggests a cavity such as would be found inside a coffin, and this inference is supported by the regularity and depth of the grave-cut.

Feature F137

Sk137 – Male, age 35. Height 1.72m. Evidence of arthritis, congenital/development pathology, dental disease, trauma, and possible infection. 70% complete. Supine.

- **Knife**, *Δ1, iron (Type A; size-group 1), with mineral-preserved horn handle and possible traces of leather on the blade. Length 103mm.*

At waist, R side. Plan Fig 3.74.

Grave 45 (Feature 139, Sk139)

Depth below surface to top of grave: 0.18m; grave depth cut into chalk: 0.15m; shape/type of grave: rectangular; grave-robbed; orientation: 198°.

This feature was a well-cut grave that was found to contain just one femur and a knife. The regularity of the upper part of the south and south-eastern side of the grave had been disrupted by an irregular widening. It appears that this grave was ransacked, probably in the 19th century, and that nearly all of the skeleton and the associated grave goods had been removed.

Feature F139

Sk139 – Unsexed, child-adolescent. 1% complete.

- **Knife**, *Δ1, iron (Type A), with possible traces of mineral-preserved horn handle. Length 85mm.*

Apparently at head end of grave to R of head, but probably displaced. Plan Fig 3.75.

Grave 46 (Feature 146, Sk146) (see also Graves 35 and 48)

Depth below surface to top of grave: 0.2m; grave depth cut into chalk: 0.41m; shape/type of grave: sub-rectangular; coffin?; orientation: 140°.

Graves 35, 46, and 48 were cut into the top of the fill of an Iron Age ditch (F113), but did not cut each other (Fig 3.16). Grave 46 was a rectangular grave, cut into chalk and through the fill of ditch F113. The shape, depth, and regularity of grave 46 suggests that it may have accommodated a coffin.

Feature F146

Sk146 – Male, age 23–59. Height 1.84m. Evidence of arthritis and cancer. 80% complete. Supine.

- **Buckle**, *Δ2, iron (oval loop), with mineral-preserved leather. Width 19mm.*
  Knife, *Δ3, iron (Type B or C; size-group 1), with mineral-preserved horn handle and possible leather sheath. Length 110mm.*
  Shield boss, *Δ4, (Group 3) and grip, iron, with copper-alloy rivets on the grip. Inserted apex button. Mineral-preserved leather and alder (Alnus sp.) from the shield board; only leather on the grip. Diameter 160mm.*
  Shield boss rim fragments, 2, *Δ9, Δ10, iron. Not illustrated.*
  Shield rivet, *Δ5, iron; has a copper-alloy 'washer', and mineral-preserved leather and wood. Diameter 24mm.*
  Rivets, 5, *Δ7–8, Δ13–15, iron, found under shield boss. Δ8 not illustrated.*
  Spearhead, *Δ1, (Type I1), iron, with mineral-preserved wood, possibly ash (Fraxinus sp.) in socket. Length 175mm.*
  Copper-alloy object, *Δ6, unidentified. Small, crescentic; probably a rivet head. Width 8.5mm.*
  Glass fragment, *Δ11, Maximum dimension 39mm. Not illustrated.*
  Disc, *Δ12, ceramic. Maximum dimension 28mm.*

The glass fragment Δ11 and ceramic disc Δ12 may have come from the ditch fill (113) below grave 46.

Figure 3.16 Graves 46 and 48 with grave 35 containing a contorted burial

Spearhead at head of grave, to L of head. Shield boss and rivets on pelvis, slightly to R. Knife at waist, slightly to L, buckle on ribs. Ceramic disc found under shield boss. Plan Fig 3.75.

Grave 47 (Feature 147, Sk147A, Sk147B) (see also Grave 49)

Depth below surface to top of grave: 0.1–0.2m; shape/type of grave: spread; orientation: 245°.

Both graves 47 and 49 were cut into Iron Age ditch fills (F111 and F120) and the edges were difficult to define, but they contained two discrete burials.

Grave 47 consisted of bones from two individuals which were partly spread above the grave fill of grave 49, and had been cut into the fill of ditch F120 but not into chalk. It had been severely disturbed by ploughing or other activities, leaving only the left leg, pelvis, and vertebrae still roughly articulated. A total of ten large ceramic sherds were also found, mostly rims and bases which could have been ploughed out of F120 but the concentration of unusually large sherds suggest they were deliberately placed in the grave. The pottery from this grave represents a range of visually distinct vessels.

Feature F147

Sk147A – Unsexed, age 16–17, 30% complete. Spearhead amongst grave goods implies male.
Sk147B – Female, age 26–70, 5% complete.

- **Spearhead**, *Δ2, iron (Type H1). Length 200mm.*
  Rod, head of, *Δ4, iron, 'Shepherd's crook' type. Length 61mm.*
  Plate, *Δ3, copper-alloy, with mineral-preserved leather. Length 15mm.*
  Potsherds, *probably deliberately deposited. Maximum dimension 90 × 85mm. Not illustrated.*

Rod under R pelvis. Spearhead L side of chest. Iron Age and Roman potsherds scattered throughout grave, some fit with sherds from grave 49. Plan Fig 3.75.

Grave 48 (Feature 148, Sk148) (see also Graves 35 and 46)

Depth below surface to top of grave: 0.2m; grave depth cut into chalk: 0.2m; shape/type of grave: sub-rectangular; coffin?; orientation: 219°.

Grave 48 was an almost rectangular grave cut into the chalk and through the fill of ditch F113 (Fig 3.16).

Grave 35 above may have slightly overlapped the top of grave 48, but it would appear to have been deliberately placed into the small gap between graves 46 and 48. The shape, depth, and regularity of feature 148 suggests it might have accommodated a coffin.

Feature F148

Sk148 – Male, age 25–35. Height 1.76m. Evidence of congenital/developmental pathology and trauma. 95% complete. Supine.

- **Shield boss**, *Δ2, (Group 3), and grip (Type A1), iron, both with mineral-preserved alder (Alnus sp.) and leather. Diameter 160mm.*
  Spearhead, *Δ1, iron (Type C3), with mineral-preserved coppiced hazel (Corylus sp.) in socket. Length 319mm.*
  Buckle, *Δ4, iron (unclassifiable). Width 7mm.*
  Knife, *Δ3, iron (Type B(?)). Length 123mm.*

Spearhead at head of grave to R of head. Buckle and knife by waist, buckle in middle, knife to L. Shield boss on pelvis, to R side. Plan Fig 3.75.

Grave 49 (Feature 149, Sk149) (see also Grave 47)

Depth below surface to top of grave: 0.26m; grave depth: 0.1m into Iron Age ditch; shape/type of grave: rectangular; coffin?; disturbance: Anglo-Saxon or earlier; orientation: 265° (aligned within ditch).

Grave 49 was placed on the same alignment as and precisely within the limits of ditch F111, giving the appearance of a very regular rectangular grave-cut. The skeleton was well-preserved and articulated, but the left arm, left ribs, lower right arm, and some of the right foot were missing. The mandible was between the legs, but showed no signs of having been cut away from the skull so must have been moved after decomposition. There was clearly post-burial movement suggesting the burial was in a coffin. This would allow the displacement of artefacts and repositioning of parts of the body. A number of large stones was found near the skull which may have been part of the grave.

Grave 49 is probably Iron Age (or possibly Roman) as it appears to be positioned exactly within ditch F111 where it cuts across ditch F120 at right angles, and the artefacts found in association, including an iron fibula (a Colchester type brooch), are not definitely Anglo-Saxon.

Feature F149

Sk149 – Female, age 25–35. Height 1.61m. Evidence of arthritis and dental disease. 75% complete. Supine.

- **Brooch**, *Δ5, iron, Iron Age/Roman (Colchester type). Length 42mm.*
  Beads, *Δ2–3, 1 glass, 1 shell. Possibly 7th century in date (Birte Brugmann pers. comm.).*
  Nails, *Δ1.1 and Δ4, iron, with random organic material, possibly straw, on one side. Lengths Δ1.1 28mm, Δ4 36mm.*
  Potsherds, *Δ1.2, Iron Age rim sherd joins with two other rim sherds found in grave 47. Maximum dimension 85mm. Not illustrated.*

Brooch in between knees and nail L of L knee. One bead by mouth, the other by L side. Plan Fig 3.75.

Grave 50 (Feature 150, Sk150)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.12m; shape/type of grave: sub-rectangular; coffin?; orientation: 226°.

The skeleton in this feature appeared to have sunk a little as both head and feet were higher than the rest of the body and were resting on the ends of the grave. The grave had been dug partly into the chalk and partly across an Iron Age ditch (F120), and was ample in width but short for the length of the body that was buried in it. The skull and some of the cervical vertebrae had slipped forward on to the right shoulder, and some foot bones were missing but there was virtually no other damage to the burial. A bent spearhead was found in the topsoil close to the grave and it is extremely likely that this accompanied the burial, but had been hit by a ploughshare, bent and displaced into the plough zone very recently. Given the width of the grave and slumping of the skeleton, it is suggested that a cavity existed for some time and it is possible that the burial was coffined.

Feature F150

Sk150 – Male, age 45+. Height 1.73m. Evidence of arthritis and dental disease. 90% complete. Supine.

- **Knife**, *Δ1, iron (Type B; size-group 2), with mineral-preserved horn handle and leather sheath. Length 154mm.*
  Ring, *Δ2, iron. Diameter 28mm.*
  Buckle loop*(?), Δ3, iron, with mineral-preserved leather. Width 18mm.*
  Spearhead, *Δ1000/100, iron. Length 280mm.*

Buckle and knife at waist; buckle in middle, knife to L. Spear found near to but not in grave. Plan Fig 3.75.

Grave 51 (Feature 151, Sk151) (see also Grave 37)

Depth below surface to top of grave: 0.23m; grave depth cut into chalk: 0.12m; shape/type of grave: sub-rectangular; coffin?; (stakeholes); orientation: 211°.

Feature F151 was a rectangular cut into the chalk,

possibly cutting the head end of grave 37 (see above). Two possible stakeholes (F191 and F192) were discovered at the foot end of grave 51 which may have been contemporary with the grave and therefore could have acted as markers for it. At the head end, this grave cut an Iron Age ditch, F113.

Feature F151

Sk151 – Male, age 19–25. Height 1.74m. Evidence of arthritis and special pathological features. 80% complete. Supine.

- **Knife**, *Δ8, iron (Type A; size-group 1), with horn handle and fragments of leather sheath. Length 135mm.*
  Shield boss, *Δ1, (Group 3), iron, with mineral-preserved wood, probably lime (Tilia sp.), and leather from the shield board, plus plant stems. Boss rim pierced in antiquity. Diameter 165mm.*
  Shield grip, *Δ6.1–2, (Type A1), iron. Length 123mm.*
  Iron fragments, *Δ1.1–29, below shield boss. Not all illustrated.*
  Shield stud, *Δ2, copper-alloy. Diameter 18mm.*
  Spearhead, *Δ7, (Type C3?), iron. Length 204mm.*
  Rings, 2, *Δ3.1, Δ5, copper-alloy. Diameters Δ3.1 12mm, Δ5 12mm.*
  Rivet, *Δ4, iron. Length 18mm.*
  Iron fragment, *Δ3.2, unidentified. Maximum dimension 35mm.*

A separate piece of mineral-preserved ash wood (*Fraxinus* sp.) was found beneath the shield boss, possibly from the spear.

Shield boss over chin and R shoulder. Spearhead underneath this, just to R of face. Copper-alloy ring Δ5 immediately below L shoulder, Δ3.1 near spearhead. Knife at waist, to L, hilt down. Plan Fig 3.76.

Grave 52 (Feature 155, Sk155)

Depth below surface to top of grave: 0.35; grave depth: 0.05m into fill of Iron Age ditch F120; shape/type of grave: unknown; orientation: 190°.

This feature contained the bones of a lower leg and foot only. It was found in the top fill of an Iron Age ditch (F120) and, if still *in situ*, the orientation of the surviving leg would suggest that the burial had its head to the north. There was no indication why the rest of the skeleton had been removed, and no evidence of a grave-cut in the chalk beyond the edge of the Iron Age ditch.

Feature F155

Sk155 – Unsexed, adult. 3% complete.

No artefacts recorded in this context. Plan Fig 3.76.

Grave 53 (Feature 156, Sk156)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.15m; shape/type of grave: oval; orientation: 148° (aligned with Iron Age ditch F120).

Grave 53 contained the carefully laid-out body of an adult female which had been located along the eastern edge of an Iron Age ditch (F120). Although the chalk-cut eastern side of the grave was clear, the western side of the grave-cut was difficult to distinguish from the fill of the ditch. The skeleton was extremely well-preserved apart from the skull which had been shattered and was largely absent (possibly from pan-busting). Slippage of some of the artefacts was evident with one brooch reversed, but the amber beads found in association were grouped as though still strung together.

Feature F156

Sk156 – Female, age 25–29. Height 1.68m. Evidence of congenital/developmental and dietary pathology, and dental disease. 80% complete. Supine.

- **Small long brooches**, **pair**, *Δ3, Δ5, (trefoil type), copper-alloy, with mineral-preserved textile. Lengths Δ3 85mm, Δ5 85mm.*
  Beads, *Δ7–24, Δ26–33, 26 amber (total weight c 7gr). Not illustrated.*
  Buckle, *Δ2, copper-alloy loop (D-shaped) with iron tongue, with fragments of textile and possible traces of leather. Width 17mm.*
  Knife, *Δ1, iron (Type B; size-group 1), with possible traces of leather sheath and other mineral-preserved organic material on the tang. Length 112mm.*
  Pin or nail*(?), Δ6, iron, associated with fragments of iron-preserved bone or tissue. Length 52mm.*
  Potsherd, *Δ4, double-pierced lug. Not illustrated.*

Brooches by shoulders. Pin below brooch, possibly brooch pin? Beads on chest, slumped to R. Buckle at waist; knife on body, just below breast. Pierced lug probably residual rather than deliberate deposition. Plan Fig 3.76.

Grave 54 (Feature 161, Sk161)

Depth below surface to top of grave: 0.4m; grave depth cut into chalk: 0.25m; shape/type of grave: oval; deep cut; orientation: 157°.

The depth and shape of the grave-cut into chalk suggests deliberate planning for the laying out of the body, and perhaps reflects the status of the individual concerned – eg the investment in time and effort involved in digging a deep grave (for Barrington) and the carefully placed body (laid on her side in a

semi-flexed position with the head pillowed, approximately 0.1m high), as part of an elaborate burial ritual. Preservation of bone was extremely good and there was no sign of any disturbance. It is worth noting that the position on the slope, rather than the crest of Edix Hill, would have subjected it to less erosion.

Feature F161

Sk161 – Female, age 23–35. Height 1.57m. Evidence of arthritis, congenital/developmental pathology, and trauma. 90% complete. Flexed.

- **Buckle**, *Δ4, copper-alloy (small oval type). Width 10mm.*
  Knife, *Δ1, iron. Missing, not illustrated.*
  Latch lifter, *Δ2, iron. Length 215mm.*
  Ring, *Δ3, iron, possible suspension ring, with possible mineral-preserved leather. Diameter 43mm.*
  Nail, *Δ3, iron. Length 14mm.*

Buckle, knife, latch lifter and ring at waist, L side. Plan Fig 3.76.

Grave 55 (Feature 171, Sk171) (see also Grave 63)

Depth below surface to top of grave: 0.35m; grave depth cut into chalk: 0.17m; shape/type of grave: rectangular; coffin?; orientation: 233°.

Grave 55 was a narrow rectangular grave cut into chalk and the fills of an Iron Age ditch (F15). Apart from disturbance by an 1840s drainpipe through the pelvic and lumbar area of the skeleton the burial was well preserved. The head-end of the grave had been dug into the fills of an Iron Age ditch and no edge could be identified. The bones of the feet had fallen back on to the lower legs and the skull had slumped vertically in the grave on to the right shoulder, demonstrating movement in the grave after burial. The evidence for movement suggests that there might have been a cavity and the shape, depth, and regularity of the grave would argue for a coffin burial.

Although graves 55 and 63 were end to end it was not possible to determine any stratigraphic relationship between them. It is worth noting that they did not disturb one another and this suggests they could have been largely contemporary.

Feature F171

Sk171 – Female, age 21–25. Height 1.58m. Evidence of arthritis and disease. 75% complete. Supine.

No artefacts recorded in this context. Plan Fig 3.76.

Grave 56 (Feature 172, Sk172)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.10m; shape/type of grave: sub-rectangular; orientation: 135°.

This feature was a well-cut grave for the burial of a child. Bone survival was good except for the feet. The grave was much larger than the skeleton that had been buried in it, and sloped slightly down from head to feet. There was no sign of disturbance.

Feature F172

Sk172 – Child, age 8. Evidence of dietary pathology. 60% complete. Supine.

No artefacts recorded in this context. Plan Fig 3.76.

Grave 57 (Feature 175, Sk175)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.1m; shape/type of grave: oval; orientation: 220°.

This feature was a shallow grave that contained the well preserved skeleton of an infant. The grave was positioned beside an Iron Age ditch (F30) and possibly followed the same alignment.

Feature F175

Sk175 – Unsexed, perinatal. 75% complete. Possibly flexed.

No artefacts recorded in this context. Plan Fig 3.76.

Grave 58 (Feature 177, Sk177)

Depth below surface to top of grave: 0.3m; grave depth: in fill of Iron Age pit F143; shape/type of grave: unknown; orientation: 225°.

This feature contained the bones of part of a lower leg and foot, on the top of the fills of an Iron Age pit (F143). There was no grave-cut discernible and it is unclear whether or not this was originally a complete skeleton which has been damaged and largely removed, or if it was a separate limb, buried while still articulated.

Feature F177

Sk177 – Unsexed, adult. Evidence of arthritis and possible infection. 5% complete.

No artefacts recorded in this context. Plan Fig 3.76.

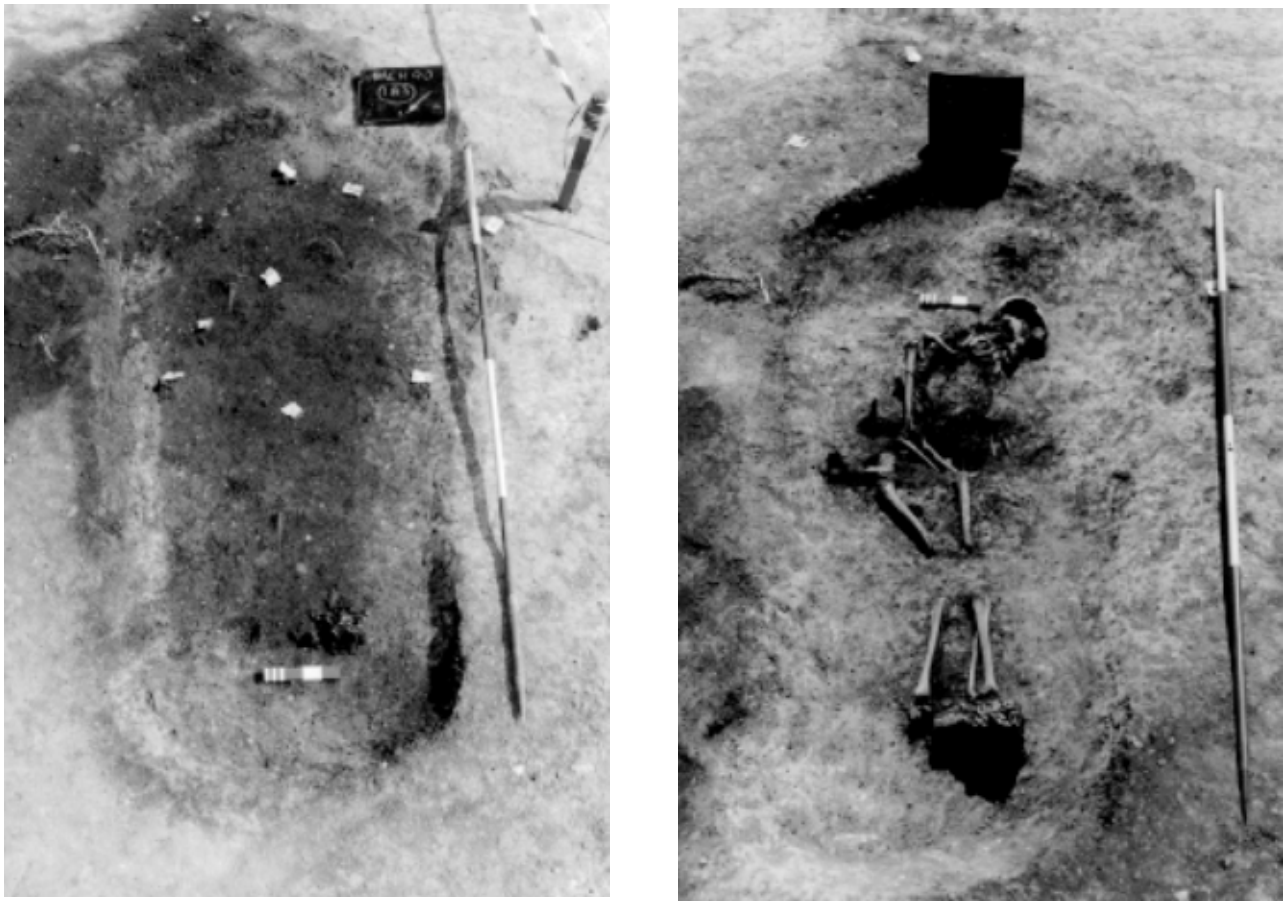


Figure 3.17 Grave 60, bed-burial before and after excavation, note the dark rectangular outline of the bed in the first picture with labels showing the position of displaced bed fittings in the upper level

Grave 59 (Features 14 and 178, Sk178)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.04m; shape/type of grave: sub-rectangular; marker post; orientation: 211°.

Grave 59 was a shallow scoop into the chalk containing the well preserved skeleton of a small child. At the northern (foot) end of the grave a posthole (F193) was found which had contained a post 0.3m thick and which had been set 0.42m into the chalk natural. The fill of the grave had extended over this posthole but the legs of the skeleton bent around its eastern side. It is clear that the post and burial were contemporary and thus we can presume that this solitary post acted as a marker for the grave.

Features F14 and F178

Sk178 – Child, age 3–4. 85% complete. Lying on L side.

- **Nail**, *F14Δ1, iron. Length 32mm. Not illustrated.*
  Stud, *F178Δ1, copper-alloy, probably from buckle, with possible traces of leather. Diameter 16mm.*
  Unidentified fragments, *F178Δ2, iron, including several pieces of curved rod, possibly from a buckle. Length of largest piece 32mm. Drawn from x-radiograph.*

F178 finds by waist. Plan Fig 3.76.

Grave 60 (Features 121 and 183, Sk183) (see also Graves 61 and 62)

Depth below surface to top of grave: 0.23m; grave depth cut into chalk: 0.18m; shape/type of grave: sub-rectangular, bed-burial (marker post?); possible mound over F183, F184 and 188; orientation: 144°.

This complex area of intercutting features was found after the removal of the ploughsoil. An amorphous area (F121) of dark greyish-brown silty loam (measuring approximately 5 × 3m) was found at the junction of at least three Iron Age ditches (F5, F6/113, and F7/114), obscuring any detail of underlying features. Ferrous artefacts (parts of an Anglo-Saxon bed) were found in the ploughsoil and showed on the surface of F121, and it was assumed that Anglo-Saxon burials probably lay in this area.

This amorphous layer (F121) was significant as it was seldom necessary during excavations at Edix Hill to clean away spreads of other material in order to identify graves and other features. Generally the mechanical excavation of the ploughsoil exposed a

clean chalk surface with cut features clearly visible. Layer F121 could have been the result of recent ploughing having spread the top fills of Iron Age ditches and graves alike, but a more interesting possibility is that this layer represented the remnants of a burial mound (tumulus). The area covered by this deposit was discrete, and occurred above three important burials. One of these, the latest in the sequence, was a bed-burial, grave 60, the grave-pit of which would have been too shallow to contain an assembled bed. However, if a mound had been built over the burial the total depth of the grave might have been sufficient. Although no ring-ditch was found to indicate a barrow, a small mound could have been created from the soil and subsoil. Barrows in association with bed-burials are not unusual (Speake 1989) and it is pertinent to note that Wilkinson referred to a possible flattened tumulus (Smith 1868) or table-land. The location of layer F121 and the associated bed-burial on the very crest of Edix Hill would have exaggerated the height of a mound.

Feature F183 (grave 60) was a wide, shallow, kidney-shaped depression cut into the chalk. Some disturbance was noted at the interface between F121 and F183, probably from ploughing, and parts of the femurs/knees of the skeleton had been removed, possibly by agricultural activity. There was differential preservation of bone, with some areas (such as the ribs and pelvis) badly affected whilst the more robust bones survived well. Most personal ornaments survived *in situ*, but the ironwork associated with the bed appears to have suffered some displacement, presumably because these items would have been slightly higher than the skeleton and were therefore more vulnerable to ploughing and other activities.

Two pits or postholes were found in the base of the grave (F186 and F187) and stratigraphically it is impossible to determine whether these are contemporary or of Iron Age date. F186 may have been the base of a marker post at the head of the burial in grave 60, but no trace of a postpipe was detected in the fill of the grave. F187 was a pit 0.14m deep into which the pelvic area of the skeleton had slumped. It is difficult to imagine what function it performed in association with the Anglo-Saxon burial, and therefore is probably of earlier date (Iron Age?).

Features F121 and F183

Sk183 – Female, age 25–32. Height 1.69m. Evidence of arthritis and dental disease. 70% complete. Supine, semi-flexed.

F183

- **Pin**, *Δ2 copper-alloy. Length 40.5mm.*
  Buckles, 2, *Δ3–4 copper-alloy (round) with mineral-preserved threads. Diameters Δ3 17mm, Δ4 16mm.*
  Knife, *Δ11.1, iron (Type unclear; size-group 1), with mineral-preserved horn handle and leather sheath and mineral-replaced textile over blade. Length 101mm.*
  Ring, *Δ1, silver, with spiral knob. Diameter 20mm.*
  Interlinked rings, minimum 4, *Δ5, iron, one apparently with a slip-knot construction, with mineral-replaced textile. Diameter of largest 21mm.*
  'Chain link', figure-of-eight, *Δ11.3, copper-alloy with mineral-replaced threads. Length 13mm.*
  Ring, *Δ11.2, iron, with mineral replaced textile. Diameter 25mm.*
  Stud, *Δ6, iron, with traces of mineral-replaced textile. Length 12mm.*
  Eyelets, 4, from funerary bed, *Δ7–10, iron with mineral-preserved textile and wood. Lengths Δ7 52mm, Δ8 53mm, Δ9 50mm, Δ10 42mm.*

F121

- **Tack or nail**, *Δ5, copper-alloy. Length 10mm.*
  Eyelets, 3, *Δ1–3, iron, from bed-burial, with with mineral-replaced textile. Lengths Δ2 54mm, Δ3 53mm.*
  Plate fragments, *Δ1, Δ4, iron with mineral-replaced textile. Lengths Δ1 53mm, Δ4 42mm. Reconstructed to form a cleat.*

From vicinity of F121/183, found in first cleaning of area before grave defined.

- **Eyelets, 3, and plate fragment with rivet**, *Δ102, iron with mineral-replaced textile, wood and possibly leather. Lengths 51mm, 54mm and 31mm.*
  Stay, *Δ103, iron twisted stay with wood and textile. Length 225mm.*
  Curved bar, *Δ101, iron (with rectangular cross-section) with wood and mineral-replaced textile. Length 210mm. Possibly modern, not illustrated.*

Pin under jaw, on left shoulder. Copper-alloy buckles by either thigh; iron buckle above one of these on R thigh. Ring at shoulder height, in front of backbone. Chatelaine chain-link and ring by pelvis (see 6.10). Stud between legs. Plan Fig 3.77.

Grave 61 (Feature 184, Sk184A, Sk184B)

Depth below surface to top of grave: 0.35m (approximately), grave depth cut into chalk: 0.2m; shape/type of grave: sub-rectangular; deep cut; coffin?; orientation: 210°.

This was a deep cut grave containing a well-preserved skeleton, sealed beneath an amorphous layer F121 (see graves 60 and 62). It was cut into chalk at its north-eastern end and into the fills of an Iron Age ditch (F5) at its south-western end. The position of

the arms and legs suggests movement in the grave during decomposition (eg the right arm had fallen sideways leaving some finger bones on the pelvis). The skull also appeared to have moved and had sunk on to the left shoulder. This evidence for movement suggests that a cavity existed and the size and regularity of the grave indicates a coffin burial.

A small quantity of bones from an infant were found, probably residual bone incorporated into the grave by backfilling. Skull fragments from a child were noted in layer F121 (which sealed the grave) and it is possible a higher burial had been struck by ploughing and the bones dispersed.

Graves 60 and 61 are linked stratigraphically only by both graves having been sealed by layer F121. However, the proximity of the two, with the grave-cuts almost touching at the north-east corner of grave 60 and yet avoiding intercutting, suggests that the location of the earlier burial was known to those digging the second grave. The slightly skewed position of grave 60 as it lay between graves 61 and 62 tentatively suggests that it was the latest grave, inserted into a space between the other two.

Feature F184

Sk184A – Female, age 25–35. Height 1.57m. Evidence of arthritis and congenital/developmental pathology. 80% complete. Supine. Sk184B – Infant, age 10 months. <1% complete.

- **Beads**, *Δ1–19, Δ21–3, 5 glass (1 monochrome, 4 polychrome), 17 amber (total weight c 21gr). Amber beads not illustrated.*
  Knife, *Δ20, iron (Type A), with horn handle and possible leather sheath. Length 125mm.*

Beads scattered mostly around R shoulder. Knife at waist, to L side. Plan Fig 3.77.

Grave 62 (Feature 188, Sk188) (see also Grave 60)

Depth below surface to top of grave: 0.2; grave depth cut into chalk: 0.23m; shape/type of grave: sub-rectangular; coffin?; possible mound over F183, F184, and F188; orientation: 177°.

Grave 62 was a sub-rectangular and well-constructed grave which had been cut into the chalk and the top of two infilled Iron Age ditches (F5 and F7/114). There had been virtually no disturbance of the burial, but preservation of the less robust bones was poor. Grave 62 had cut through two possible pits (F202 and F203) which were not excavated. The shape, depth, and regularity of the grave would be consistent with a coffin burial.

The top of the infill of feature F188 (grave 62) appears to have been disturbed by the insertion of a dog burial (also recorded as F188 and incomplete through later disturbance) near the legs of the human skeleton. It was also disturbed slightly by the cut for grave 60. The dog burial could therefore be part of the contents of the grave, but it must have been added after most of the backfilling had occurred. Alternatively, it could have been associated with grave 60, and have been deliberately buried next to this grave rather than in it.

It is worth noting that analysis of the dog skeleton showed that it would have been smaller than average for Anglo-Saxon dogs. It is just possible that the similarity in fills of the Anglo-Saxon grave (feature F188) and the Iron Age ditch (F7/114) through which it had been cut were confusing and that in fact the dog was in the fill of the ditch and was therefore of Iron Age date.

Feature F188

F188 – Unsexed, age 16. Evidence of dietary and other special pathology. 80% complete. Supine.

- **Pin**, *Δ2, iron. Length 49mm.*
  Buckle, *Δ5, iron (oval loop). Width 20mm.*
  Knife, *Δ4, iron (Type A; size-group 1), with mineral-preserved horn handle and possible leather sheath. Length 130mm.*
  Iron object, *Δ1, unidentified, possible knife point. Length 23mm.*
  Spearhead, *Δ3, iron (Type D1). Length 200mm.*

Spearhead at end of grave, R of skull. Knife and buckle at waist. Pin in upper fill, possibly not associated with burial. Plan Fig 3.77.

Grave 63 (Feature 198, Sk198) (see also Grave 55)

Depth below surface to top of grave: 0.32–0.45m; grave depth: in Iron Age ditch fills; shape/type of grave: uncertain; orientation: 276°.

Grave 63 was discovered as a result of trying to find the edge of the head end of grave 55. No grave-cut was visible in the fill of the Iron Age ditch F15: see discussion under Grave 55.

Feature F198

Sk198 – Male, age 22–25. Height 1.75m. Evidence of dietary pathology and arthritis. 90% complete. Supine.

- **Buckle**, *Δ2, iron (oval loop and triangular backplate), with traces of leather belt with pupae cases and textile. Width 17mm.*
  Knife, *Δ1, iron (Type A), with horn handle and leather sheath. Length 141mm.*
  Nails, 2, *Δ3–4, iron, Δ4 with a fleck of plant material on it. Lengths Δ3 28mm, Δ4 21mm.*

Buckle on sacrum and knife to L of pelvis. Plan Fig 3.78.

Grave 64 (Feature 201)

Feature F201

Depth below surface to top of grave: 0.60m; grave depth: 0.16m; shape/type of grave: unknown; deep cut; unexcavated; orientation: ?.

This feature was a grave containing a well-preserved adult skeleton which had been cut deeply into the fill of an Iron Age ditch (F107). The right side ribs, arm, pelvis, and top of femur were exposed but the burial was left unexcavated as it had been discovered at the base of an Iron Age feature extending beyond the edge of the trench at the end of the digging season. No grave-cut was distinguishable in the fill of the ditch, and the depth of the grave was probably responsible for very good preservation. The soft nature of the fills might have contributed to the fact that the grave was abnormally deep (for Edix Hill).

Grave 65 (Feature 300, Sk300A, Sk300B)

Depth below surface to top of grave: 0.35m; grave depth cut into chalk: 0.12m; shape/type of grave: sub-rectangular?; orientation: 219° (aligned with Iron Age ditch).

This feature was a grave containing two burials. It was a sub-rectangular shape cut into chalk and the top of a pit (F532), probably of Iron Age date. Ploughing (or pan-busting) had removed the right upper arm and seriously damaged the head area.

The two burials showed no stratigraphic separation and were apparently contemporary, with the child lying on the left pelvis of the adult. The child's arm bones lay between the legs and over the left leg of the adult. Differential preservation of the two skeletons might account for so little remaining of the child.

The grave was aligned parallel to an Iron Age ditch (F304) which contained several Anglo-Saxon burials.

Feature F300

Sk300A – Male, age 35. Height 1.77m. Evidence of arthritis, congenital/developmental pathology, trauma, and other pathological features. 95% complete. Supine.

Sk300B – Child, age 2. Possible evidence of disease. 2% complete. Probably supine.

- **Slip-knot bracelet, expandable**, *Δ1, copper-alloy with mineral replaced threads. Diameter 58mm.*

Found over left knee of adult, but with child's bone through bracelet. Plan Fig 3.78.

Grave 66 (Feature 322, Sk322A, Sk322B)

Depth below surface to top of grave: 0.4m; grave depth: 0.22m; shape/type of grave: sub-rectangular?; orientation: 225° (aligned with Iron Age ditch F304).

This feature was a grave containing two well-preserved adult burials, cut into the top of an infilled Iron Age ditch (F304). The edges of the grave were uncertain. Insertion of a land drain in the 1840s had removed the right arm and femur of the upper burial (Sk322A). Below this a second skeleton was found (Sk322B), separated from the upper one by a few centimetres of soil. Although the legs were still articulated the rest of the skeleton had been severely disturbed when the upper burial had been added.

The two burials in grave 66 were therefore not contemporary, and sufficient time had elapsed between burials for the earlier one to have decomposed before burial of the second body. The positioning of the later burial directly over the earlier one suggests that there was deliberate use of this exact burial location and thus knowledge of the grave of Sk322B by those who buried Sk322A.

Feature F322

Sk322A – Male, adult. Height 1.77m. Evidence of arthritis, dental disease and infection, and other pathological features. 95% complete. Supine.

Sk322B – Female, age 25. Height 1.66m. 40% complete. Supine.

F322A (male burial)

- **Buckle**, *Δ10, iron (oval loop), with possible remains of leather belt, pupae cases and textile. Width 16mm.*
  Vessel-mounts, *Δ3–5, copper-alloy sheet, Δ3 with maple (Acer sp.) or birch wood (Betula sp.) fragments. Vessel reconstructed as having rim diameter of 130mm and wall thickness of 3.5–5.9mm. Length Δ3 40mm.*
  Shield studs, **5**, *Δ6–9, Δ11 iron, with mineral-preserved willow (Salix sp.) or poplar (Populus sp.) and leather, and a possible copper-alloy covering on Δ6, Δ7 and Δ9. Diameters Δ6, Δ7, Δ9 35mm, Δ8 13mm, Δ11 39mm.*
  Spearhead, *Δ2, iron (Type H2), with mineral-preserved hazel wood (Corylus sp.) in socket and possible leather on one side of the blade. Length 296mm.*

F322B (female burial)

- **Small long brooches**, **pair**, *Δ17, Δ62, (cross-head type), copper-alloy, with mineral-preserved textile on one. Length 68.5mm.*
  Beads, *Δ12–16, Δ20–60, Δ63–6, Δ68–90, Δ92, 1*

faïence, 1 monochrome glass, 72 amber (total weight c 59gr). Amber beads not illustrated.
Slip-knot ring, *Δ61, copper-alloy. Diameter 19mm.*
Knife, *Δ19, iron (Type A), with horn handle and possible leather sheath. Length 110mm.*
Ring, *Δ18, iron. Diameter 64mm.*
Copper-alloy fragments *Δ67, unidentified, strip with copper-alloy studs, some mineral-preserved threads.*
Pin, *Δ91, copper-alloy. Length 30mm.*

F322A or B (indeterminate)

- **Iron fragment,** *Δ1, unidentified; could be from a buckle loop. Length 24mm.*

Sk322A – Spearhead to R of skull. Mounts to L. Shield studs and buckle Δ10 over pelvis.

Sk322B – Severely disturbed. Knife and iron ring by L thigh, knife blade towards head. One small long brooch between legs. Beads scattered over the chest and pelvis; slip-knot ring high on chest with beads. No record of where pin found. Plan Fig 3.78.

Grave 67 (Feature 352, Sk352)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.09m; shape/type of grave: oval; orientation: 215°.

This feature contained a well-preserved child's skeleton. The grave had been scooped out of the chalk to the exact size of the child, and, although the skull had shattered, the burial had not been damaged or disturbed in spite of an 1840s drain lying immediately to the south-west of it.

Feature F352

Sk352 – Child, age 3–4. 90% complete. Supine.

No artefacts recorded in this context. Plan Fig 3.78.

Grave 68 (Feature 354, Sk354)

Depth below surface to top of grave: 0.32m; grave depth cut into chalk: 0.05m; shape/type of grave: sub-rectangular; orientation: 195°.

This feature was a shallow grave containing the poorly preserved bones of an adult female. Ploughmarks or mole draining could be seen as a series of scours through the chalk, and these activities had severely damaged the skeleton and associated artefacts. In spite of this massive disturbance and removal of bone it was possible to record that the chin had been resting on the left shoulder, that the right hand had been placed on the left upper arm across the chest, and that the left arm had lain straight by the left side.

Feature F354

Sk354 – Female, age 45+. Evidence of arthritis and dental disease. 10% complete.

- **Cast saucer brooches**, **pair**, *Δ28 and Δ29, ('marigold' type), gilt copper-alloy with iron pin. Diameter 43mm.*
  Beads, *Δ1–19, Δ31, 18 amber (total weight c 15gr), 2 crystal. Amber beads not illustrated.*
  Buckle*(?), Δ26, iron, fragmentary. Width 23mm. See also Δ22, below.*
  Wrist-clasps, pair, *Δ27.1–2, silver (Class A), Diameter of spiral 19mm.*
  Ring, *Δ24, iron. Possibly a suspension loop. Diameter 24mm.*
  Iron fragments, 4, *Δ20–22 and Δ30, possibly nails, with mineral-preserved textile; Δ22 with mineral-preserved organic material, possibly a few threads. Identification of Δ22 as buckle loop suggested from laboratory examination. Lengths Δ20 15mm, Δ21 17mm, Δ22 20mm.*
  Iron fragments, *Δ23, Δ25, unidentified. Maximum dimension 33mm.*

Brooches by shoulders, beads over chest. Buckle below waist in middle. Wrist-clasp and possible suspension loop beside buckle. Plan Fig 3.78.

Grave 69 (Feature 359, Sk359)

Depth below surface to top of grave: 0.32m; grave depth cut into chalk: 0.06m; shape/type of grave: sub-rectangular; coffin?; shroud burial?; orientation: 197°.

This feature was a wide, shallow grave containing the well-preserved skeleton of an adult female. It had been cut into the chalk natural and abutted the terminal of an Iron Age ditch (F357). A series of nine small iron stains was found distributed closely around the body. These might have been the remains of badly corroded coffin nails, and the shape and size of the grave suggest it could have accommodated a coffin. However, the shallowness of the grave-cut would argue against this suggestion and the iron stains were found to follow the shape of the skeleton rather than the shape a coffin, and perhaps could have been associated with a shroud.

Feature F359

Sk359 – Female, age 18. Height 1.61m. Evidence of arthritis. 90% complete. Supine.

- **Buckle**, *Δ11, iron loop, tongue and rivet, copper-alloy plate possibly mounted on antler. Width 15mm.*

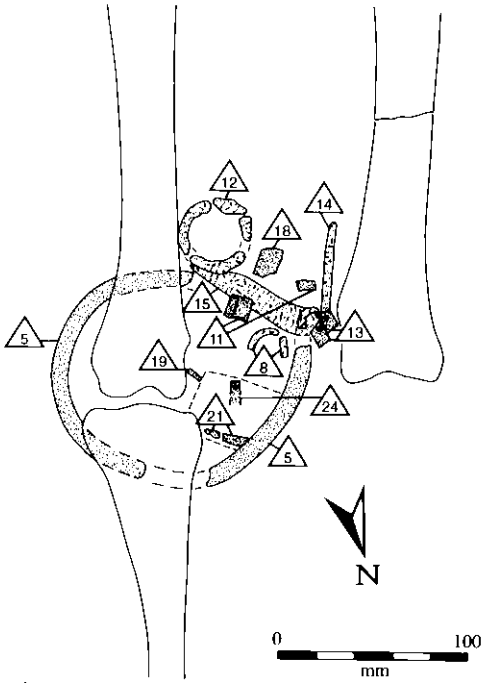


Figure 3.18 Grave 69, detail of bag contents beneath the right knee

Ring fragments, *Δ8–9, iron, possibly from buckle, diameter 25mm.*
Wrist-clasps, **2 pairs**, *Δ2, Δ3, copper-alloy. Δ2 hook-piece (Form B7), catch-piece (Form B14b); Δ3, pair (Form B7). Lengths Δ2 34.5mm, Δ3 37.5mm.*
Knife, *Δ15–16, iron (Type A; size-group 1), with mineral-preserved horn handle and leather sheath, plus pupae cases. Length 91mm.*
Rod fragments, *Δ13–14, Δ17, iron with two copper-alloy strap mounts attached, possible latch lifter. Length of largest iron rod fragment 44mm; lengths of strap mounts 18mm.*
Ring fragments, *Δ12, iron, with mineral replaced textile. Length of largest fragment 30mm.*
Purse ring, *Δ5, ivory. Diameter 121mm.*
Strap mounts, *Δ19, Δ21, Δ24, 10 fragments of sheet copper-alloy with iron rivets and mineral replaced textile. Length of largest fragment 14mm.*
Copper-alloy sheet fragments, *Δ4, Δ6, Δ7, unidentified. Δ4 perforated; Δ7 end of strip. Length of largest fragment 11mm.*
Rod fragment, *Δ10, iron. Length 10mm.*
Iron fragments, *Δ1, Δ22, unidentified. Δ1 Small amorphous lump with cavity in one side. Maximum dimension of Δ1 9mm.*

Wrist-clasps by wrists. Girdle group and bag consisting purse ring, latch lifter, knife, iron ring, buckle, strap mounts and unidentified iron object under R knee (Fig 3.18; see 6.10). Iron fragment Δ1 between legs. No record of where copper-alloy sheet fragments found. Plan Fig 3.78.

Grave 70 (Feature 362, Sk362)

Depth below surface to top of grave: 0.27m; grave depth cut into chalk: 0.12m; shape/type of grave: sub-rectangular; grave-robbed; orientation: 208°.

This grave contained a severely damaged skeleton. There were no ploughmarks in the sides of the grave and the bones had been piled mainly at one end over the left arm and lumbar vertebrae which appeared to have remained *in situ*. Although some artefacts were recovered these were all iron and of little value to grave-robbers; it would seem that this burial had been dug over during the 19th century. Topsoil stripping by machine had also contributed to damage.

Feature F362

Sk362 – Possibly male, age 40–44. Height 1.71m. Evidence of arthritis. 70% complete. Probably supine (but disturbed).

- **Shield stud**, *Δ2, iron, possibly with mineral-preserved leather. Diameter 32mm.*
  Shield boss rim fragment, *Δ3, with complete rivet and copper-alloy 'washer' plus mineral-preserved alder (Alnus sp.) and leather. Length 53mm.*
  Nail*(?)*, *Δ1, iron. Length 12mm.*
  Plate, *Δ4, iron, two fragments. Length of largest fragment 19mm.*
  Iron fragments, **2**, *Δ5–6, unidentified. Maximum dimensions 14mm. Not illustrated.*

Disturbed. Plan Fig 3.78.

Grave 71 (Feature 367, Sk367A, Sk367B)

Depth below surface to top of grave: 0.15m; grave depth cut into chalk: 0.07m; shape/type of grave: oval and spread; grave-robbed; orientation: 185°.

This feature was a shallow grave cut partly into the top of an Iron Age ditch (F368) and partly into chalk. It contained the scattered remains of two skeletons. The top of this grave which had been very badly damaged by ploughing produced a 0.1m zone of mixed grave fill and plough soil. No stratigraphic relationship could be determined for the burials. It is possible the skeletons were found and dug over in the 19th century (a land drain runs close by), and any associated artefacts were removed at that time. Two small postholes (F365 and F366) were identified near the head-end of the grave which may have been used as marker posts. They were not excavated, however, and could equally have formed a line of posts continuing beyond the edge of the trench.

Feature F367

Sk367A – Male, age 25–35. Evidence of disease and other pathological features. 40% complete.

Sk367B – Unsexed, age 18–25. 2% complete. Both disturbed.

- **Iron object**, *Δ1, unidentified, hook or ring fragment. Maximum dimension 17mm. Not illustrated.*

Plan Fig 3.79.

Grave 72 (Feature 369, Sk369A, Sk369C)

Depth below surface to top of grave: 0.28m; grave depth: cut into Iron Age ditch F368; shape/type of grave: spread; grave-robbed; orientation: uncertain?

A very badly disturbed grave with fragmentary remains of at least two burials, and with copper staining on some bones but no metal artefacts remaining. The grave had been disturbed by an 1840s land drain (and probably was completely dug over and robbed at that time) and suffered from intense plough damage in more recent times. No stratigraphic separation was visible between the burials and no grave-cut was visible in the ditch fill.

Feature F369

Sk369A – Unsexed, adult. Evidence of arthritis and disease, possible trauma, and/or congenital and development pathology. 5% complete.

Sk369C – Unsexed, age 16. 1% complete. Both disturbed.

- **Beads**, *Δ1–7, Δ9–10, Δ12, 10 amber (total weight c 5gr). Not illustrated.*
  Shell fragment. *Δ8, salt-water mussel. Length 21mm. Not illustrated.*
  Copper-alloy sheet, *Δ11, with 2 iron fragments. Maximum dimension 6mm. Not illustrated.*

Finds scattered. Plan Fig 3.79.

Grave 73 (Feature 372, Sk372)

Depth below surface to top of grave: 0.21m; grave depth: subsoil only; shape/type of grave: uncertain (severe damage) marker post?; grave-robbed?; orientation: 225°.

This feature was the grave of a male who had been laid into the subsoil. The lower legs and feet were still *in situ* but the rest of the skeleton had been disturbed by both an 1840s drain and subsequent ploughing. Topsoil stripping by machine had also contributed to damage. A posthole (F416) at the head-end may have acted as a marker post.

Feature F372

Sk372 – Male, age 18–25. Height 1.74m. Possible evidence of arthritis, plus evidence of dietary and congenital/developmental pathology. 50% complete. Supine.

No finds recorded in this context. Plan Fig 3.79.

Grave 74 (Feature 401, Sk401)

Depth below surface to top of grave: 0.3m; grave depth: in top of ditch fill (F373); shape/type of grave: uncertain, possibly oval; orientation: 226°.

This feature was the grave of a child which had been cut into the fill of an Iron Age ditch (F373) and then backfilled with the same material; the grave edges were therefore very difficult to define. The shallowness of the burial had made it extremely vulnerable to plough damage which would account for the poor condition and disturbed nature of much of the skeleton.

Feature F401

Sk401 – Child, age under 7. 40% complete. Supine.

- **Wrist-clasp**, *Δ1, (Form B7), copper-alloy. Length 31.5mm.*
  Ceramic disc, *Δ2. Diameter 20mm.*

Wrist-clasp by ribs/chest. Disc found in post-excavation work, possibly from ditch fill (F373). Plan Fig 3.79.

Grave 75 (Feature 402, Sk402)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.05m; shape/type of grave: irregular scoop; grave-robbed?; orientation: 180°.

This feature was a shallow grave which had been scooped out of both the chalk and the terminal of an Iron Age ditch (F404). It had been very severely disturbed and the bones broken up into small pieces and spread out beyond the grave. Ploughing was responsible for much of this damage, but the extent of the damage suggests other causes as well. The nature of the remaining jumbled bones in the grave is reminiscent of further burials that were probably the subject of 19th century grave-robbing. Such digging over in the last century would have contributed to the irregularity of the grave.

Feature F402

Unsexed, adult. 5% complete.

- **Copper-alloy object**, *Δ1, unidentified; of the type known as a clip and similar to mounts for wooden vessel found in grave 18B Δ1. Length 15mm.*

Grave completely disturbed. Plan Fig 3.79.

Grave 76 (Feature 405, Sk405)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.11m; shape/type of grave: sub-rectangular; coffin?; shroud?; marker post?; orientation: 220°.

This feature was a grave that contained the well-preserved skeleton of an adolescent. It had been cut into the chalk natural and across two Iron Age ditches (F373 and F409). An 1840s land drain had been dug through the burial in the area of the chest, but beyond this intrusion there had been surprisingly little disturbance. The skull was found slumped forward to the right with the mandible out of place, showing there had been movement in the grave during decomposition. The regularity of the grave-cut and the evidence for movement of the skull might indicate that originally this burial was in a coffin.

Immediately to the south a large posthole (F470) was recorded, but it was not excavated. This proximity to the head of the burial suggests that the post might have acted as a marker for the grave, although there was no stratigraphic or dating evidence to confirm that the posthole was Anglo-Saxon.

Feature F405

Sk405 – Unsexed, age 15. Special pathological features observed. 90% complete. Supine.

- **Buckle**, *Δ2, iron (oval loop), with threads and possibly associated fragment of leather and pupae. Width 20mm.*
  Spearhead, *Δ1, (Type L), iron. Length 212mm.*

Spearhead at end of grave, L of head. Buckle on L pelvis. Plan Fig 3.79.

Grave 77 (Feature 423, Sk423)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.25m; shape/type of grave: sub-rectangular; orientation: 225° (follows alignment of Iron Age ditch).

This feature was a grave containing the poorly preserved skeleton of an adult male. The grave had been cut quite deeply (for Edix Hill) into the fills of two Iron Age ditches (F409 and F425) and into the chalk natural. The grave follows the edge of ditch F425, but this alignment may be coincidental. The poor survival of the bone has no clear cause, and there is no evidence to suggest that this burial has been disturbed by human activity.

Feature F423

Sk423 – Male, age 18–25. Possible evidence of congenital/developmental pathology. 15% complete. Supine.

- **Buckle**, *Δ3, copper-alloy (small oval type), with some unidentified mineral-preserved organic material. Width 11mm.*
  Nail, *Δ2, iron. Length 30mm.*
  Shield studs, **2**, *Δ1, Δ4, Δ5, iron, 1 with fragment of wood; 1 with leather. Δ4 and Δ5 join and were identified in the laboratory as a shield stud. Diameters Δ1 21mm, Δ4 25mm, Δ5 22mm. Fragments of oak (Quercus sp.) on the front of Δ5 may be part of a coffin lid or cover.*

Buckle by waist or L pelvis; studs Δ4 and Δ5 by ankles, stud Δ1 on chest. Plan Fig 3.79.

Grave 78 (Feature 424, Sk424) (see also Grave 92)

Depth below surface to top of grave: 0.28m; grave depth cut into chalk: 0.08m; shape/type of grave: irregular oval; orientation: 208° (aligned along Iron Age ditch).

Two burials were found abutting, with extreme damage apparent to the higher one (grave 92). Feature F424 (grave 78) was an irregular oval grave that followed the alignment of, and cut into, an Iron Age ditch (F425) and the chalk natural. Bone preservation was good but the skull had been damaged by later activity (ploughing?). We must conclude that grave 78 was earlier than the adjacent grave 92, and had not been disturbed by the original digging or later robbing of the later grave (see discussion under grave 92).

Feature F424

Sk424 – Unsexed, age 14. 90% complete. Supine.

- **Annular brooch,** *Δ3, copper-alloy with iron pin. Diameter 28.5mm.*
  Beads, *Δ1–2, Δ6–15, 1 monochrome glass, 11 amber (total weight c 6gr). Amber beads not illustrated.*
  Buckle, *Δ4, copper-alloy (D-shaped), with associated threads and possible mineral-preserved animal pelt. Width 15mm.*
  Latch lifters, **3**, *Δ5, Δ16, Δ21, iron, with mineral-preserved textile. Lengths Δ5 170mm, Δ16 58mm, Δ21 27mm.*

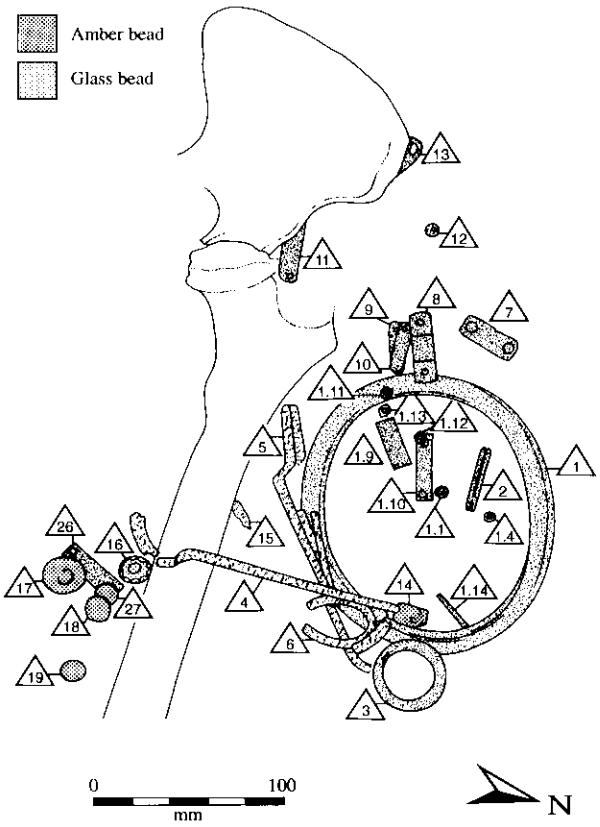


Figure 3.19 Grave 79, detail of bag contents and suspension strap fittings

Double rod, *Δ22, perhaps from latch lifters, iron, with mineral-preserved textile and a fragment of bone or antler. Length 75mm.*
Ring, *Δ18, iron. Diameter 39mm.*
Strip, *Δ19, copper-alloy sheet, two fragments. Length of largest fragment 11mm.*
Fragments, **copper-alloy and iron**, *Δ20, unidentified with mineral-preserved textile. Maximum dimension 24mm.*
Iron fragments, **6**, *Δ17, unidentified. Square-sectioned rods, possibly nails, though found with latch lifter complex. With mineral-preserved textile (very degraded). Length of largest fragment 23mm. Not all illustrated.*

Brooch on skull. Beads over chest. Buckle by L armpit. Girdle group, possibly a bag consisting of latch lifters, and rods Δ17, Δ22 on L thigh. Iron ring and unidentified objects Δ18–20 above latch lifter complex near L hips (see 6.10). Plan Fig 3.80.

Grave 79 (Feature 428, Sk428)

Depth below surface to top of grave: 0.23m; grave depth cut into chalk: 0.2m; shape/type of grave: sub-rectangular; coffin?; orientation: 235°.

This feature was a deep chalk-cut grave containing the complete skeleton of an adult female. The burial was virtually undisturbed and contained a large array of grave goods including an ivory purse opening and associated contents of a bag (Fig 3.19). The large size (depth and width) and regularity of the grave-cut, together with the grave goods, must reflect the status of the individual buried here. It would not be inappropriate for such an important burial to have been in a coffin and the size and shape of the grave would argue for this.

Feature F428

Sk428 – Female, age 30–34. Height 1.61m. Evidence of arthritis, dietary pathology, and possible trauma. 99% complete. Supine.

- **Cast saucer brooches**, **pair**, *Δ99, Δ100, (6-spiral type), copper-alloy, with iron pin and mineral-preserved textile. Diameters Δ99 45.5mm, Δ100 45mm.*
  Beads, *Δ14, Δ16–25, Δ27–35, Δ37–39, Δ42–98, Δ101–40, Δ145–54, Δ156–80, Δ182–3, 12 glass (9 monochrome, 3 polychrome), 145 amber (total weight c 125gr). Not all illustrated.*
  Buckle, *Δ13, iron loop (oval type identified from x-radiograph) and tongue, copper-alloy plate, with mineral-preserved leather and possible textile. Width 10mm.*
  Buckle, *Δ143, iron (oval type), with mineral-preserved leather and textile. Width 10mm.*
  Belt ring, *Δ3, copper-alloy. Diameter 36mm.*
  Knife, *Δ144, iron (Type A or C; size-group 1), with traces of horn handle and leather sheath. Length 122mm.*
  Ring and latch lifter(s), *Δ4–6, Δ15, iron, with unidentified mineral-preserved organic material. Diameter of ring 44mm, length 150mm.*
  Bag complex, *consisting of Δ1.9–10, Δ1.14, Δ7–11, Δ26, Δ36, Δ40, Δ41a–b, Δ141, 12 fragments copper-alloy sheet, 2 with iron rivets, some with mineral-preserved leather. Length of largest 35mm. Δ1.1, Δ1.4, Δ1.11–13, Δ12, 8 rivets, perforated copper-alloy heads and iron shanks, some with mineral-preserved leather. Depth of largest 3mm.*
  Purse ring, *Δ1, ivory. Diameter 143mm.*
  Ring, **small**, *Δ181, possibly a modified small mammal vertebra. Diameter 13mm.*
  Tube, *Δ2, copper-alloy. Probably a brush tube. Length 35mm.*
  Copper-alloy fragments, *Δ142, Δ155, unidentified. Maximum dimension Δ142 16mm. Δ155 not illustrated.*

Brooches on shoulders. Beads between brooches, slumped to R (Fig 3.20). Knife and buckle Δ143 by R side between breast and waist. Bag consisting of ivory ring, latch lifters and belt ring below hips to L (Fig 3.19; see 6.10). Decorated strap passing over right shoulder and buckle Δ13 behind L pelvis. Plan Fig 3.80.

Figure 3.20 Grave 79, detail of necklace

Grave 80 (Feature 430, Sk430A, Sk430C)

Depth below surface to top of grave: 0.23m; grave depth cut into chalk: 0.17m, base of pit: 0.3m into chalk; shape/type of grave: irregular; charnel pit?; grave-robbed?; orientation: ?

This feature comprises two irregular chalk-cut pits 0.17m and 0.30m deep containing fragmentary remains of at least two skeletons. A small quantity of disarticulated adult bone (Sk430A) was found in the fill of the main pit, and a second, smaller pit, was found beneath this layer, cut into the chalk at its base. This lower pit contained a child's bones (Sk430C) which could represent a 'bag-full' of bones although no skull fragments were present. If a skull had been collected separately and placed on top of the other bones it would have been removed by the digging of the upper pit. No artefacts were recovered except for an iron ring from F430A. The very disturbed nature of the deposit in the upper pit suggests that this burial was dug over in the 19th century. It is possible that the redeposition of the bones happened at an earlier time, perhaps as an Anglo-Saxon charnel pit. Both pits and associated bones can therefore be interpreted as secondary burials, with F430C predating F430A.

Feature F430

Identified as a 'charnel pit'. Sk430A Male – age 18–25. Evidence of arthritis and dietary pathology. 10% complete.

Sk430C – Child, under 12. % complete. Disturbed.

■ **Ring**, *Δ1, iron. Diameter 29mm.*

Plan Fig 3.80.

Grave 81 (Feature 431, Sk431)

Depth below surface to top of grave: 0.24m; grave depth cut into chalk: 0.22m; shape/type of grave: sub-rectangular; grave-robbed; orientation: 220°.

This feature was a grave cut quite deeply into the chalk. It contained a collection of bones from a mature adult but these had been damaged and spread about showing severe disturbance attributable to 19th century 'digging-over'.

Feature F431

Sk431 – Male, age 45–49. Height 1.68m. Evidence of arthritis. 20% complete.

■ **Bead**, *Δ1, 1 amber (weight gr). Not illustrated.*
Nail, *Δ2, iron, with unidentified mineral-preserved organic material. Length 25mm.*

Disturbed, but both artefacts in upper body (chest/throat) area. Plan Fig 3.80.

Grave 82 (Feature 432, Sk432A, Sk432B)

Depth below surface to top of grave: 0.13m; grave depth cut into chalk: 0.12m; shape/type of grave: sub-rectangular?; grave-robbed; orientation: 225°.

This feature was a chalk-cut grave containing the bones of an adult female and some bones from a child. The feet and lower legs of the adult were still *in situ* but in the region of the knees an 1840s drain had been inserted and the rest of the burial had been severely disturbed. Although amber beads and some iron artefacts were found there were no copper-alloy or other objects, and it is clear that this grave was largely 'dug over' during the 19th century, probably by the drain diggers. The tiny amount of child's bones does not necessarily indicate that the grave contained a second burial as they could have been incorporated during 19th century backfilling. However, their presence suggests that a child was buried in close proximity and the shallowness of the grave might account for the virtual destruction of any burial that had been placed higher than that of the adult.

Feature F432

Sk432A – Possibly female, adult. Height 1.71m. Evidence of arthritis and other special pathological features. 75% complete. Supine.

Sk432B – Child, age 3–4. 2% complete.

- **Beads**, *Δ3–7, Δ9–13, 10 amber (total weight c 5gr). Not illustrated.*
  Buckle, *Δ2, iron (D-shaped loop). Width 14mm.*
  Nail, *Δ1, iron, with possible mineral-preserved leather. Length 50mm.*
  Iron sheet fragments, 4, *Δ8. Maximum dimension 8mm. Not illustrated.*

Beads on upper part of body. Buckle beside lower legs. Plan Fig 3.80.

Grave 83 (Feature 436, Sk436)

Depth below surface to top of grave: 0.3m; grave depth cut into chalk: 0.1m; shape/type of grave: sub-rectangular; orientation: 200°.

This feature was a chalk-cut grave containing the almost complete skeleton of an adult female with grave goods clearly still *in situ* including a group of keys and antler ring on her pelvis. It is worth noting that copper-alloy artefacts were absent, in this case truly reflecting the types of grave goods with which the woman was buried. It is clear that this was not a coffined burial as the general lack of movement of limbs and artefacts suggest that earth had been backfilled directly around the body.

Feature F436

Sk436 – Female, age 25. Height 1.71m. Evidence of arthritis and dietary pathology. 99% complete. Supine.

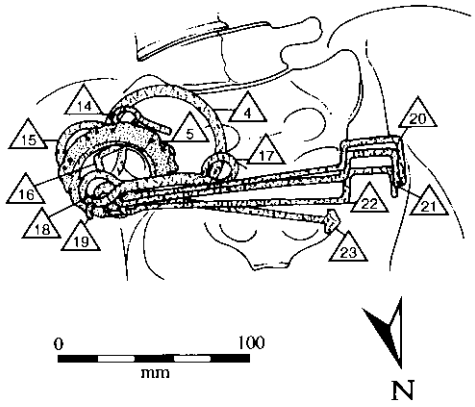


Figure 3.21 Grave 83, detail of bag contents

- **Annular brooch**, *Δ1, shale, very fragmentary. Not illustrated.*
  Beads, *Δ6–11, Δ25–32, 11 glass (3 monochrome, 8 polychrome), 3 amber (total weight c 8gr). Not all illustrated.*
  Buckle, *Δ2, iron (oval loop), with possible traces of leather belt. Width 15mm.*
  Knife, *Δ24, iron, (Type A), with mineral-preserved horn handle and possible leather sheath. Length 106mm.*
  Ring, *Δ5, antler. Diameter 56mm. (Fig 3.21)*
  Latch lifters, **3**, *Δ20–22, iron, with mineral-preserved textile and plant stems. Lengths Δ20 154mm, Δ21 140mm, Δ22 148mm.*
  Girdle hanger, *Δ18, Δ23, iron, with mineral-preserved textile and plant stems. Length of girdle hanger 116mm.*
  Ring, *Δ4, iron. Diameter of ring 63mm.*
  Studs, **2**, *Δ3, Δ13, iron, with sheet silver head and mineral-preserved leather on Δ3. Diameter Δ3 15mm. Δ13 not illustrated.*
  Ring fragments, *Δ15, and Δ19, iron. Diameter of Δ15 33mm. Δ19 not illustrated.*
  Double looped link, *Δ17, iron. Length 76mm.*
  Iron fragments, **2**, *Δ14, Δ16, unidentified. Maximum dimension of largest fragment 33mm.*

Annular brooch on R shoulder. Beads behind the neck and beneath skull. Buckle and knife (knife tip towards head) at waist, towards R side. Studs on the line of the belt. Girdle group and possible bag consisting of ring and latch-lifter complex with iron fragments in middle on pelvis (Fig 3.21). Belt and girdle group seem to be separate (see 6.10). Plan Fig 3.80.

Grave 84 (Feature 440, Sk440A, Sk440B)

Depth below surface to top of grave: 0.35m; grave depth cut into chalk: 0.13m; shape/type of grave: sub-rectangular; marker-post?; orientation: 234°.

This was a sub-rectangular grave which contained two well-preserved skeletons; an adult female whose skull had been laid ('pillowed') on a new-born infant. There had been no disturbance to the baby and the

association of the two clearly shows the burials were contemporary. A possible posthole (F724) was noted at the foot of the grave which might have been for a grave marker.

Feature F440

Sk440A – Female, age 25–35. Height 1.58m. Evidence of arthritis, congenital/developmental pathology, and possible disease. 95% complete. Supine.

Sk440B – Unsexed, perinatal. 50% complete. Flexed.

- **Beads**, *Δ1–12, Δ15–33, 2 glass, 29 amber (total weight c 22gr), Δ31 bone. Not all illustrated.*
  Buckle, *Δ14, iron (oval loop reconstructable), with mineral-preserved leather and textile. Reconstructed width 20mm.*
  Nail, *Δ13, iron, with possible mineral-preserved organic material. Length 24mm.*

Beads around chin and neck, ie a necklace. Buckle at chest. Plan Fig 3.81.

Grave 85 (Feature 447, Sk447A, Sk447B)

Depth below surface to top of grave: 0.28m; grave depth cut into chalk: 0.2m; shape/type of grave: sub-rectangular; grave-robbed; orientation: 229°.

This was a sub-rectangular grave dug partly into chalk and partly into an Iron Age ditch (F448), containing the remains of two burials which had been badly disturbed when a field drain was cut through the middle of them in the 1840s. No artefacts were found. The skull area had been severely disturbed, and the lower halves of the skeletons were largely missing although the pelvic areas of both and one spine survived largely *in situ*. Such evidence suggests that the graves were partly dug over and robbed during the 19th century. No stratigraphic evidence survives to show whether the burials were contemporary or sequential.

Feature F447

Sk447A – Male, age 25–35. Evidence of arthritis, trauma, and dietary pathology. 35% complete. Supine.
Sk447B – Child, age 6–7. Possible evidence of disease. 50% complete. Supine.

- **Fossil shark's tooth**, *Δ1, association with burial uncertain. Not illustrated.*

Plan Fig 3.81.

Grave 86 (Feature 450, Sk450) (see also Grave 115)

Depth below surface to top of grave: 0.22m; grave depth cut into chalk: 0.09m; shape/type of graves: uncertain; orientation: 227°?

Feature F450 (grave 86) was an irregular ovoid grave-cut, above grave 115 and on a slightly different alignment. It had been severely disturbed with only a scatter of broken pieces of bone surviving and no artefacts, suggesting 19th century disturbance.

The stratigraphic relationship of the features show that grave 115 was the earliest and was not disturbed by either the grave-cut for grave 86 or by the subsequent grave-robbing. It may also have been unknown to the Anglo-Saxon diggers of grave 86, suggesting a chronological separation between the two burials. However, the general similarity in alignment and positioning of the burials could also represent a deliberate attempt to locate a second burial (grave 86) in the approximate position of a known earlier one (grave 115), suggesting that the two burials were not far apart in time.

Feature F450

Sk450 – Unsexed adult, age 45+. Evidence of arthritis and possible disease. 20% complete. Disturbed.

- **Iron fragment**, *Δ1, unidentified. Maximum dimension 19mm.*

Plan Fig 3.81.

Grave 87 (Feature 451, SK451A, Sk451B) (see also Grave 88)

Depth below surface to top of grave: 0.21m; grave depth cut into chalk: 0.11m shape/type of graves: ovoid; grave-robbed; orientation: 225°.

Grave 87 was an irregular ovoid grave, cut into chalk and across an Iron Age ditch (F449). Human bones had been broken up and scattered throughout the grave. Some fragments of iron survived, but no other artefacts. An 1840s field drain runs close to the south-west and it is apparent that this grave has been dug over. In addition to the main burial, some bones from a second individual were noted. These may indicate that there were originally two burials in the grave, but it seems more likely that this represents bone that was incorporated with grave fill at burial or during 19th century backfilling.

Although graves 87 and 88 have no direct stratigraphic relationship, the association of one with the other – virtually touching without intercutting – suggests deliberate avoidance.

Figure 3.22 Grave 88, deep grave with shield, spear and miniature bucket

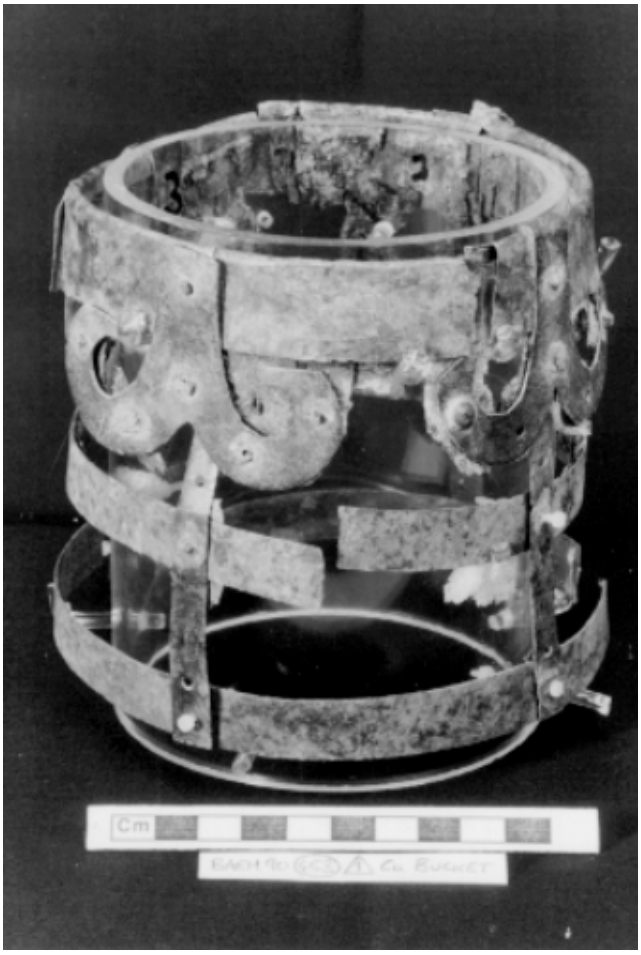


Figure 3.23 Grave 88, copper-alloy-bound bucket

Feature F451

Sk451A – Male, age 50–59. Height 1.81m. Evidence of arthritis and trauma. 60% complete.
Sk451B – Unsexed, age 15. Evidence of congenital/developmental and dietary pathology, and dental disease. 3% complete. Both skeletons disturbed.

- **Iron fragments**, *Δ1–3, unidentified. Δ1–2 possible nail fragments (not illustrated). Maximum dimension of largest fragment 15mm.*

Plan Fig 3.81.

Grave 88 (Feature 453, Sk453A, Sk453B)

Depth below surface to top of grave: 0.24m; grave depth cut into chalk: 0.24m; shape/type of grave: rectangular; coffin; orientation: 190°.

Grave 88 was a rectangular deep-cut grave with a complete male skeleton (Sk453A) and grave goods together with additional bones representing *c* 3% of an older individual (Sk453B). Spots of iron stain were noted on the base of the grave. The remarkable regularity and depth of the grave (Fig 3.22), the evidence of post-mortuary movement, and iron spots round the edges of the grave, suggest the possibility that it may have contained a coffin. The extra bone in the grave must represent a background scatter, as there is no indication of disturbance which might have removed a higher burial. Postholes F417 and F454 were found immediately west of this burial, and may be Anglo-Saxon and associated with the grave rather than Iron Age features, but there is no dating evidence.

Features F453

Sk453A – Male, age 18–25. Height 1.71m. Evidence of arthritis and dietary and other special pathology. 98% complete. Supine.
Sk453B – Male, age 35–45. 3% complete.

- **Buckle**, *Δ11, iron (oval loop), with possible traces of leather belt and textile. Width 18mm.*
  Knife, *Δ9, iron (Type A; size-group 1), with traces of horn handle and possible leather sheath. Length 99mm.*
  Bucket, *Δ1, copper-alloy bindings with remains of yew (Taxus sp.). Original basal diameter of bucket 140mm (Fig 3.23).*

Shield boss, *Δ3, (Group 3) and grip, iron, with mineral-preserved leather and either willow (Salix sp.) or poplar (Populus sp.) on the boss and leather on the grip. Diameter 150mm.*
Shield studs, **4**, *Δ4, 6–8, iron, with mineral-preserved wood and leather. Diameters Δ6 49mm, Δ7 47mm.*
Spearhead, *Δ2, iron (Type H2). Length 251mm.*
Stud, *Δ10, iron. Diameter 6mm.*
Stud heads, **2**, *Δ5, Δ12, perforated copper-alloy sheet, slightly domed. Diameters Δ5 9mm, Δ12 7mm.*

Spear at end of grave, R of skull. Bucket placed beside spearhead. Shield boss on waist, R of centre. Buckle at chest, in middle, knife at waist towards L. Copper-alloy stud head Δ5 in shield area, possibly from the grip. Iron stud Δ10 at feet. Plan Fig 3.81.

Grave 89 (Feature 455, Sk455)

Depth below surface to top of grave: 0.31m; grave depth cut into chalk: 0.13m; shape/type of grave: sub-rectangular; grave-robbed; orientation: 185°.

This feature was a long, narrow grave cut into both chalk and the fill of an Iron Age ditch (F457). This grave contained the jumbled bones of an adolescent. At its southern end the leg bones had all been carefully laid together. No artefacts were recovered and it is clear that this burial had been dug over, possibly during the 19th century. The way in which the leg bones had been relaid is unlike most other 19th century grave-robbing, and it is possible that this disturbance occurred at a much earlier date, possibly even during the Anglo-Saxon period.

Feature F455

Sk455 – Unsexed, age 17–18. Evidence of dietary pathology. 85% complete.

No finds recorded in this context. Plan Fig 3.81.

Grave 90 (Feature 458, Sk458) (see also Grave 91)

Depth below surface to top of grave: 0.25m; grave depth cut into chalk: 0.3m; shape/type of grave: sub-rectangular; orientation: 196°.

Grave 90 was a sub-rectangular grave containing a complete crouched inhumation, cut partly into chalk natural, and partly into the fills of an Iron Age ditch (F457) and pit (F464/467).

Grave 90 is overlain by grave 91 but there is no evidence to suppose that the burials were associated. Therefore, we must presume that the earlier burial in grave 90 had ceased to be remembered or was visible by the time that the burial in grave 91 occurred.

Feature F458

Sk458 – Female, age 60+. Height 1.56m. Evidence of arthritis, congenital/developmental pathology, and dental disease. 98% complete. Flexed.

- **Knife**, *Δ1, iron (Type A; size-group 2), with horn handle and traces of leather sheath and textile. Length 180mm.*

Knife in front of chest, between raised lower arms of flexed body. Plan Fig 3.82.

Grave 91 (Feature 459, Sk459) (see also Grave 90)

Depth below surface to top of grave: 0.23–0.33m; grave depth: subsoil only; type of grave: spread; orientation: ?

Bones from this burial were found in two concentrations and were initially given the context numbers F459.1 and F459.2, but on later examination the bones were found to represent one individual. The feet and leg end of this burial overlay grave 90 but the head was to the west, in association with a necklace of silver rings and gold pendants. An 1840s drainpipe ran through the grave and must have caused some damage. The nature of the surviving evidence, some articulated bone, and many artefacts (often more or less *in situ*), suggests that this burial had not been subjected to much 19th century disturbance, but instead had suffered severely from modern ploughing.

Feature F459

Sk459 – Unsexed, age 18. 10% complete. Possibly supine.

- **Beads**, *F459.1 Δ4–5, Δ21, Δ27, Δ42, Δ49; F459.2 Δ2, 7 monochrome glass. Not all illustrated.*
  Slip-knot rings, *F459.1 Δ1–2, Δ6, Δ8–20, Δ22–26, Δ28–41, Δ44–8, Δ50–2, silver, 2 complete, 56 fragments, Δ12 30mm, Δ25 20mm. See reconstruction drawings Fig 3.60.*
  Ring, *F459.2 Δ4, copper-alloy, possibly part of chatelaine chain, complete with probable suspension loop and attachments, with textile and leather. Diameter of complete ring Δ4 25.5mm.*
  Composite scutiform pendant, *F459.1 Δ43, gold. Diameter 21mm.*
  Drop pendant, *F459.1 Δ7, crystal in gold frame. Length 23mm.*
  Knife, *(F459.2 Δ3, iron (Type A), 3 fragments, with mineral-preserved horn handle and probable leather sheath. Single broad groove along one side of the blade noted in the laboratory. Length 91mm.*
  Comb, *F459.2 Δ1, antler (double-sided composite), in 11 fragments, with iron rivets. Length of largest fragment 68mm.*

Nail*(?), F459.1 Δ3, iron. Laboratory report suggests possible buckle loop, with random organic material or very degraded textile. Length 21mm.*

Beads, slip-knot rings and pendants close to teeth and chin. Iron object Δ3 'found loose while cleaning'. Possible chatelaine pieces, comb, and knife found with legs (see 6.10). Plan Fig 3.82.

Grave 92 (Feature 466, Sk466A, Sk466B) (see also Grave 78)

Depth below surface to top of grave: 0.28m; grave depth: 0.08m in subsoil; shape/type of grave: spread, grave-robbed; orientation: ? (aligned along Iron Age ditch).

Two burials were found abutting, with considerable damage to the higher one (grave 92) which contained the fragmentary remains of two individuals (Sk466A and B).

The surviving evidence for grave 92 shows a closely bunched collection of very broken up bones in a semi-circular pattern abutting the fill of grave 78 but there was no direct stratigraphic link between the two graves. The broken up skeletons in grave 92 are not consistent with the drag effect of ploughing and the disturbed nature of the burial may, therefore, be due to 19th century activity. Alternatively the bones in grave 92 may have been disturbed when grave 78 was dug, however, if grave 78 had cut through only part of grave 92 some *in situ* bones might be expected to have survived and the other bones might have been found in the backfill of grave 78. We must therefore conclude that grave 92 was later than grave 78, which although immediately adjacent to 78, had not disturbed this earlier burial either when grave 92 was dug, or when it was robbed at a later date.

Feature F466

Sk466A – Male, adult. Evidence of arthritis. 5% complete.
Sk466B – Unsexed, child/adolescent. <1% complete.

No finds recorded in this context. Plan Fig 3.82.

Grave 93 (Feature 526, Sk526)

Depth below surface to top of grave: 0.27m; grave depth cut into chalk: 0.15m; shape/type of grave: sub-rectangular; orientation: 210° (aligned with Iron Age ditch F304).

This feature was a regular grave, cut into chalk and the fill of an Iron Age pit (F634), containing the virtually complete skeleton of a mature female. The skull had been damaged by topsoil stripping and perhaps by compaction from agricultural machinery. The burial was otherwise undisturbed. The body had been laid carefully into the grave in a semi-flexed position. Its orientation broadly followed that of the Iron Age ditch (F304/628/629) beside which it had been placed.

Feature F526

Sk526 – Female, age 35–45. Height 1.62m. Evidence of arthritis, dental disease, and possible infection. 99% complete. Flexed.

- **Cruciform brooch***, Δ12, (Type C), copper-alloy with traces of mineral-preserved fibres. Length 71mm.*
  Small long brooch*, Δ11, (cross-head derivative type), copper-alloy. Length 75mm.*
  Beads*, Δ1–9, Δ12–19, Δ22, 18 amber (total weight c 3gr). Not illustrated.*
  Knife*, Δ20, iron (Type A; size-group 2), with horn handle and leather sheath. Length 158mm.*
  Tweezers*, Δ10, copper-alloy. Length 34mm.*
  Wrist clasps, 2 pairs*, Δ23–24, (Form B13c), copper-alloy. Lengths Δ23 46mm, Δ24 46.5mm.*
  Copper-alloy sheet*, Δ21, folded strip. Maximum dimension 7mm.*
  Iron fragments, 10*, Δ1.1–1.7, unidentified. With mineral-preserved textile and possible leather on Δ1.2, a possible latch lifter head fragment. Length of largest fragment 25mm. Δ1.7 not illustrated.*

Brooches by chin, head downwards. Beads L of brooches. Knife L of pelvis, blade towards head. Tweezers and a bead in mouth(!). Wrist-clasps by wrists. Plan Fig 3.82.

Grave 94 (Feature 529, Sk529)

Depth below surface to top of grave: 0.42m; grave depth into chalk: 0.09m (and partly into fill of Iron Age ditch F304/543); shape/type of grave: sub-rectangular?; orientation: 204° (aligned along Iron Age ditch F304).

This grave had its south-western end partly cut into chalk and the north-eastern end cut into the fill of an Iron Age ditch (F304/543), and roughly following its alignment. It contained the skeleton of a child. Missing bones might be due to differential preservation or subsidence into the ditch fills. Definite edges to graves cut into the fills of Iron Age features were rare, and thus there is some doubt as to the exact shape and extent of this grave.

Feature F529

Sk529 – Child, age 9. Evidence of dental disease and possible infection. 75% complete. Supine.

- **Pin***, Δ2, bone. Length 78mm.*
  Buckle*, Δ1, iron (fragmentary: unclassifiable),*

with possible traces of leather belt with pupae cases, and textile on the loop. Width 24mm.
Knife, *Δ3, iron (Type A; size-group 1), with horn handle and possible leather sheath. Length 81mm.*

All objects around waist, knife with blade towards head. Plan Fig 3.82.

Grave 95 (Feature 530, Sk530)

Depth below surface to top of grave: 0.26–0.34m; grave depth cut into chalk: 0.1m (cut into fill of Iron Age ditch F304); shape/type of grave: oval; orientation: 231° (aligned along Iron Age ditch).

This grave was cut into the fills of an Iron Age ditch (F304/628/629) and contained a virtually complete skeleton with artefacts still *in situ*. The only evidence for disturbance was a string of amber beads which had moved from its anchor point beneath the left brooch to cover the right shoulder, whilst retaining its origin from the right brooch. The skull had been shattered (by agricultural activity?). The grave had steep sides and a flat base. It had been aligned along the line of the ditch.

Feature F530

Sk530 – Female, age 52–59. Height 1.65m. Evidence of dental disease and infection and special pathological features. 99% complete. Supine.

- **Applied saucer brooches**, **2**, *Δ53.1, Δ56, (zoomorphic type), copper-alloy with gilt copper-alloy applied plate, and mineral-preserved textile. Diameters Δ53.1 51.5mm, Δ56 56mm.*
  Beads, *Δ1–26, Δ28–37, Δ39–52, Δ57–70, 18 glass (15 monochrome, 3 gold-in-glass type), 45 amber (total weight c 18gr), 1 'jet'. Not all illustrated.*
  Looped spangles, **2**, *Δ27, Δ38, copper-alloy. Diameter of loops Δ27 11mm, Δ38 12mm.*
  Buckle, *Δ54, copper-alloy (oval type). Width 14mm.*
  Copper-alloy sheet fragments, 9, *Δ55, 3 with copper-alloy rivets. Length of largest fragment 17mm. Not illustrated.*
  Slip-knot bracelet fragments, *Δ71, copper-alloy. Length of largest fragment 31mm.*

Brooches on shoulders. Beads between brooches, slumped to the R. Buckle at top of L thigh. Bracelet under beads by R shoulder, not around arm bone. Copper- alloy sheet fragments Δ55 by buckle. Plan Fig 3.82.

Grave 96 (Feature 547, Sk547A, Sk547B)

Depth below surface to top of grave: 0.41m; grave depth cut into chalk: 0.18m; shape/type of grave: sub-rectangular; coffin?; orientation: 228° (aligned along Iron Age ditch F304/543).

Figure 3.24 Grave 96, double burial with adult and child

This feature was a grave cut partly into the chalk and partly into the fill of an Iron Age ditch (F304/543). The grave contained the double burial of an adult female and child (Fig 3.24). Both skeletons were well preserved and had been laid in the grave so that they were facing one another. The jaw of each skull had dropped open and there had been definite movement of some grave goods, but there was no evidence of disturbance from grave-robbing or ploughing. This suggests that a cavity existed during decomposition and that the burials might have been contained in a coffin, a suggestion supported by the shape, depth, and regularity of the grave-cut.

There is no evidence to suggest that these burials were not contemporary, and the interment of both together in such an intimate way indicates strongly that they were closely related (mother and child?).

Feature F547

Sk547A – Female, age 25–35. Height 1.66m. Evidence of arthritis and dental disease. 85% complete. Supine.

- **Disc brooch**, *Δ4, copper-alloy with iron pin and mineral-preserved textile. Diameter 38mm.*
  Small long brooch, *Δ5, (trefoil type), copper-alloy, with mineral-preserved textile. Length 90mm.*
  Beads, *Δ3, Δ6–17, 1 faïence, 12 amber (total weight c 4gr). Amber beads not illustrated.*
  Bead tube, *Δ19, copper-alloy. Length 14mm.*
  Knife, *Δ1, iron (Type A), with traces of horn handle and leather sheath. Length 147mm.*
  Ring, *Δ2, iron. Diameter 32mm.*

Brooches at shoulder level, slumped to the L, as are the beads. Knife and ring at pelvis, towards L. Plan Fig 3.82.

Sk547B – Child, age 10–11. 90% complete. Supine.

- **Beads**, *Δ21–22, 2 monochrome glass. Δ21 not illustrated.*
  Bead tube, *Δ20, copper-alloy. Length 15mm.*
  Scutiform pendant, *Δ18, copper-alloy. Diameter 24mm.*

Scutiform pendant with the beads beneath jaw. Possibly spread from Sk547A. Plan Fig 3.82.

Grave 97 (Feature 551, Sk551)

Depth below surface to top of grave: uncertain; grave depth cut into chalk: 0.1m; shape/type of grave: irregular sub-rectangle; orientation: 260°.

This feature was a grave cut into chalk and into the fills of Iron Age features (ditch F559 and pit F557) containing the well-preserved skeleton of an adult male. The skull had been shattered through compaction but there was no indication of disturbance. The feet and lower legs were slightly raised.

Feature F551

Sk551 – Male, age 20–30. Height 1.74m. Evidence of arthritis. 98% complete. Supine.

- **Buckle**, *Δ2, iron with copper-alloy rivets (unclassifiable), and traces of leather belt and mineral-replaced textile. Width 21mm.*
  Knife, *Δ1, iron (Type A, size-group 2), with horn handle and leather sheath. Blade length 127mm, total length 187mm.*
  Comb, *Δ3, antler (single-sided composite with double connecting plate) with iron rivets. Length of largest fragment 27mm.*
  Plate fragment, *Δ4, tinned copper-alloy. Maximum dimension 9mm.*

Knife (blade towards head) and buckle at waist, towards L. Comb fragment beside R lower leg and copper-alloy fragment under L pelvis. Plan Fig 3.83.

Grave 98 (Feature 553, Sk553)

Depth below surface to top of grave: uncertain; grave depth cut into chalk: 0.16m; shape/type of grave: sub-rectangular; coffin?; orientation: 140°.

This feature was a chalk-cut grave containing the reasonably well-preserved skeleton of a mature male. Many of the ribs and vertebrae did not survive, and ploughmarks were recorded cutting through this area, but the rest of the bones survived *in situ* with the skull in surprisingly good condition. This was lying on its right-hand side and the jaw was open suggesting that the skull had fallen sideways and that there must have been a cavity in the grave. The finger bones of the right hand had bent around the right femur which could also derive from gradual slippage during decomposition. The edges of the grave were not very certain due to plough damage, making it difficult to see if the regularity of the grave would have been consistent with a coffin burial.

Feature F553

Sk553 – Male, age 45+. Height 1.72m. Evidence of arthritis, trauma, and dental disease. 80% complete. Supine.

- **Buckle**, *Δ2, iron (oval loop), covered in textile and with possible traces of leather belt. Width 20mm.*
  Knife, *Δ1, iron (Type A, size-group 1), with possible horn handle and traces of leather sheath. Length 132mm.*
  Spearhead, *Δ3, iron (Type E1/F1 transitional), with mineral-preserved wood in socket. Length 162mm.*

Spearhead by L shoulder. Buckle to R and knife to L at waist. Plan Fig 3.83.

Grave 99 (Feature 576, Sk576) and Grave 104 (Feature 591, Sk591)

Depth below surface to top of grave: 0.37m; grave depth cut into chalk: 0.12m; shape/type of graves: grave 99 – rectangular, coffin; grave 104 – empty; orientation: grave 99 – 241°; grave 104 – 175°.

These features were chalk-cut graves. Grave 104 was the earlier and was aligned SSE–NNW but had been cut by the W–E grave 99. The latter contained the virtually complete skeleton of a mature male, at the feet of which were a collection of child bones, which are presumed to be the redeposited bones from the earlier grave (grave 104). The sides of grave 99 were vertical and it was square-ended and relatively deep, suggestive of a coffined burial. The skull appeared to be pillowed on chalk-marl and had been damaged but otherwise no disturbance to the skeleton was noted.

Features F576 and F591

Sk576 – Male, age 45+. Height 1.75m. Evidence of arthritis and dental pathology. 95% complete. Supine/Flexed.
Sk591 – Child, age 7. 15% complete.

- **Knife**, *Δ1, iron (Type A though similar to Type C, size-group 2), with horn handle, leather sheath, and textile on one side. Length 175mm.*

Knife under L shoulder of 576. Plan Fig 3.83.

Grave 100 (Feature 578, Sk578)

Depth below surface to top of grave: 0.33m; grave depth cut into chalk: 0.22m; shape/type of grave: sub-rectangular; coffin; orientation: 230°.

This was a very regular, deep, chalk-cut grave containing the almost complete skeleton of an adult male. The skull was lying vertically propped against the head-end of the grave and the feet bones were spread around the lower legs. The rest of the skeleton seemed undisturbed. This pattern of bone distribution strongly suggests that the whole body slumped down into the tight-fitting grave, leaving both ends of the body slightly higher and resulting in the feet bones dropping backwards into the grave as decomposition advanced. The obvious inference is that this was a coffined burial.

Feature F578

Sk578 – Male, age 19–25. Height 1.75m. Evidence of arthritis, congenital/developmental pathology, and dental disease. 95% complete. Supine.

- **Knife**, *Δ1, iron (Type A, size-group 2), with horn handle and leather sheath. Length 152mm.*

Below pelvis, towards L. Plan Fig 3.83.

Grave 101 (Feature 584, Sk584)

Depth below surface to top of grave: 0.13m?; grave depth cut into chalk: 0.08m; shape/type of grave: sub-rectangular; orientation: 234°.

This was a shallow grave containing the virtually complete skeleton of a child. It had been cut into chalk and into the fills of two Iron Age ditches (F579 and F585) where they joined. Apart from a shattered skull the skeleton was undisturbed.

Abutting its head-end is grave 103, the grave of another child; the close relationship between these graves, without intercutting, might indicate they were contemporary.

Feature F584

Sk584 – Child, age 3. Evidence of congenital and dietary pathology. 98% complete. Supine.

- **Bead**, *Δ1, glass.*

Below chin. Plan Fig 3.83.

In the top fills of ditch F579, adjacent to this grave, parts of an Anglo-Saxon pot with bosses and cable decoration were found which could possibly have derived from this child's grave (see 5.5.1).

Grave 102 (Feature 586, Sk586)

Depth below surface to top of grave: uncertain; grave depth cut into chalk: 0.1m; shape/type of grave: oval/sub-rectangular; orientation: 241°.

This feature was a grave containing the almost complete skeleton of a child. It had been cut into chalk and across an Iron Age ditch (F585).

Feature F586

Sk586 – Child, age 10–11. Evidence of dietary pathology. 90% complete. Supine.

No artefacts recorded in this context. Plan Fig 3.83.

Grave 103 (Feature 587, Sk587)

Depth below surface to top of grave: uncertain; grave depth cut into chalk: 0.16m; shape/type of grave: sub-rectangular; orientation: 277°.

This feature was a chalk-cut grave containing the almost complete skeleton of a child. Disturbance appears to have been minimal with part of a foot missing and the backbone knocked out of line (possibly from pan-busting?). The foot-end of the grave abuts the head-end of grave 101 and might indicate contemporaneity between these two burials.

Feature F587

Sk587 – Child, age 8. Evidence of congenital pathology. 90% complete. Supine.

No artefacts recorded in this context. Plan Fig 3.83.

Grave 104 (see discussion of grave 99, above)

Grave 105 (Feature 592, Sk592)

Depth below surface to top of grave: 0.25m?; grave depth cut into chalk: 0.15m; shape/type of grave:

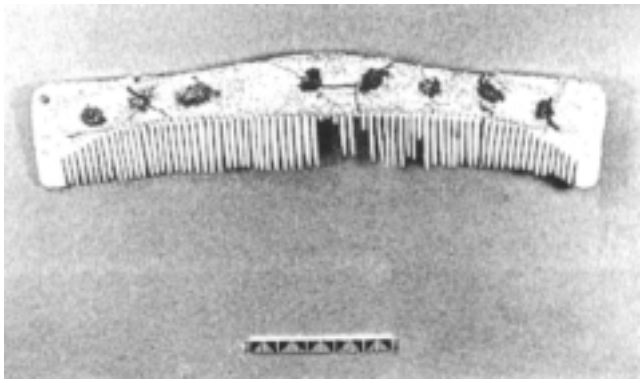


Figure 3.25 Grave 105, comb

sub-rectangular; orientation: 229° (aligned along Iron Age ditch F579).

This feature was a grave cut into natural chalk and into the fill of an Iron Age ditch (F579) containing the virtually complete skeleton of a mature female. The body had been carefully laid on its side into a close-fitting grave. There was no indication of disturbance.

Feature F592

Sk592 – Female, age 52–59. Height 1.66m. Evidence of arthritis, congenital/developmental and dietary pathology, dental disease, and infection. 98% complete. Supine, semi-flexed.

- **Pin**, *Δ2, copper-alloy. Length 42mm.*
  Comb, *Δ1, antler (single-sided composite) with iron rivets. Length 193mm (Fig 3.25).*

Comb on chest; pin on shoulder. Plan Fig 3.84.

Grave 106 (Feature 626, Sk626A, Sk626B)

Depth below surface to top of grave: 0.21m; grave depth: 0.23m cut into fill of Iron Age ditch 304; shape/type of grave: oval; orientation: 242° (along Iron Age ditch F304).

F626 was the grave-cut for a double burial (Fig 3.26). It appears as a 'made-to-measure' ovoid cut into the fills of an Iron Age ditch (F304/628/629). No stratigraphic separation exists within the burial and there is no doubt that the two bodies were laid in the grave together.

Feature F626

Sk626A – Female, age 18–20. Height 1.63m. 95% complete. Supine.

- **Cast saucer brooches, pair**, *Δ145, 155, (5-spiral type), gilt copper-alloy with iron pin and mineral-replaced textile. Diameters Δ145 29mm, Δ155 30mm.*

Figure 3.26 Grave 106, double burial

Beads, *Δ1–144, Δ156–92, 11 glass (2 monochrome, 2 polychrome, 7 gold-in-glass), 167 amber (total weight c 109gr), Δ113 crystal, Δ51 cristobalite.*
Buckle, *Δ154, iron (oval loop), with mineral-preserved leather and textile. Width 20mm.*
Girdle hanger, *Δ153, iron, with mineral-preserved textile and plant stems. Length 200mm.*
Ring, *Δ150, copper alloy. Diameter 35mm.*
Wrist clasps, **2 pairs**, *Δ148–149, (Form B13c), copper-alloy. Lengths Δ148 39mm, Δ149 39mm.*
Studs, **2**, *Δ146–147, iron, with copper-alloy sheet on heads, and antler (cut to reveal the cross-section) on the shanks plus a copper-alloy 'washer' on Δ147. Diameters Δ146 19mm, Δ147 16mm.*

Brooches on shoulders. Beads over chest. Knife with girdle hanger and ring. Studs on either side of lower ribs, upside-down. Buckle on lower R chest. Girdle hanger partially below L femur. Wrist-clasps on wrists. Plan Fig 3.84.

Sk626B – Male, age 18. Height 1.77m. Evidence of arthritis. 98% complete. Supine.

- **Knife**, *Δ193, iron (Type B) with mineral-preserved horn handle and traces of leather on blade. Length 125mm.*
  Spearhead, *Δ152, iron with mineral-preserved wood in socket (Type H2). Length 310mm.*
  Copper-alloy sheet fragment, *Δ151, folded. Maximum dimension 16mm.*

Spearhead to R side of skull of Sk626B. Plan Fig 3.84.

Grave 107 (Feature 632, Sk632)

Depth below surface to top of grave: 0.43m; grave depth cut into chalk: 0.18m; shape/type of grave: oval; orientation: 243° (aligned along Iron Age ditch F304).

This feature was a grave, cut into the chalk and into the edge of an Iron Age ditch (F304/543), containing the skeleton of a child. An 1840s drain was found running immediately north-west of the grave but did not appear to have disturbed the burial.

Feature F632

Sk632 – Child, age 5. Evidence of dental disease. 35% complete. Flexed.

- **Spearhead**, *Δ1, iron (Type H1) with mineral-preserved coppiced wood in socket. Length 163mm.*
  Buckle, *Δ2, iron (D-shaped loop), with mineral-preserved leather and textile. Width 12mm.*

Spearhead to R of face of flexed burial, facing R; buckle in front of chest (ie to R). Plan Fig 3.84.

Grave 108 (Feature 679, Sk679)

Depth below surface to top of grave: 0.43m; grave depth cut into chalk: 0.24m; shape/type of grave: sub-rectangular (almost square); coffin?; orientation: 260°.

This feature was a deep chalk-cut grave containing the well-preserved skeleton of a very young child with grave goods (Fig 3.27). At the chalk surface this feature resembled a pit more than a grave and the mixed deposits in the grave were a consequence of back-filling rather than recuts. The sides of the grave were vertical and there was plenty of space around the body. The possibility that this was a coffined burial is suggested by the regularity and depth of the grave-cut, and its size in relation to the body. The size of grave and perhaps the grave goods show significant expenditure of effort on the burial, which may reflect the importance of the individual, and by implication, the family involved.

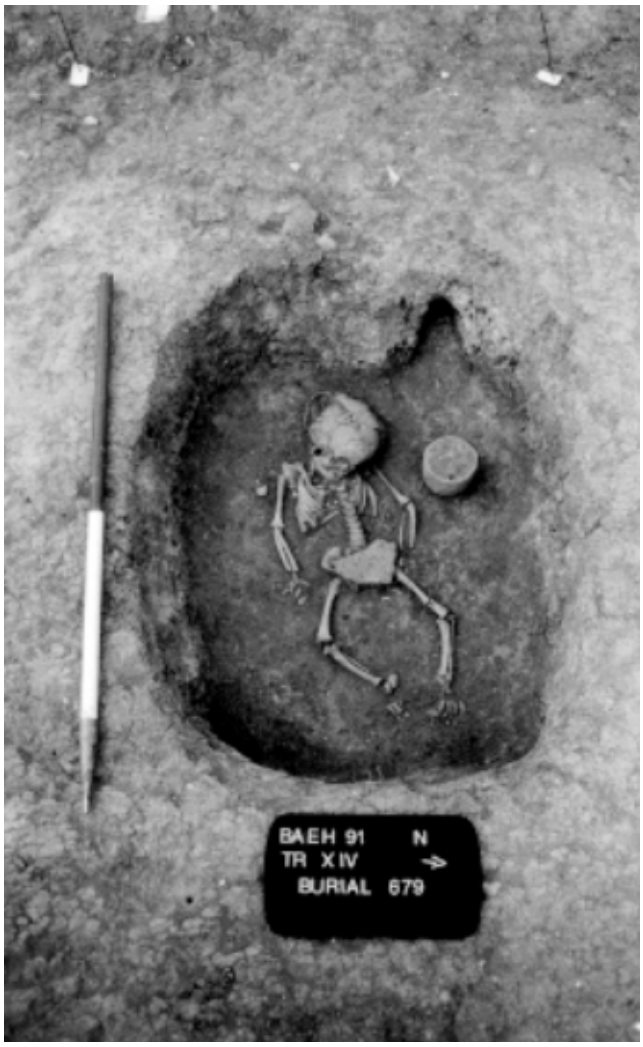


Figure 3.27 Grave 108, child burial

Feature F679

Sk679 – Child, age 18 months. 80% complete. Supine.

- **Beads**, *Δ1–2, Δ4–8, Δ10–16, 14 glass (12 monochrome, 2 polychrome), 1 amber (weight c 2gr). Not all illustrated.*
  Pottery, *Δ3, 1 complete pot. Height of vessel 85mm.*
  Pottery sherd, *Δ9, Iron Age pottery. Maximum dimension 110mm.*

Beads on chest, slumped to R, two by R hand. Sherd on pelvis. Complete pot by L arm. Plan Fig 3.84.

Grave 109 (Feature 683, Sk683A, Sk683B)

Depth below surface to top of grave: uncertain; grave depth cut into chalk: 0.4m; shape/type of grave: oval; Anglo-Saxon disturbance to upper burial; lower coffin?; orientation: 272°.

Grave 109 was a regular oval grave cut into chalk

and the fills of ditch F685. The top of this grave was at an unrecorded depth below the present surface of the field. It contained two burials.

The later burial was that of Sk683B which was largely complete and undisturbed. It lay in the base of a 0.4m deep chalk-cut grave with associated grave goods (Fig 3.28). At a distance of 80mm above this skeleton there lay a few scattered and broken bones of a second individual (Sk683A), some bones of which were found amongst the skeleton at the base of the grave fill of the lower and later burial. The evidence indicates that an Anglo-Saxon grave containing burial Sk683A was disturbed by the later burial of Sk683B and the bones incorporated into the later grave's fill during backfilling.

The depth and regularity of the grave, and the apparent sideways movement of the skull of Sk683B (which had been pillowed on chalk) indicate that a cavity existed during decomposition, suggesting a coffin burial or some kind of mortuary structure. It is possible that the grave of the first burial had been deliberately selected for the location of the later burial, but it is unlikely in this case because it must have been clear to the grave-diggers that they were disturbing an existing burial and the extent of destruction demonstrates that this did not concern them. Therefore the two burials would seem to be unrelated and temporally quite distinct.

Figure 3.28 Grave 109, chatelaine chain and pot

Feature F683

Sk683A – Unsexed, adult. Evidence of arthritis and dental disease. 3% complete.

- **Beads**, *Δ1, Δ3, 2 monochrome glass.*
  Comb, *Δ2, antler (double-sided composite). Largest fragment 47mm.*

Completely scattered around edges of grave. Plan Fig 3.84.

Sk683B – Female, age 35–45. Evidence of dental disease. 90% complete. Supine.

- **Bead**, *Δ1, monochrome glass.*
  Roman coin, *Δ6, copper-alloy (not pierced for suspension). Weight: 4.87g. Not illustrated.*
  Buckle, *Δ9, copper-alloy (small oval type), with mineral-preserved leather and textile. Width 12mm.*
  Knife, *Δ7, iron (Type B, size-group 1), with mineral-preserved horn handle and possible traces of leather on the blade. Length 131mm.*
  Chatelaine, *Δ5, iron, with attached looped rod with mineral-preserved textile, possibly a braid, over the loop. Length of rod 122mm.*
  Spindle whorl, *Δ8, antler. Diameter 47mm.*
  Pot, *Δ2, Height 150mm.*
  Box fittings, **iron**, *Δ3, Δ4, Δ10, including handle and 2 parts of locking mechanism (cf Speake 1989, Fig 24), with mineral-preserved wood and plant stems on the handle and mineral-replaced threads. Lengths Δ3 73mm, Δ4 82mm, Δ10 19mm.*

Chatelaine down L side of body and over hip. Coin to L side, between legs at end of chatelaine chain (see 6.10). Buckle beneath 5th lumbar vertebra. Knife slightly above the waist, blade towards head. Pot near L shoulder with box fittings against and inside it. Bead just above R hip. Spindle whorl under R pelvis. Plan Fig 3.84.

Grave 110 (Feature 687, Sk687A, Sk687B)

Depth below surface to top of grave: uncertain; grave depth cut into chalk: 0.16m; shape/type of grave: sub-rectangular; grave-robbed; orientation: 209°.

This feature was a sub-rectangular grave, dug into chalk to accommodate a double burial (Sk687A and Sk687B). The burials had been severely disturbed around their chest and head areas by a gully, and finds included clay-pipe stems. The burials were contemporary.

Feature F687

Sk687A – Female, age 25. Height 1.51m. Evidence of congenital/developmental pathology. 65% complete. Supine.

- **Beads**, *Δ1, Δ3, Δ7, 2 amber, 1 unidentified. Not illustrated.*
  Nail/stud, *Δ2, iron. Length 10mm.*
  Iron fragment, *Δ4, unidentified: perforated head of a suspended object. Diameter 10mm.*

Apparently scattered around the head-end of the grave with some beads near chest and pelvis. Plan Fig 3.84.

Sk687B – Female, age 25–29. Height 1.63m. 55% complete. Supine.

- **Beads**, *Δ3, Δ8–9, Δ11, 4 amber. Not illustrated.*
  Nail, *Δ5, iron, with mineral-preserved textile on one fragment. Length 26mm.*

Apparently scattered around the head-end of the grave. Plan Fig 3.84.

Grave 111 (Feature 688, Sk688)

Depth below surface to top of grave: uncertain; grave depth cut into chalk: 0.10m; shape/type of grave: sub-rectangular; orientation: 207°.

This feature was a chalk-cut grave containing the skeleton of a mature male. The body had been laid in a shallow and narrow grave with the head pillowed on chalk natural. Ploughing had removed much of the skull and parts of the left arm.

Feature F688

Sk688 – Male, age 45+. Height 1.65m. Evidence of arthritis and dental disease. 60% complete. Supine.

- **Buckle**, *Δ2, iron (oval loop), with traces of leather belt. Width 22mm.*
  Spearhead, *Δ1, iron (socket only), with mineral-preserved wood, probably hazel (Corylus sp.). Length 61mm.*

Buckle below R pelvis. Spearhead L of ribs. Plan Fig 3.84.

Grave 112 (Feature 719, Sk719A, Sk719B, Sk719C)

Depth below surface to top of grave: 0.21m?; grave depth: spread above fill of Iron Age ditch; shape/type of grave: unknown (spread); grave-robbed?; orientation: unknown.

Feature number F719 was assigned to a collection of badly fragmented bones (identified as at least three individuals) which must have represented a burial. There was no grave apparent in the underlying fill of an Iron Age ditch (F409), and the shallowness of the burial would have made it very vulnerable to ploughing. The mixed nature of the bones piled together, and their damaged state, resemble other burials that were 'dug over' in the 19th century and then redeposited, and this might have happened to this burial which has also been ploughed over in more recent times. The majority of the bones came from an adult male, but there were a few bones from two other individuals suggesting that residual bones from other burials had become incorporated in this 'grave'.

Feature F719

Sk719A – Male, age 25–35. Height 1.77m. Evidence of arthritis and trauma. 30% complete.

Sk719B – unsexed, age 7–12. 2% complete.

Sk719C – unsexed, child/adolescent. <1% complete.

- **Knife fragment?**, *Δ1, iron. Length 24mm.*
  Iron fragment, *Δ2, unidentified. Maximum dimension 11mm.*

Completely disturbed. Plan Fig 3.85.

Grave 113 (Feature 725, Sk725A, Sk725B)

Depth below surface to top of grave: 0.2m?; grave depth cut into chalk: 0.1m; shape/type of grave: sub-rectangular; grave-robbed; orientation: 246°.

Grave 113 was cut into chalk and the fill of an Iron Age ditch (F457) and contained the jumbled remains of an adult female and parts of another individual. The bones had been piled at one end of the grave having been redeposited after 'digging over' probably during the 19th century.

Beneath the bones a small square feature (F728) was found cut below the level of the grave. This is unlikely to have formed part of the grave itself but might have been an earlier posthole; however, it may also have been a product of the grave-robbing referred to above.

Feature 725

Sk725A – Female, age 25–35. Evidence of dental disease and dietary pathology. 2% complete.
Sk725B – Male, adult. 1% complete.

No artefacts recorded in this context. Plan Fig 3.85.

Grave 114 (Feature 726, Sk726)

Depth below surface to top of grave: 0.14m; grave depth cut into the fill of an Iron Age ditch; shape/type of grave: uncertain; grave-robbed?; orientation: 241°.

This feature was a shallow grave cut into the fill of an Iron Age ditch (409) which made identification of the grave edges uncertain. It contained the disturbed skeleton of an adult female, only the lower legs of which were still *in situ*. The nature of the bones suggests that they were redeposited as a result of 'digging-over' during the 19th century, and could have been disturbed further by ploughing. The grave had been placed across the Iron Age ditch, but not on the same alignment. This relationship is mirrored by 405 and other grave features.

Feature F726

Sk726 – Female, age 17–25. Height 1.63m. Evidence of congenital/developmental pathology. 85% complete. Supine.

- **Bead***s, Δ1–17, 17 amber (total weight c 10gr). Not illustrated.*

Severely disturbed. In addition possible Anglo-Saxon decorated potsherds were found in grave fill (see 5.5.1). Plan Fig 3.85.

Grave 115 (Feature 727, Sk727) (see also Grave 86)

Depth below surface to top of grave: 0.22m; grave depth cut into chalk: 0.26m; shape/type of grave: uncertain; orientation: 197°.

Feature 727 was a grave containing a virtually complete skeleton with grave goods. The marly fill of the grave and the surrounding chalk were so similar that the actual edges of the grave were not discernible. It was on a slightly different alignment to grave 86 (feature 450) which overlay the area of the head and torso of the skeleton in 727. The stratigraphic relationship of these two features is discussed in grave 86 above.

Feature F727

Sk727 – Male, age 20–24. Height 1.79m. Evidence of congenital/developmental pathology and possible disease. 99% complete. Supine.

- **Buckle**, *Δ2, iron (D-shaped loop). Width 14mm.*
  Spearhead, *Δ1, iron (Type H3), with mineral-preserved wood in socket. Length 376mm.*

Spearhead to R of skull. Buckle at waist, to R. Plan Fig 3.85.

3.2.2 Barrington A – grave groups recorded in the 19th century (Table 3.4)

(See Babington 1860; Smith 1868)
Note: Imperial measurements were used in the recording of these grave goods: 1″ = 25mm, 1′ = 0.3m.

Grave 0 (Babington 1860)

18″ deep. Skeleton lay 'sideways'.

- **Small long brooches, 2**, *(square and cross-head derivative types). (Babington 1860, figs A–B; fig A is identical to a brooch now in the University Museum, Cambridge, 1883.515).*
  Beads: *'About 100' amber beads.*
  Iron fragments: *'A little piece of iron' (on the hips).*
  Pottery: *'Pieces of pottery' (on the middle of the body).*

Brooches placed on each side of the neck; beads 'most plentiful just around the neck' but reaching down to the waist. Other items located as noted above.

Grave 1

8″ deep. Skeleton recorded as 'perfect'. Supine; W–E.

- **Beads**: *about 30 amber; at least 4 glass; 1 jet(?); 3 copper-alloy; 2 uncertain.*
  Ring, *copper-alloy. Suggested armlet. (UM Z16125A; Smith 1868 pl XXXIV.6).*

Grave 2

20″ deep.

- **Small long brooches, pair of**, *(trefoil type). (Not UM Z16134 as labelled; Smith 1868 pl XXXII.3.)*
  Beads: *'some' amber; 3 glass (paste).*
  Copper-alloy fragments, *unidentified.*

Grave 3

18″ deep. Skeleton complete, length: 6′ 2″.

- **Spearhead**, *iron (Type H2) (Smith 1868 pl XXIX.3).*
  Shears, *iron (Smith 1868 pl XXXI.3).*
  Iron fragments, *unidentified.*

Spearhead on R arm, shears on L arm. Fragments about the feet.

Table 3.4 Summary of grave and burial information – 19th century excavations

Bur No	Age	Orient	Posture	Position	Sex by	Comb	Bucket	Rings	Tweezer	Buckle	Knife	Beads			Brooch	Girdle group		Weapons	
					grave goods		Copper alloy	Copper alloy				Amber	Glass	Misc		Chatelaine	Latch lifter	Shield fittings	Spearhead
0												100			2				
1		W-E			F			1				30	4+	3					
2					F							?	3		2				
3					M														1
4											1						1?		
5		W-E			F			1?							1+1				
6					F		1	?				80							
7					M														1
8			SF	S	F							?	3?		1				
9		E-W?	E	S							1								
10			F																
11					F			?			1	?	?		2+1				
12					M														1
13										1?									
14	A?				M					1	1								1
15.1					F	1					1	1	1		1				
15.2																			
16	A?	SW-NE			M													1	1
17			F							1									
18					M						1								1
19		W-E		S							1								
20		W-E																	
21		SW-NE		S							2								
22.1		SW-NE			M				1		1								1
22.2		SW-NE			M						1								1
23	J?	SW-NE														?			
24			F																
25										1									
26	A?				M						1								1

Grave 4

18″ deep.

- **Knife**, *iron (given as Smith 1868 pl XXX.5, though this item also identified as from grave 21).*
  Latch lifter, *iron, on copper-alloy ring (UM Z43426; Smith 1868 pl XXX1.5).*

Knife on R arm; latch lifter on L arm.

Grave 5

20″ deep. Skeleton complete. Apparently supine, hands crossed on chest, aligned W–E.

- **Annular brooch**, *copper-alloy (UM Z16135; Smith 1868 pl XXXIII.5)*
  Beads: *'sundry'.*
  Toilet set, *copper-alloy: 2 pins and an ear scoop on slip-knot ring (UM Z16135; Smith 1868 pl XXXIV.3).*
  Wrist clasps, one pair, *Form B7 (UM Z16126; Smith 1868 pl XXXIV.4).*
  Ring (bracelet?), *silver.*

Grave 6

- **Beads**: *about 80 amber.*
  Ring, small wire *(?slip-knot ring, UM Z43388).*
  Bucket, *wooden staves, bound with sheet copper-alloy (UM Z16082; Smith 1868 pl XXXI.4).*

Bucket by jaw.

Grave 7

- **Spearhead**. *No reference to illustration, though Smith 1868 pl XXIX.7 (Type H2) is the only unattributed illustration and this the only spearhead without a figure number. Spear to L of head.*

Grave 8

Skeleton 'perfect'. Supine, legs slightly drawn up.

- **Swastika brooch**, *copper-alloy (UM Z42255; Smith 1868 pl XXXIII.4).*
  Pin, *copper-alloy.*
  Beads: *'a few' amber, 'with three other varieties'.*
  Potsherd: *apparently samian.*

Grave 9

Skeleton 'perfect'. Supine. Head turned towards the east.

- **Knife**, *fragment.*

Grave 10

Flexed. Skeleton much drawn up, hands crossed under the head, the feet also crossed.

No artefacts recorded in this context.

Grave 11

20″ deep. Skeleton 'complete'. Supine, head turned to the R. Right hand on hip, left hand towards the neck.

- **Cast saucer brooches, pair of**, *(6-spiral type), gilt copper-alloy (Smith 1868 pl XXXIII.1).*
  Great square-headed brooch *(Group XV), gilt copper-alloy with applied silver foil (UM Z21315; Smith 1868 pl XXXIII.3).*
  Beads: *several amber and glass.*
  Knife, *iron (Smith 1868 pl XXX.7).*
  Bracelet, *silver (possibly UM Z21315.2: this does not match illustration in Smith 1868 very well; Smith 1868 pl XXXIV.1).*
  Clasp, *copper-alloy.*
  Copper-alloy fragment including rivet, *unidentified.*

Square-headed brooch on R shoulder. Clasp on the body; fragment with rivet on the left of the head – suggested as portion of an ear-ring. Silver bracelet on L wrist. Beads 'about upper part of body'.

Grave 12

Grave cut into the clay; recorded as the only instance of this. Skeleton 'perfect'.

- **Spearhead**, *iron (Type C3 or E3) (Smith 1868 pl XXIX.8).*

Grave 13

Flexed.

- **Link**, *iron, probably part of a buckle.*

Grave 14

15″ deep. Skeleton length: 6′6″.

- **Buckle**, *material not recorded (D-shaped loop). Very like UM D1961.8A, which is copper-alloy (Smith 1868 pl XXXVI.8).*
  Knife, *iron (Smith 1868 pl XXX.8).*

Spearhead, *iron (Type G2) (Smith 1868 pl XXIX.9).*

Spearhead on L arm; knife between the L arm and body; buckle near the waist.

Grave 15

Double grave. Two skeletons side by side, one lying on the arm of the other.

- **Small long brooch (square-headed type)**, *copper-alloy (UM Z16131; Smith 1868 pl XXXII.2).*
  Beads*: 1 amber; 1 white glass.*
  Knife, *iron (Smith 1868 pl XXXI.1 [sic] – presumably pl XXX.1).*
  Comb, *bone or antler, small fragment (Possibly UM Z20616: if so, double-sided).*

Grave 16

Skeleton length: 6′ 6″. Described as an old but powerful man, the skull, rib bone, and condition of the leg bones and part of the back bone indicating great strength. Feet to NE.

- **Shield boss**, *iron (Group 3) (Possibly UM 1988.223; Smith 1868 pl XXXI.1).*
  Spearhead, *iron (Type H2) (Smith 1868 pl XXIX.7).*

Shield boss on chest.

Grave 17

Flexed; feet to the ESE.

- **Buckle**, *fragment*

Grave 18

Skeleton ‘perfect’, length: 6′.

- **Spearhead**, *iron (apparently Type H1, though measurements not given) (Smith 1868 pl XXIX.1).*
  Knife.

Grave 19

Skeleton ‘complete’. Extended, feet to E.

- **Knife**.

Grave 20

Feet to the E.

- **Horn fragment**, *pierced for suspension.*
  Rivet, *iron.*
  Iron fragment, *unidentified.*

Horn suggested to have been suspended from the waist.

Grave 21

Extended, feet to the NE.

- **Knives, 2**, *(Recorded as Smith 1868 pl XXX.3 and 5 though pl XXX.5 also attributed to grave 4).*

Grave 22

Double grave. Both skeletons ‘perfect’. Feet towards the NE.

- **Knives, 2**, *(Smith 1868 pl XXX.6 and 9).*
  Tweezers, *copper-alloy (UM Z16125B; Smith 1868 pl XXXIV.5).*
  Spearheads, 2, *(Types C1/C2 and H1/H2: measurements not given) (Smith 1868 pl XXIX.2 and 3).*

Grave 23

Much decomposed. ‘Evidently . . . of a young person’. ‘Very close indeed to grave 22’. Feet to the NE.

- **Latch lifters, 2–3**, *iron (UM Z 20617A/B; Smith 1868 pl XXXI.6 and 7. The former is not depicted as a normal latch lifter, but may have been incorrectly reconstructed. It is described as fractured in removal.)*

Near the waist.

Grave 24

Flexed.

No artefacts recorded in this context.

Grave 25

No details of grave or skeleton recorded.

- **Part of a buckle**.

Grave 26

Skeleton length: 6′ 3″. Arms bowed at the elbows; head lay forward on the chest.

- **Knife**.
  Spearhead *(Type C1/C2: measurements not given) (Smith 1868 pl XXIX.4).*

3.2.3 Unstratified finds (Figs 3.65–3.67)

3.2.3.1 Edix Hill, 1988–1991

Numbered artefacts below refer to the small find numbers from layer 1000 (the ploughsoil) given during the 1989–91 excavations unless otherwise stated.

- **Great square-headed brooches** *(2):*
  18 Fragment: terminal lobe only. Gilt copper-alloy with inset garnet.
  27 Fragment of small specimen. Probably footplate side lobe. Copper-alloy.

- **Small square-headed brooch** *(1):*
  2 Headplate and bow fragment. Copper-alloy.

- **Cast saucer brooch** *(1):*
  1 Fragment. Spiral-decorated: reconstruction suggests 5-spiral type. Copper-alloy.

- **Disc brooch** *(1):*
  21 Copper-alloy.

- **Swastika brooch** *(1):*
  20 Copper-alloy.

- **Cruciform brooches** *(3):*
  10 Fragment. Headplate and bow only. Copper-alloy.
  46 Burnt fragment: probably from headplate of florid cruciform brooch. Copper-alloy.
  53 Burnt fragment. Headplate only. Probably Type B. Copper-alloy.

- **Small long brooches** *(5):*
  16 Fragment: spatulate foot. Copper-alloy.
  19 Cross-head derivative type. Copper-alloy.
  22 Headplate fragment: square-headed type. Copper-alloy.
  24 Headplate fragment: square-headed type. Copper-alloy.
  25 Headplate fragment: square-headed type. Copper-alloy.

- **Annular brooch** *(1):*
  52 Fragment. Copper-alloy.

- **Penannular brooches** *(2):*
  39 Two fragments which join to make a complete brooch. Copper-alloy.
  3 Fragment; terminal, very twisted (possibly bracelet?) copper-alloy.

- **Radiate-head brooch** *(1):*
  17 Fragment: footplate only. Copper-alloy.

- **Unidentified brooches** *(5):*
  41 Burnt fragments of copper-alloy brooch.
  245 Burnt fragment of copper-alloy brooch.
  247 Burnt fragment of copper-alloy brooch, with catchplate.
  248 Burnt fragment of copper-alloy brooch.
  249 Burnt fragment of copper-alloy brooch.

- **Beads** *(7):*
  213, 214, 215, 227, 233 Amber. Not illustrated.
  236, 237 Glass. Not illustrated

- **Scutiform pendants** *(2):*
  23 Copper-alloy.
  202 Silver.

- **Roman coin pendant** *(1):*
  38 Copper-alloy.

- **Buckles** *(3):*
  5 Iron with silver inlay (kidney-shaped).
  42 Copper-alloy (oval loop).
  246 Burnt fragments of copper-alloy (kidney-shaped)

- **Knives** *(2):*
  35 Blade and tang.
  201 Grooved blade.

- **Girdle hanger** *(1):*
  37 Copper-alloy.

- **Wrist-clasp** *(1):*
  48 Form B7. Copper-alloy.

- **Roman coins** *(3):*
  8 Copper-alloy. Not illustrated.
  220 Copper-alloy. Not illustrated.
  234 Copper-alloy. Not illustrated.

- **Shield bosses** *(3):*
  6 Unclassifiable fragment. Tip of cone and central disc only. Silver on disc.
  9 Unclassifiable fragment. Tip of cone only.
  62 Unclassifiable fragment. Tip of cone only.

- **Shield appliqués** *(2):*
  13 Model sword (Fig 3.29).
  15 Style I decorated button (Fig 3.29).

- **Shield studs** *(4):*
  55 2 studs. Copper-alloy.
  57 Iron with 'silver' foil.
  61 Iron with white metal.

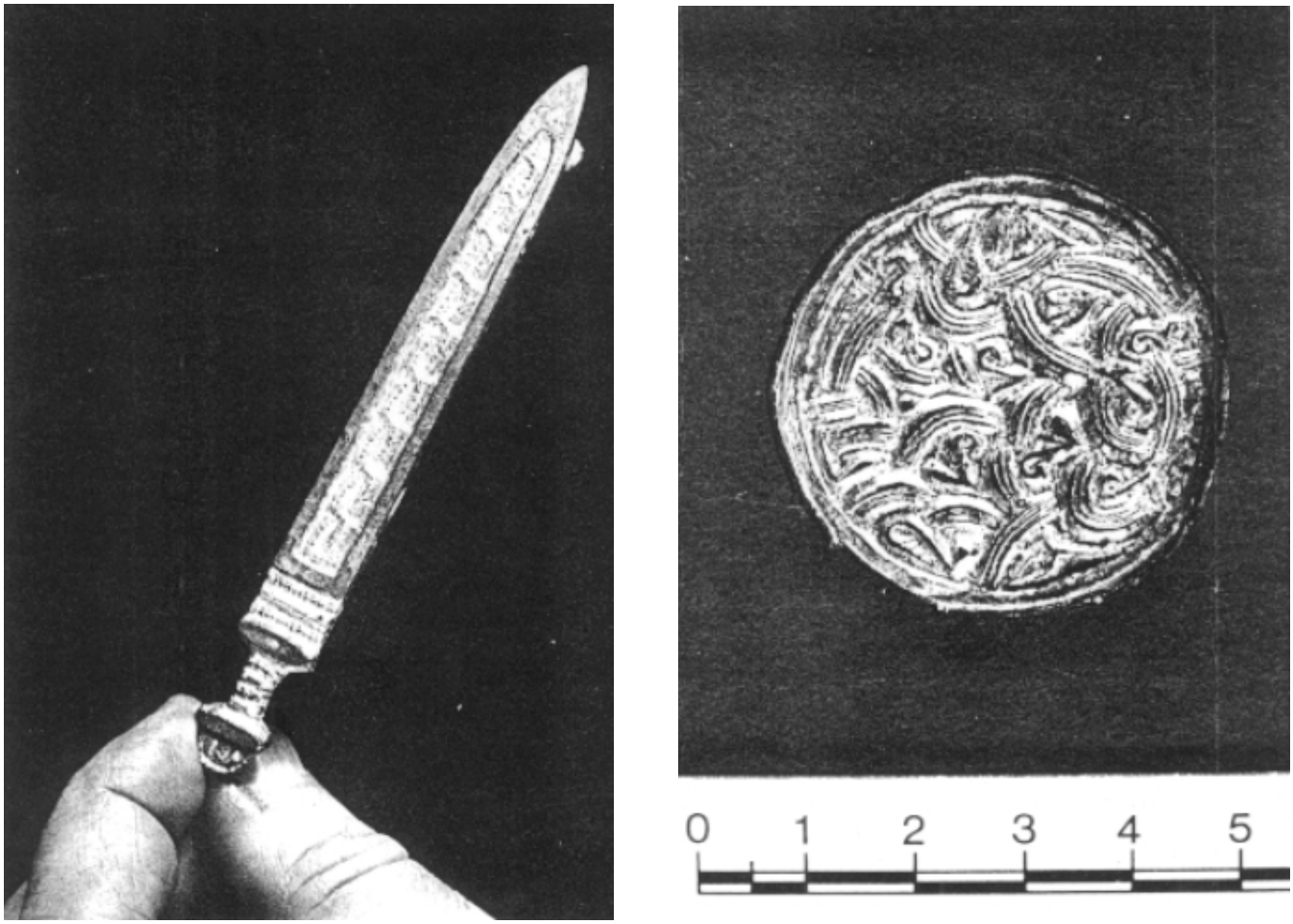


Figure 3.29 Unstratified shield appliqués (metal-detector finds)

- **Spearheads** *(2):*
  36 Type H2. With mineral-preserved wood in socket.
  40 Type H2.

- **Iron nails** *(5):*
  206, 212, 222, 238 Square-sectioned nails, 4, with flat heads. Length 3.0–5.0cm. Not illustrated.
  211 Fragment: square-sectioned shaft, as 206 etc (above). Not illustrated.

- **Unidentified copper-alloy pieces** *(5):*
  45 Curved copper-alloy sheet strip with punched decoration. Possible satchel fitting (cf Speake 1989, fig 53).
  49 Brooch or bucket mount. Stamped dot and triangle decoration.
  58 Rectangular fittings, 2, with incised decoration.
  235 Fragment of copper-alloy sheet mount with iron rivet and mineral replaced textile on the rivet head.

3.2.3.2 19th century and later collections – Barrington A, Malton Farm, Orwell

- **Great square-headed brooches** *(2):*
  Ash 1909.321A Leeds 1949 no 27; MacGregor and Bolick 1993, no 13.16; Hines 1997, pl 90c.
  BM 76.2–12.34 and UM Z21323A Leeds 1949, nos 118 and 125; Hines 1997, pl 101a

- **Applied disc brooches** *(7):*
  Ash 1909.262 (backplate only) MacGregor and Bolick 1993, no 1.26.
  Ash 1909.272 (Kempston type) MacGregor and Bolick 1993, no 1.7.
  Ash 1909.275 (Kempston type) MacGregor and Bolick 1993, no 1.9.
  Ash 1909.275a (Kempston type; pair to 1909.275).
  Ash 1909.850 (zoomorphic type) MacGregor and Bolick 1993, no 1.14.
  Ash 1909.851 (Kempston type) MacGregor and Bolick 1993, no 1.8.
  UM Z21320 (plain applied disc with punched decoration and a central boss).

- **Cast saucer brooches** *(2):*
  Ash 1909.258 (5 pointed star type) MacGregor and Bolick 1993, no 2.25.
  UM Z21321 (5 pointed star type).

- **Disc brooches** *(3):*

Ash 1909.259 MacGregor and Bolick 1993, no 4.13.
BM 76.2–12.38
BM 76.2–12.39 (pair to 76.2–12.38).

- **Swastika brooch** *(1):*
BM 76–2.12.37

- **Cruciform brooches** *(7):*
Ash 1909.251 Type C. MacGregor and Bolick 1993, no 12.13.
Ash 1909.263 Type B. MacGregor and Bolick 1993, no 12.3.
BM 76.2–12.69 Type B?
UM Z21324 Type D.
UM Z21326 Type D.
UM Z21328 Type B.*
UM Z21328 Type D.*
** Note that UM Z21328 is the number of two different cruciform brooches.*

- **Small long brooches** *(26):*
Ash 1909.251a Cross-head type. Now missing but sketched in Ashmolean accessions register.
Ash 1909.268 Cross-head type. MacGregor and Bolick 1993, no 15.55.
Ash 1909.268a Square-headed type with triangular foot. MacGregor and Bolick 1993, no 15.2.
Ash 1909.270 Trefoil type. MacGregor and Bolick 1993, no 15.70.
Ash 1909.270a Trefoil type. MacGregor and Bolick 1993, no 15.74.
Ash 1909.270b Trefoil type. MacGregor and Bolick 1993, no 15.75.
Ash 1909.270c Square-headed type. MacGregor and Bolick 1993, no 15.27.
Ash 1909.303 Pair to 1909.270c. MacGregor and Bolick 1993, no 15.29.
BM 76.2–12.35 Square-headed type.
BM 76.2–12.70 Square-headed type.
UM 1883.517 Cross-head type.
UM 1923.1577 Pair (cross-head type).
UM Z16127A Pair (cross-head type).
UM Z16127B Pair (cross-head derivative type).
UM Z16129 Cross-head derivative type.*
UM Z16129 Cross-head derivative type.*
** Note: UM Z16129 is number given to two brooches of the same classification type but which do not form a pair.*
UM Z16133 Pair (square-headed type).
UM Z16134 Pair (cross-head derivative type).
UM Z21325 Square-headed/cross-head derivative type.
UM Z21329 Pair (trefoil type).
Note also UM 1883.515 (square-headed derivative type), attributed (above) to Barrington A grave 0, recorded by Babington (1860).

- **Penannular brooches** *(2):*
Ash 1909.256e MacGregor and Bolick 1993, no 11.5.
Ash 1909.267d MacGregor and Bolick 1993, no 11.9.

- **Radiate-head brooch** *(1):*
BM 76.2–12.36 Fragment: headplate only.

- **Unidentified brooch** *(1):*
BM 76.2–12.72 Fragment: bow and footplate of continental relief-decorated bow brooch.

- **Roman brooches** *(4):*
Ash 1909.267
Ash 1909.277a
Ash 1909.384
BM 76.2–12.71

- **Copper-alloy pins** *(4):*
Ash 1909.256a
Ash 1909.256g MacGregor and Bolick 1993, no 31.3.
Ash 1909.256h MacGregor and Bolick 1993, no 31.13.
Ash 1909.270g MacGregor and Bolick 1993, no 31.7.

- **Bell brooch** *(1):*
Ash 1909.255 Bell-shaped pendant apparently refitted as brooch. MacGregor and Bolick 1993, no 25.7.

- **Beads** *(18 sets):*
Ash 1909.252 98 dark blue glass beads.
Ash 1909.253 35 opaque glass and 1 crystal bead.
Ash 1909.254 14 amber beads.
Ash 1909.257 1 very large glass melon bead.
Ash 1909.265 Unknown number of glass beads and 1 crystal bead.
Ash 1909.266 Crystal melon bead.
Ash 1909.271 38 amber and 1 steatite bead.
Ash 1909.273 35 amber and 1 shale bead.
Ash 1927.880 Uncertain composition.
BM 76.2–12.43 3 glass triple beads.
BM 76.2–12.44 17 glass (6 yellow-green melon; 3 yellow-green annular; 3 blue annular; 2 red annular; 2 colourless annular; 1 blue on white spherical).
BM 76.2–12.45 34 amber.
BM OA4993 1 glass, yellow.
UM 1923.1577 8 amber, 4 glass beads.
UM Z20616A 1 large amber bead, 1 stone bead, 1 calcite bead.
UM (?)Z20616A 32 medium-sized amber beads.
UM Z21316.2 4 amber beads.
UM Z21316.5 1 polychrome glass bead.

- **Roman coin pendants** *(2):*
UM Z16132.2 Copper-alloy.
UM Z20618 Copper-alloy.

- **Buckles** *(6):*

Ash 1909.267e Copper-alloy (small oval loop). MacGregor and Bolick 1993, no 34.66.
UM Z20620 2 iron buckles (oval loops), one with copper-alloy plate.
UM Z20618 Copper-alloy buckle (D-shaped loop).
UM D1961.8a Copper-alloy (D-shaped loop).
UM D1961.9d Iron (oval loop).

- **Shoe-shaped rivet** *(1):*
Ash 1909.267c MacGregor and Bolick 1993, no 36.24.

- **Strap-end** *(1):*
BM 76.2–12.42

- **Girdle-hanger** *(1):*
Ash 1909.261 MacGregor and Bolick 1993, no 42.3.

- **Keys** *(3):*
BM 76.2–12.54
UM 1961.9e Iron ring and suspension loop from top of shaft, plus fragment of copper-alloy plate corroded in between them.
UM Z16349B Iron suspension loop from top of shaft.

- **Knives** *(5):*
BM 76.2–12.53 Curved-back
BM 76.2–12.64 Straight-backed
BM 76.2–12.65 Curved-back
UM 1961.9c Curved-back
UM Z16349A Curved-back

- **Rings/belt fittings** *(8):*
Ash 1909.255a Copper-alloy ring with head of iron suspension loop. MacGregor and Bolick 1993, no 54.7.
Ash 1909.255b Copper-alloy ring.
Ash 1909.256f 3 copper-alloy rings. See MacGregor and Bolick 1993, no 27.22.
Ash 1909.267f Copper-alloy ring.
Ash 1909.755b Copper-alloy ring (MacGregor and Bolick 1993, no 54.17 but not in Ashmolean catalogue).
UM Z43388.1 Cast copper-alloy ring.
UM Z43388.2 Copper-alloy slip-knot ring.
UM Z16125A Cast copper-alloy belt ring.

- **Toilet equipment** *(2):*
Ash 1909.270e Ear scoop. MacGregor and Bolick 1993, no 37.18.
Ash 1909.270f Copper-alloy ring with ear scoop and other implements. MacGregor and Bolick 1993, no 37.3.

- **Shears** *(1):*
BM 76.2–12.55 (Not the pair illustrated in Smith 1868)

- **Wrist-clasps** *(min 9 pairs represented):*
Ash 1909.264 Form B19; 1 pair. MacGregor and Bolick 1993, no 29.33. Forms a set of 2 pairs with BM 76.2–12.40 and 41.
Ash 1909.276 Form B7; 1 pair and 1 half. MacGregor and Bolick 1993, nos 29.6 and 29.7.
Ash 1909.276 Form B13a; 1 catch piece. MacGregor and Bolick 1993, no 29.15.
Ash 1991.31 Gusset plate.
BM 76.2–12.40 and 41 Form B19; 1 pair. Forms a set of 2 pairs with Ash 1909.264.
UM Z16126 Form B7: embossed catch piece.
UM Z16126 Form B7: stamped and embossed hook piece.
UM Z16126 Form B7: 1½ pairs, embossed with fishbone ribbing.
UM Z16126 Form B15.
UM Z16126 Form B13a.
UM Z16126 Form B12.
UM Z20168 Form B7.

- **Bracelets** *(7–8):*
Ash 1909.260 Silver. MacGregor and Bolick 1993, no 26.13.
BM 76.2–12.31 Silver.
BM 76.2–12.32 Silver.
BM 76.2–12.33 Silver.
UM Z21322 Silver. Note reads 'other half is in the British Museum'.
UM Z21330 Fragments of 3 silver bracelets.

- **Finger rings** *(3–4):*
Ash 1909.260a Silver, spiral. MacGregor and Bolick 1993, no 27.6.
Ash 1909.267b Copper-alloy, spiral. MacGregor and Bolick 1993, no 27.9.
UM Z21316.4 Silver, spiral, with finger bone.
UM Z43388.2 Uncertain. Copper-alloy slip-knot ring, inner diameter 16mm.

- **Ivory ring** *(1):*
Ash 1909.257a

- **Tweezers** *(3):*
Ash 1909.269 MacGregor and Bolick 1993, no 38.9.
Ash 1909.270d MacGregor and Bolick 1993, no 38.22.
UM Z20618

- **Stud** *(1):*
Ash 1909.256d Copper-alloy. MacGregor and Bolick 1993, no 47.30.

- **Pottery** *(5 vessels):*
Ash 1909.277 Small, plain grey-black accessory vessel.
BM 76,2–12.67 Faceted carinated bowl.
UM Z16086a Plain biconical urn.
UM Z21359 Small biconical urn. Stamped and standing arch decoration.

UM Z21360 Small, plain black accessory vessel.

- **Wooden vessel rim mount** *(1):*
  BM 76.2–12.75

- **Metal-bound wooden buckets***:*
  BM 76.2–12.76 Copper-alloy binding strips.
  BM 76.2–12.77 Copper-alloy binding strips.
  UM Z16084 Handle and hoops from iron-bound bucket. Minimum diameter 230mm.
  UM Z21236 Copper-alloy-bound bucket with original wood (Fig 5.10).

- **Comb** *(1):*
  UM Z20616b Double-sided composite comb fragment. Note that Wilkinson (in Smith 1868) records a fragment of a comb in grave 15.

- **Spindle whorls** *(7):*
  Ash 1909.256 2 stone spindle whorls
  Ash 1909.274 Bone/antler
  Ash 1927.5965b Stone
  Ash 1927.5965c Stone
  Ash 1927.5965d Stone
  Ash 1927.5965e Stone

- **Pin-beaters** *(2):*
  Ash 1909.257b
  Ash 1927.6508d (uncertain)

- **Roman coins** *(not perforated as pendant) (6):*
  BM 76.2–12.73 Copper-alloy.
  UM Z16123 5 coins, all copper-alloy. 2 unidentified; 1 Constantine (306–337)?, SOLIIN-VICTO COMITI; 1 Antoninianus (late 3rd century); 1 Constantius II (323–361)?

- **Bell** *(2):*
  Ash 1909.256b MacGregor and Bolick 1993, no 56.1.
  Ash 1909.256c MacGregor and Bolick 1993, no 56.2.

- **Spearheads** *(14):*
  BM 76.2–12.49 Type E2 (possibly E3).
  BM 76.2–12.50 Type H2.
  BM 76.2–12.51 Type H2.
  BM 76.2–12.52 Unclassifiable.
  BM 76.2–12.56 Unclassifiable.
  BM 76.2–12.59 Type H3.
  BM 76.2–12.60 Type H2.
  BM 76.2–12.61 Type H2.
  BM 76.2–12.62 Type H2.
  BM 76.2–12.63 Type uncertain; possibly C1.
  UM D1961.9b Type H2.
  UM Z16083a Type uncertain; possibly C3.
  UM Z16083b Type H1.
  UM Z16083c Type uncertain; E2 or E3.

- **Shield bosses** *(4):*
  BM 76.2–12.47 Group 1.1.
  BM 76.2–12.66 Unclassifiable.
  UM D1961.9a Group 1.1. With grip (see below).
  UM Z43427 Group 4.

- **Shield grips** *(2):*
  BM 76.2–12.48
  UM D1961.9a

- **Shield stud** *(1):*
  UM Z21316.1

- **Swords** *(2):*
  BM 76.2–12.46 With mineral-preserved horn on the hilt and wood from the scabbard.
  BM 80.8–9.1

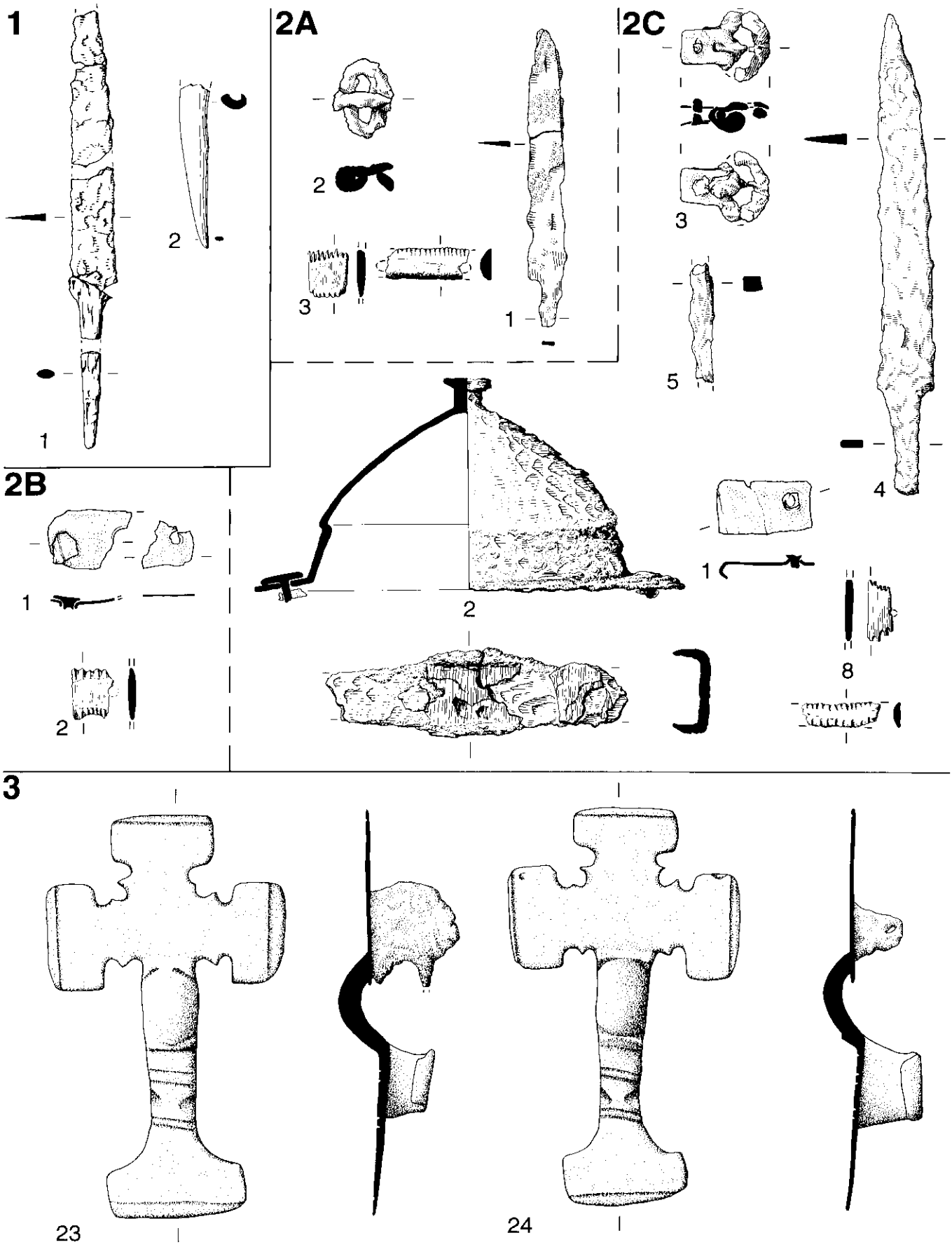


Figure 3.30 Objects from graves ***1, 2A, 2B, 2C,*** *and* ***3*** *(Scale* ***2B*** *1;* ***2C*** *1;* ***3*** *23, 24 at 1:1 and* ***1*** *1, 2;* ***2A*** *1–3;* ***2B*** *2;* ***2C*** *2–5, 8 at 1:2)*

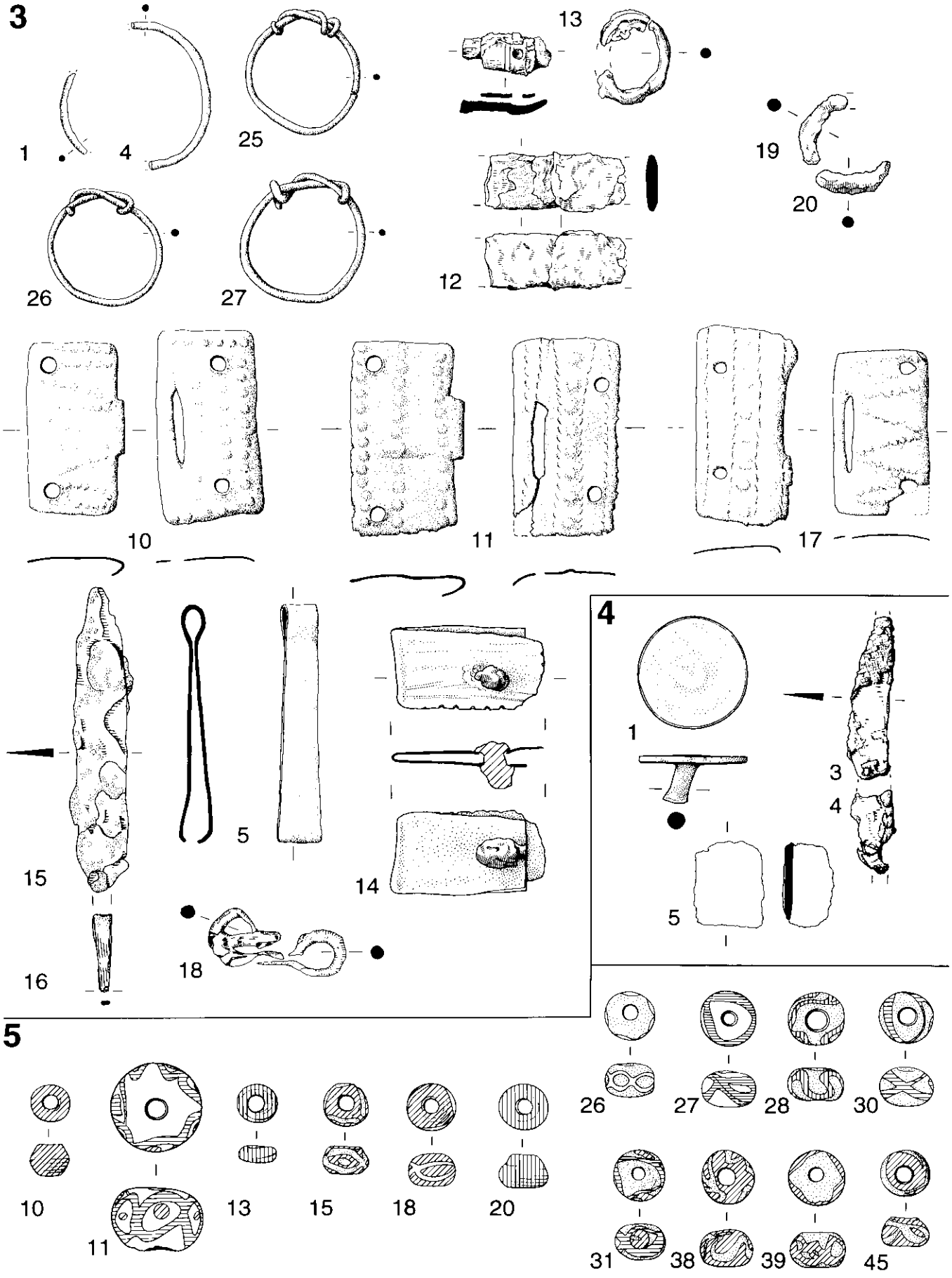


*Figure 3.31 Objects from graves **3**, **4**, and **5** (Scale **3** 1, 4, 5, 10, 11, 14, 17, 25–27; **4** 1; **5** 10, 11, 13, 15, 18, 20, 26–28, 30, 31, 38, 39, 45 at 1:1 and **3** 12, 13, 15, 16, 18–20; **4** 3–5 at 1:2)*

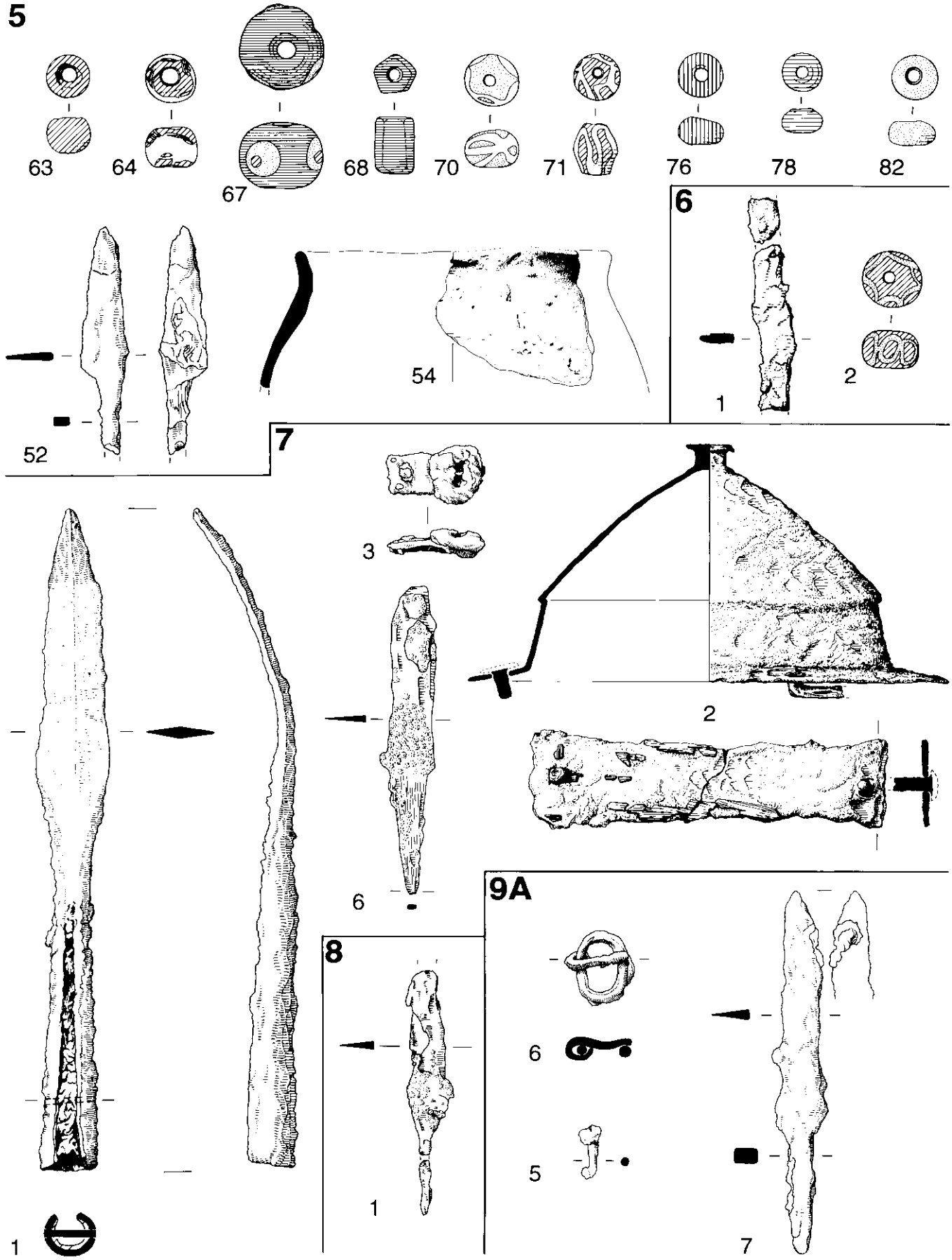


*Figure 3.32 Objects from graves **5**, **6**, **7**, **8**, and **9A** (Scale **5** 63, 64, 67, 68, 70, 71, 76, 78, 82; **6** 2 at 1:1, **5** 52; **6** 1; **7** 1–3, 6; **8** 1; **9A** 5–7 at 1:2 and **5** 54 at 1:3)*

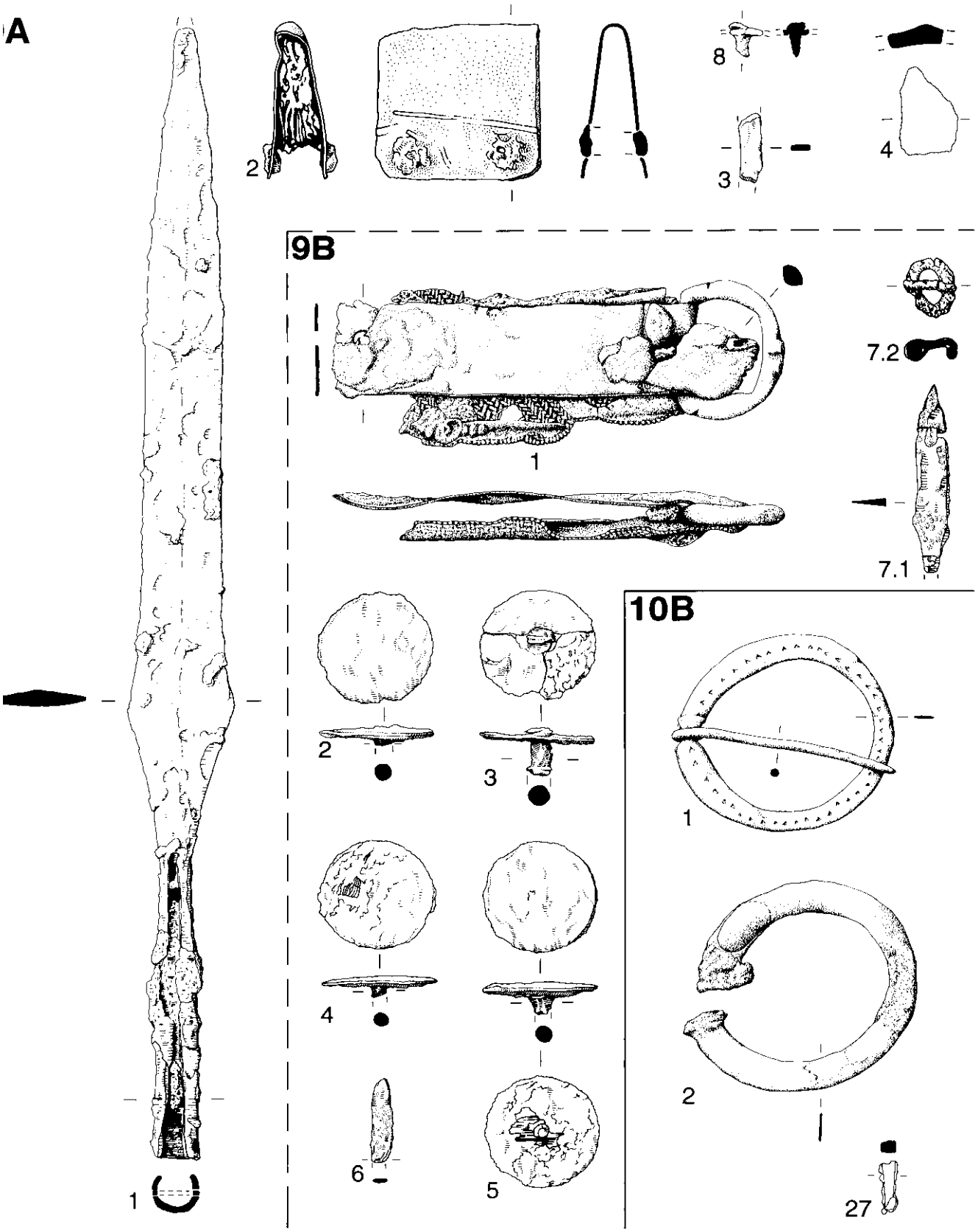


*Figure 3.33 Objects from graves **9A**, **9B**, and **10** (Scale **9A** 2; **9B** 1; **10** 1, 2 at 1:1 and **9A** 1, 3, 4, 8; **9B** 2–7; **10** 27 at 1:2)*

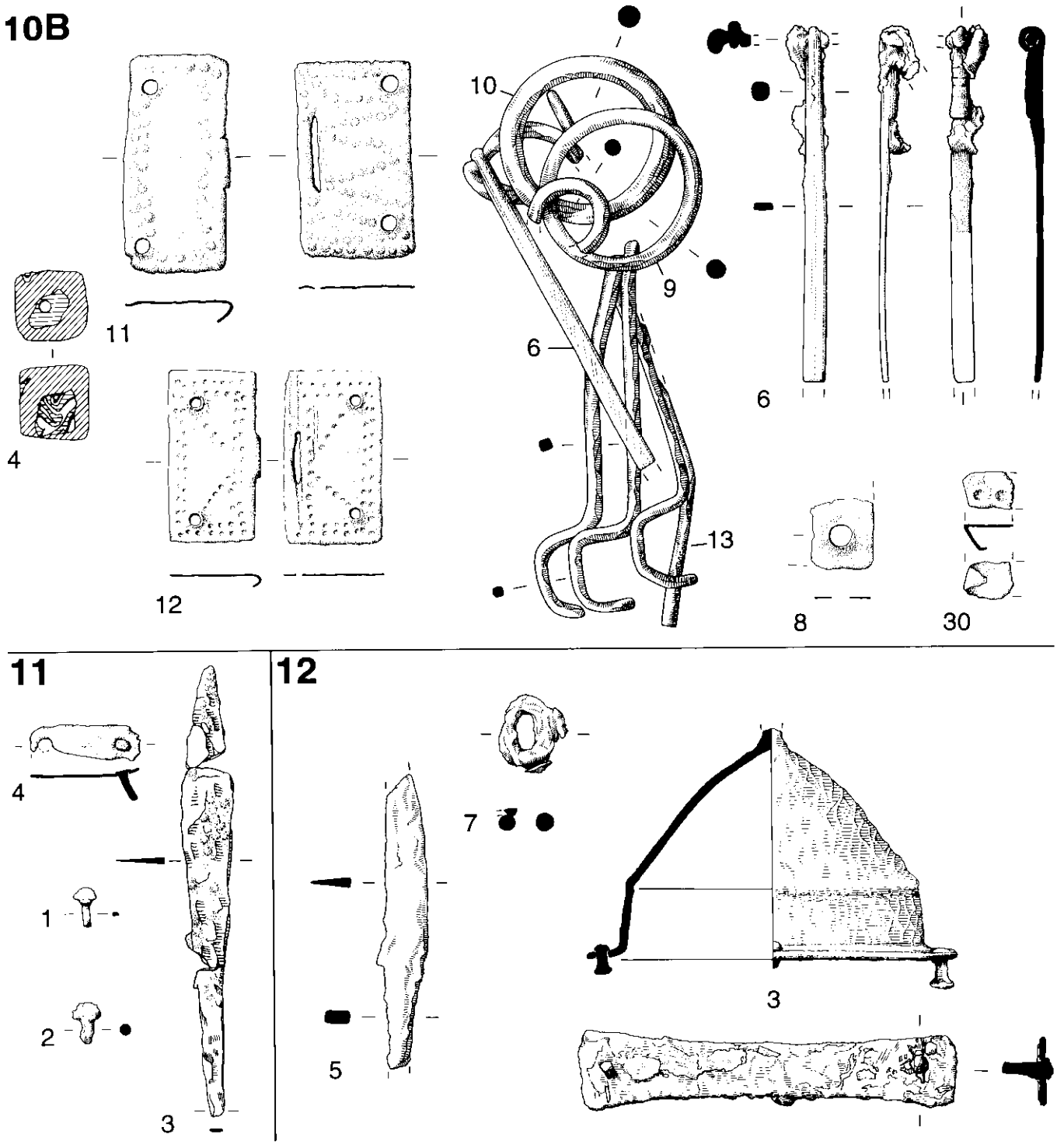


*Figure 3.34 Objects from graves **10**, **11**, and **12** (Scale **10** 4, 8, 11, 12, 30; **11** 4 at 1:1 and **10** 6, 9, 10; **11** 1–3; **12** 3, 5, 7 at 1:2)*

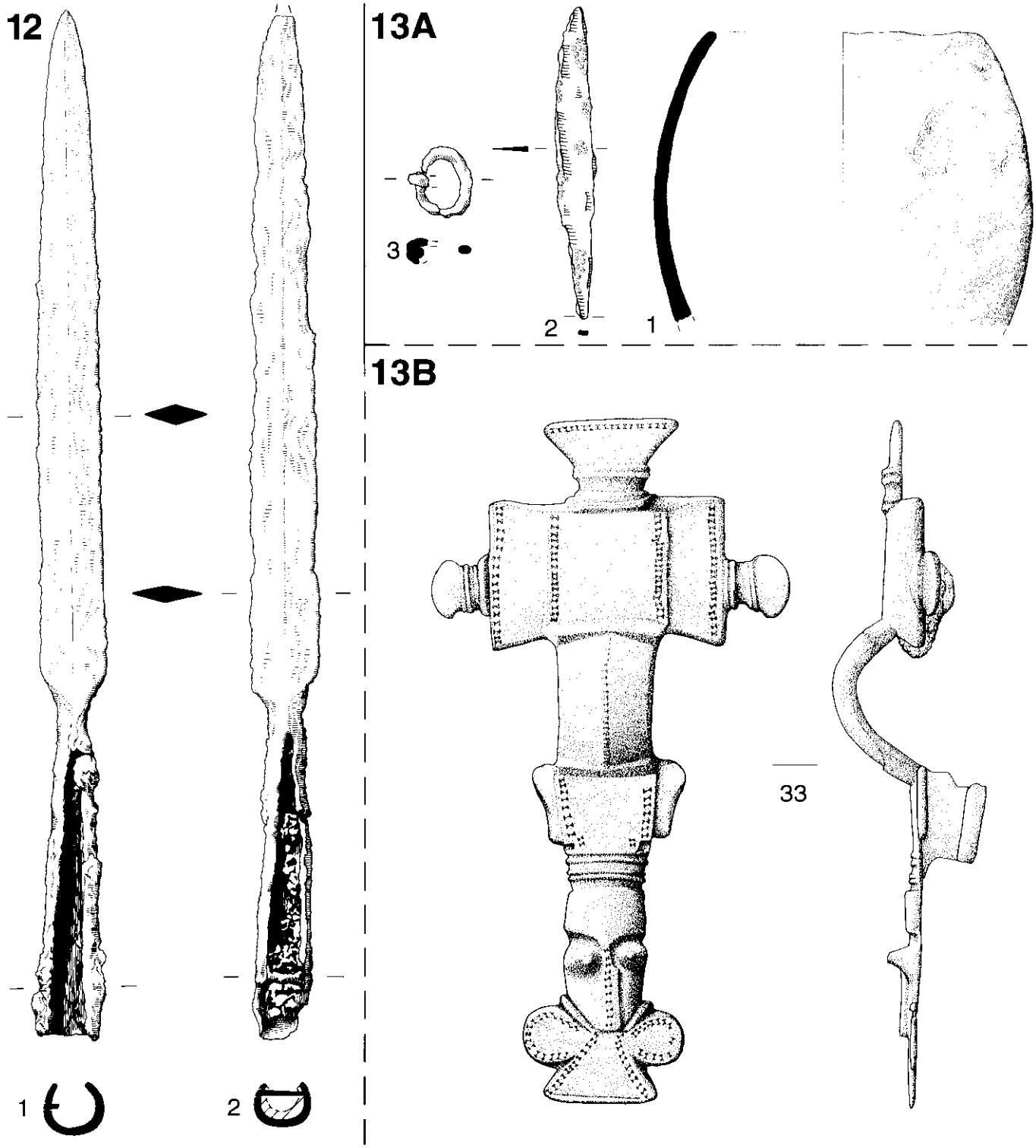


*Figure 3.35 Objects from graves **12**, **13A**, and **13B** (Scale **13B** 33 at 1:1, **12** 1, 2 **13A** 2–3 at 1:2, and **13A** 1 at 1:3)*

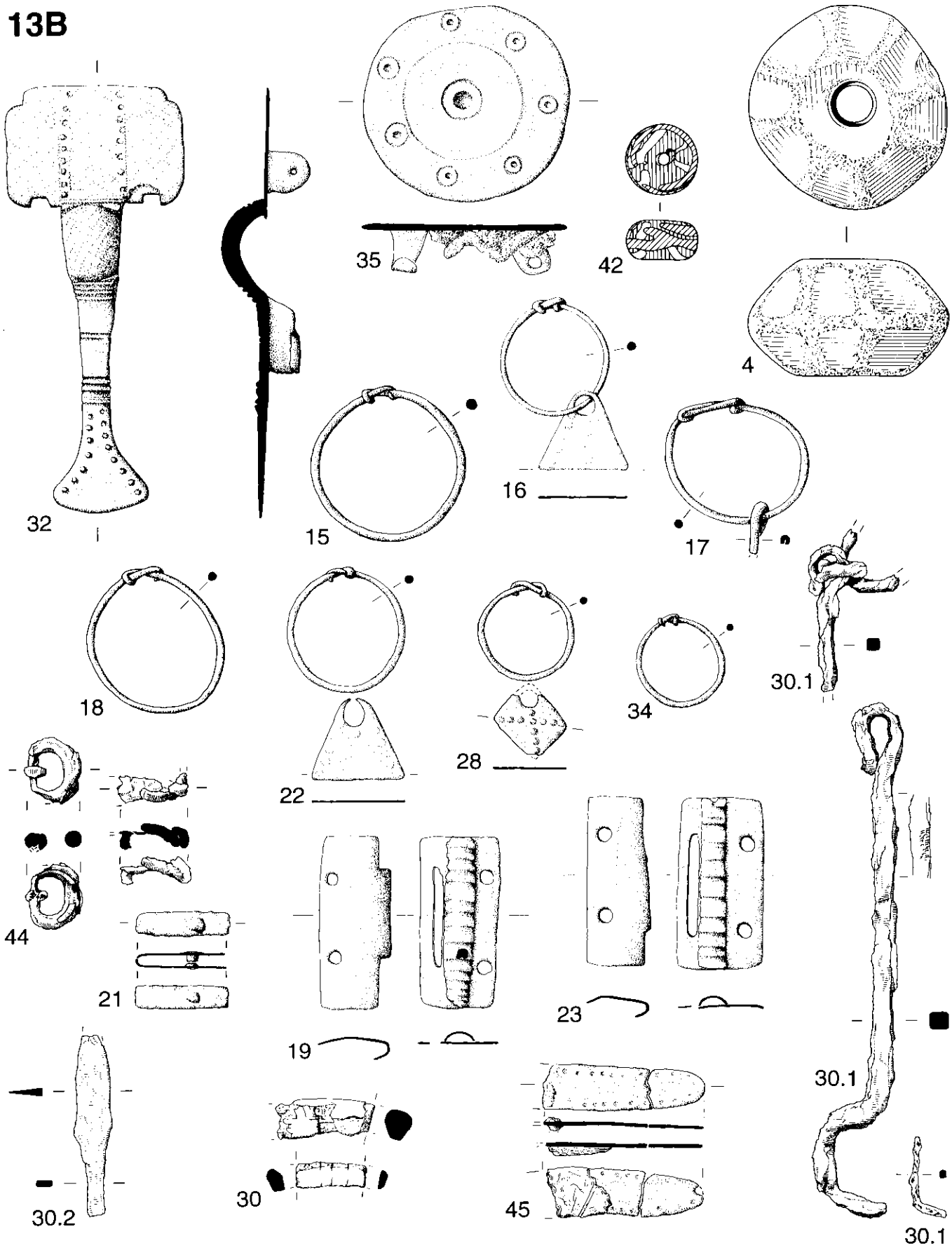


*Figure 3.36 Objects from grave **13B** (Scale 1:1 except 30, 30.1, 30.2, 44 at 1:2)*

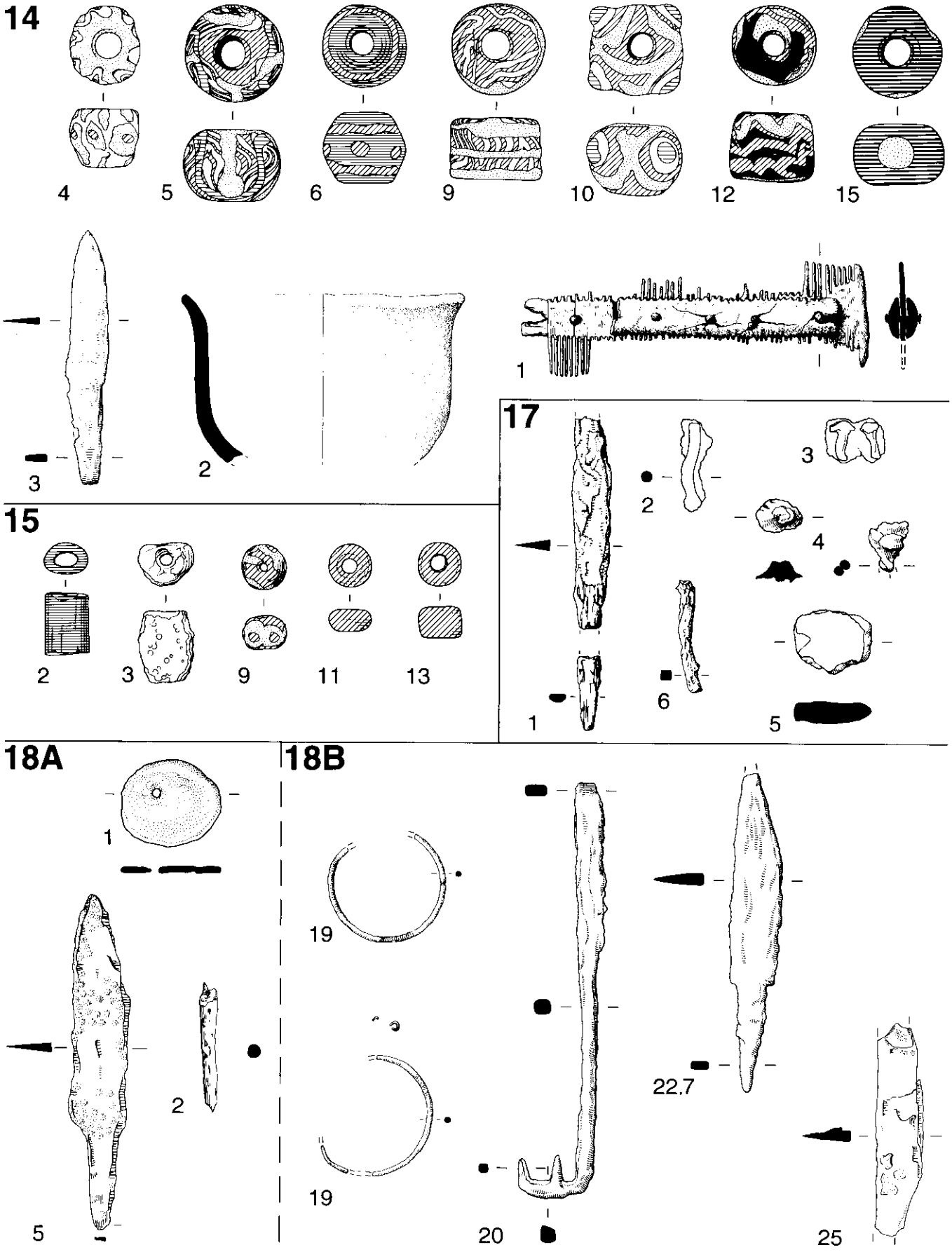


Figure 3.37 Objects from graves ***14***, ***15***, ***17***, ***18A***, *and* ***18B*** *(Scale 1:1 except* ***14*** *1, 3;* ***17*** *1–6;* ***18A*** *2, 5;* ***18B*** *20, 22.7, 25 at 1:2 and* ***14*** *2 at 1:3)*

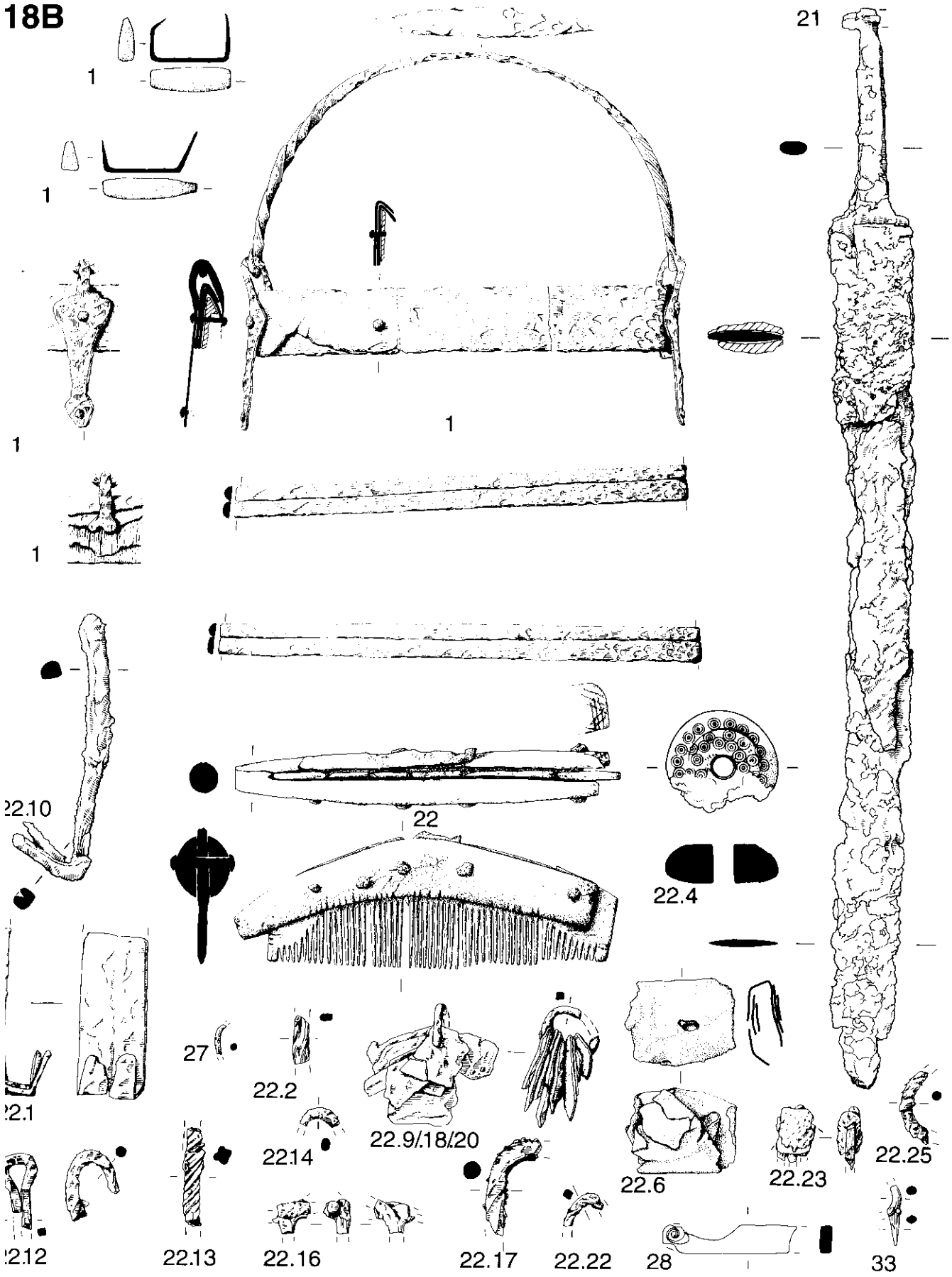


*Figure 3.38 Objects from grave **18B** (Scale 1:2 except 1(-staples), 22.6 at 1:1 and 1(-bucket), 21 at 1:3)*
NB 21 should have an additional fragment (36, not illustrated) continuing from tip of sword for a further 115mm

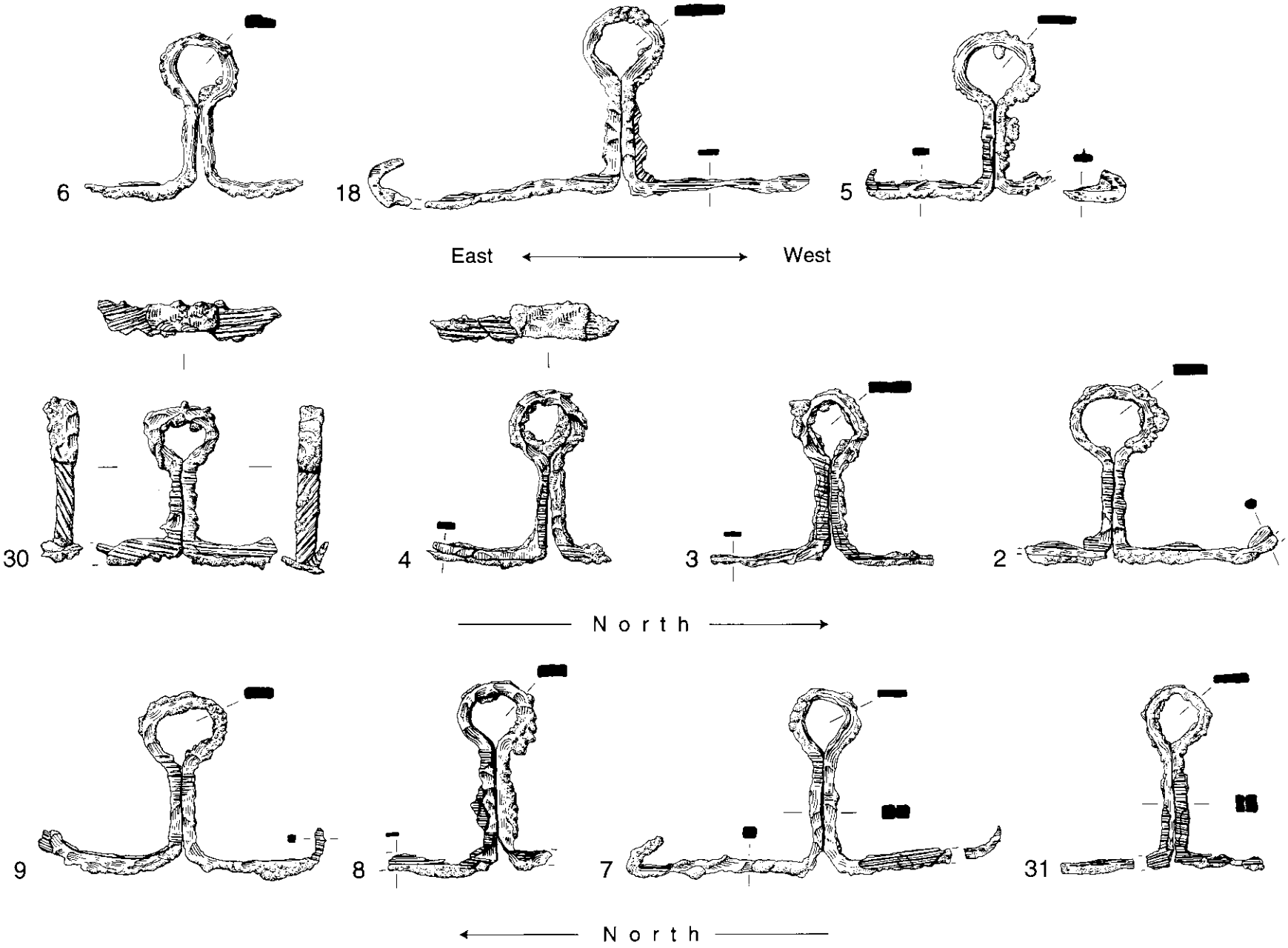


*Figure 3.39 Eyelets from grave **18B** (Scale 1:2)*

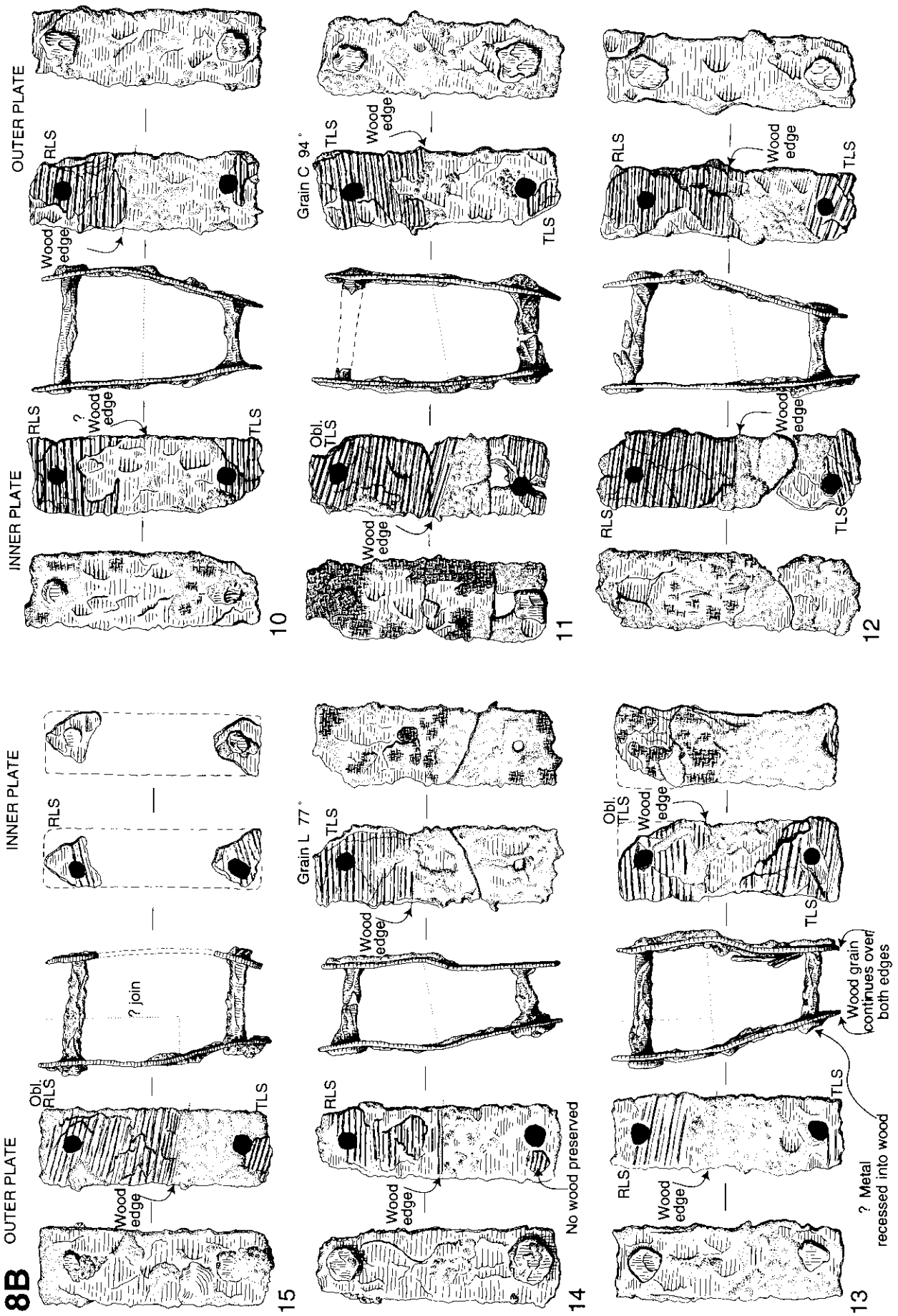


*Figure 3.40 Cleats from grave **18B** 10, 11, 12 from east side of grave, 13, 14, 15 from west side of grave (Scale 1:2)*

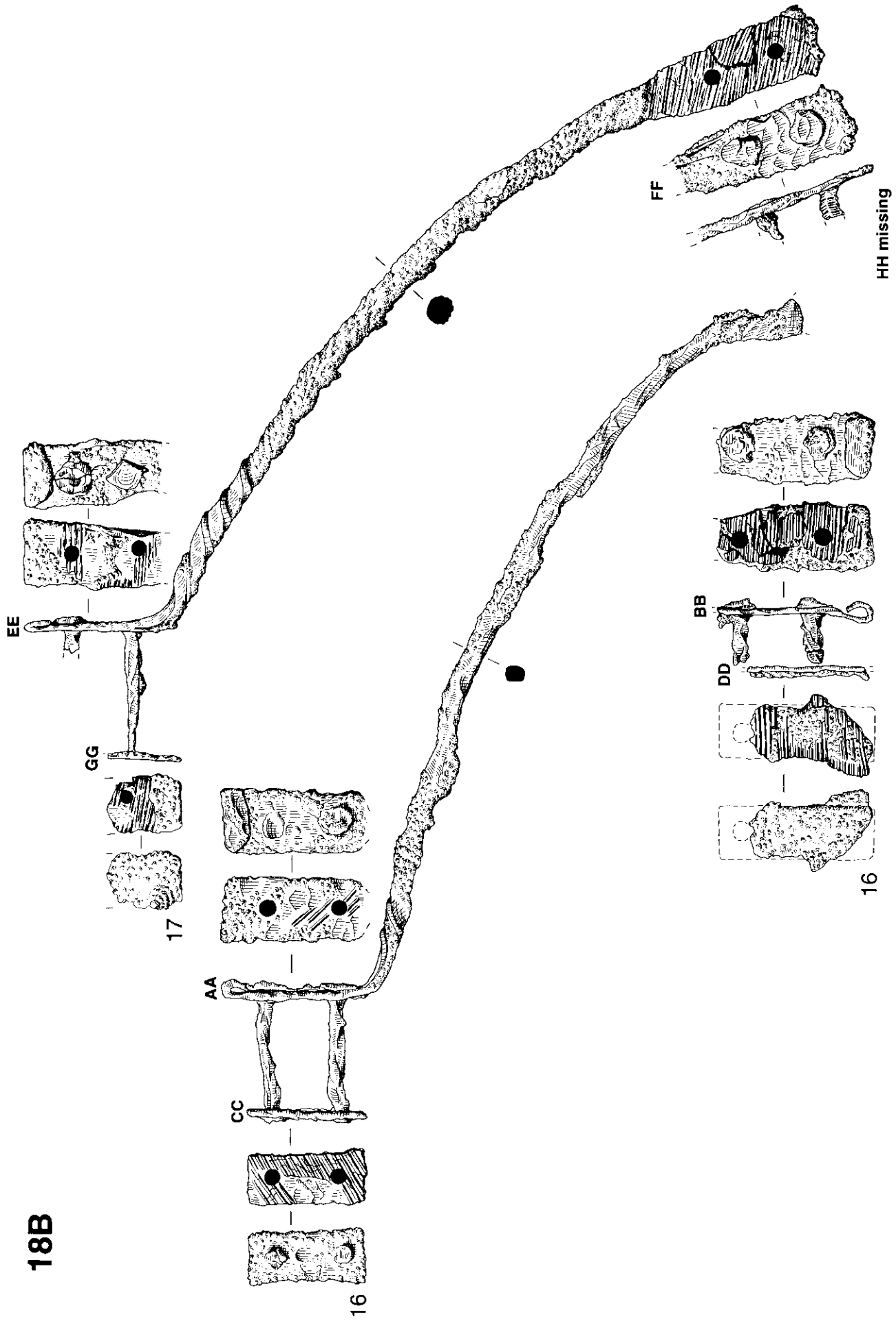


*Figure 3.41 Bed stays from grave **18B** (Scale at 1:2)*

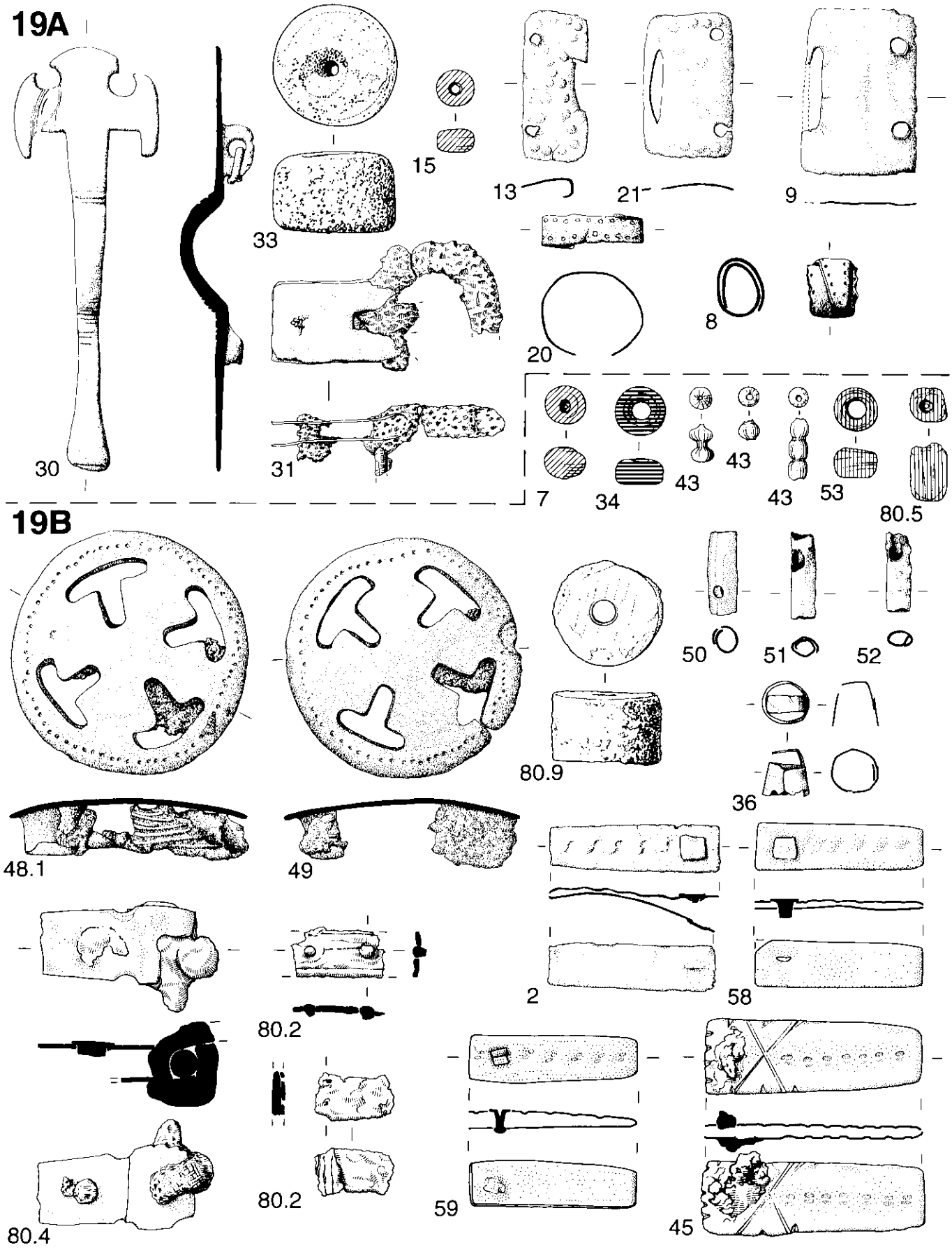


*Figure 3.42 Objects from graves **19A** and **19B** (Scale 1:1 except **19B** 80.2 and 80.4 at 1:2)*

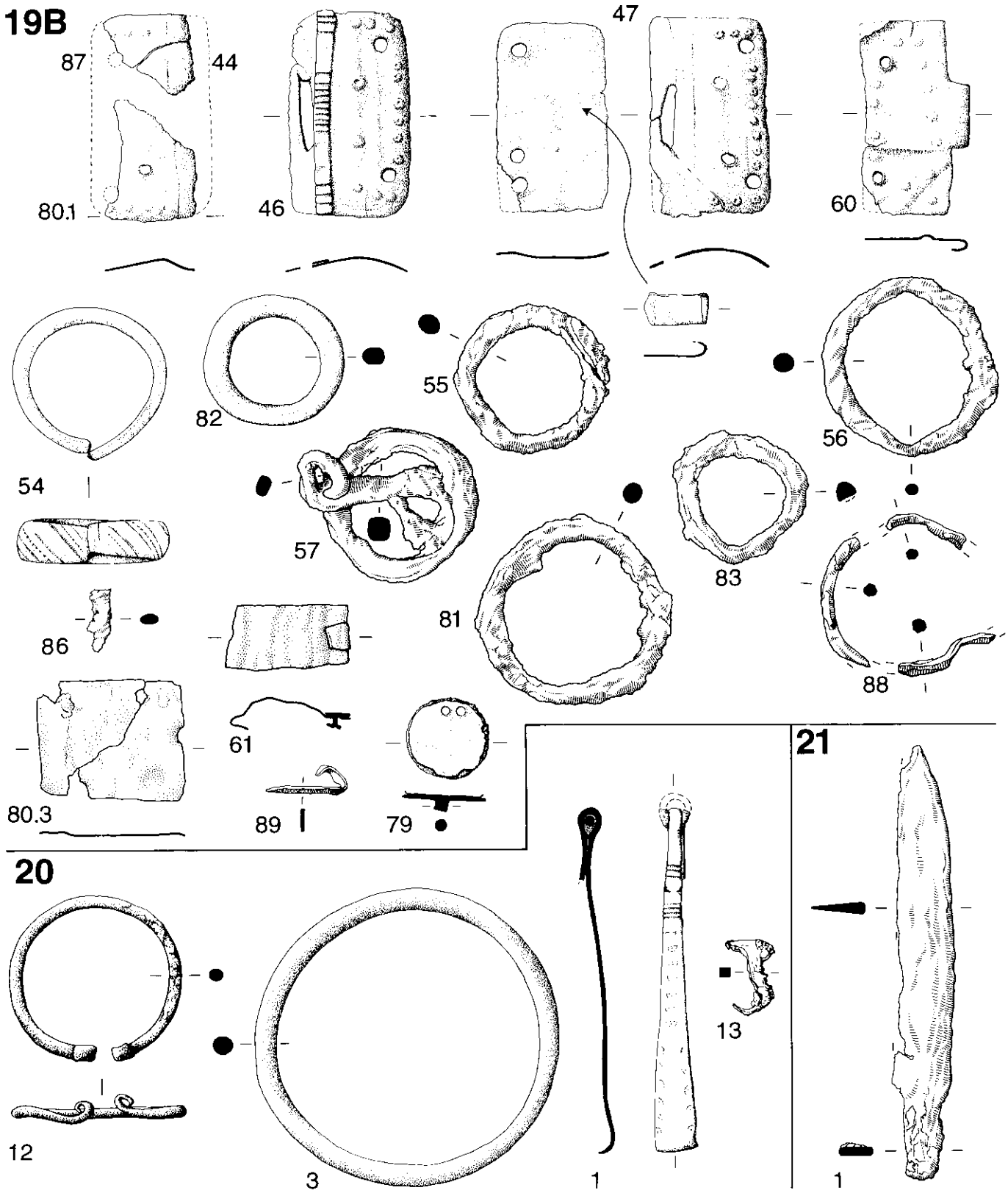


*Figure 3.43 Objects from graves **19B**, **20**, and **21** (Scale 1:1 except **19B** 55–57, 81, 83, 86, 88; **20** 13; **21** 1 at 1:2)*

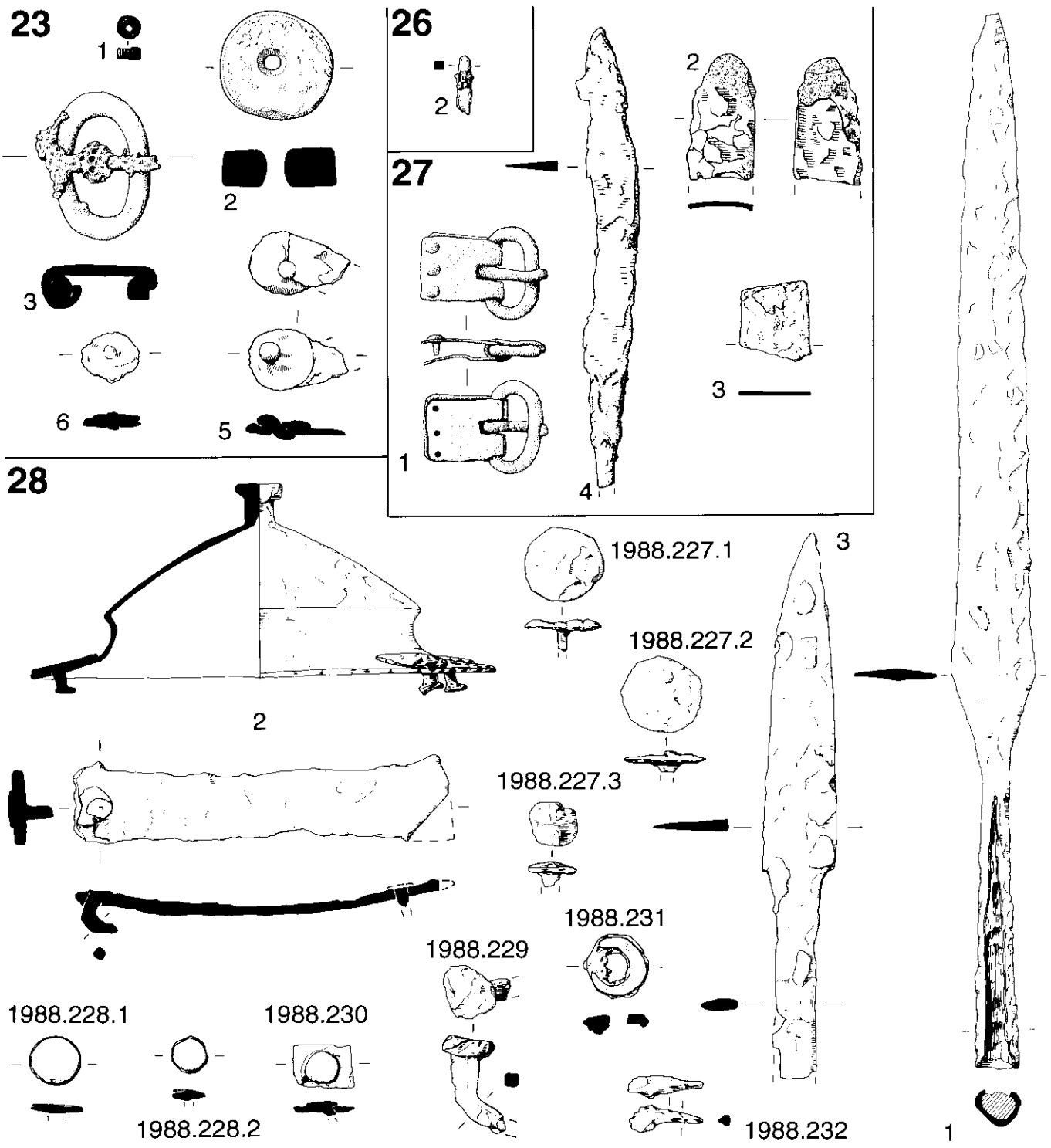


*Figure 3.44 Objects from graves **23**, **26**, **27**, and **28** (Scale 1:2 except **23** 1, 3 and **27** 1 at 1:1, and **28** 1 at 1:3)*

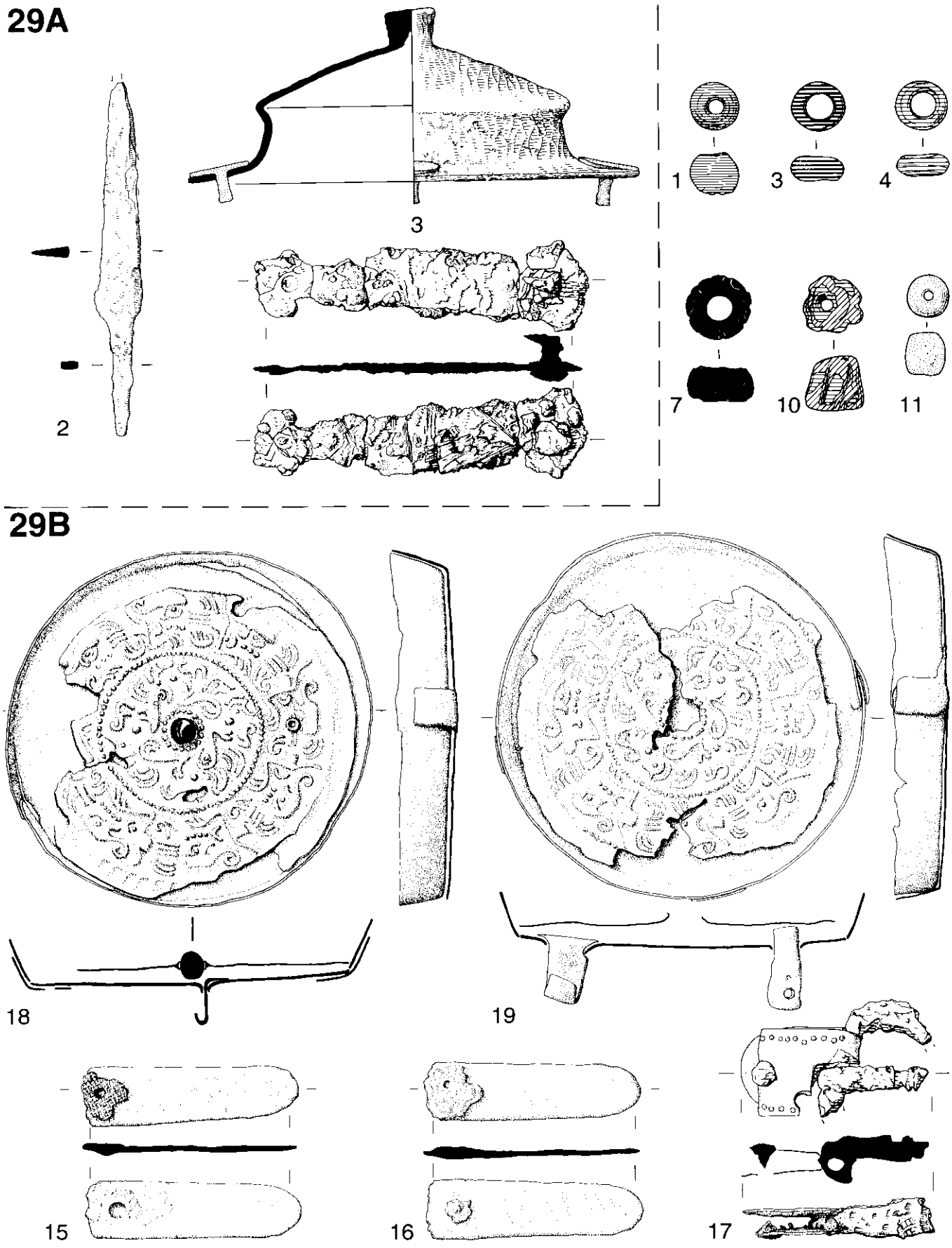


*Figure 3.45 Objects from graves **29A** and **29B** (Scale **29A** 1:2; **29B** at 1:1)*

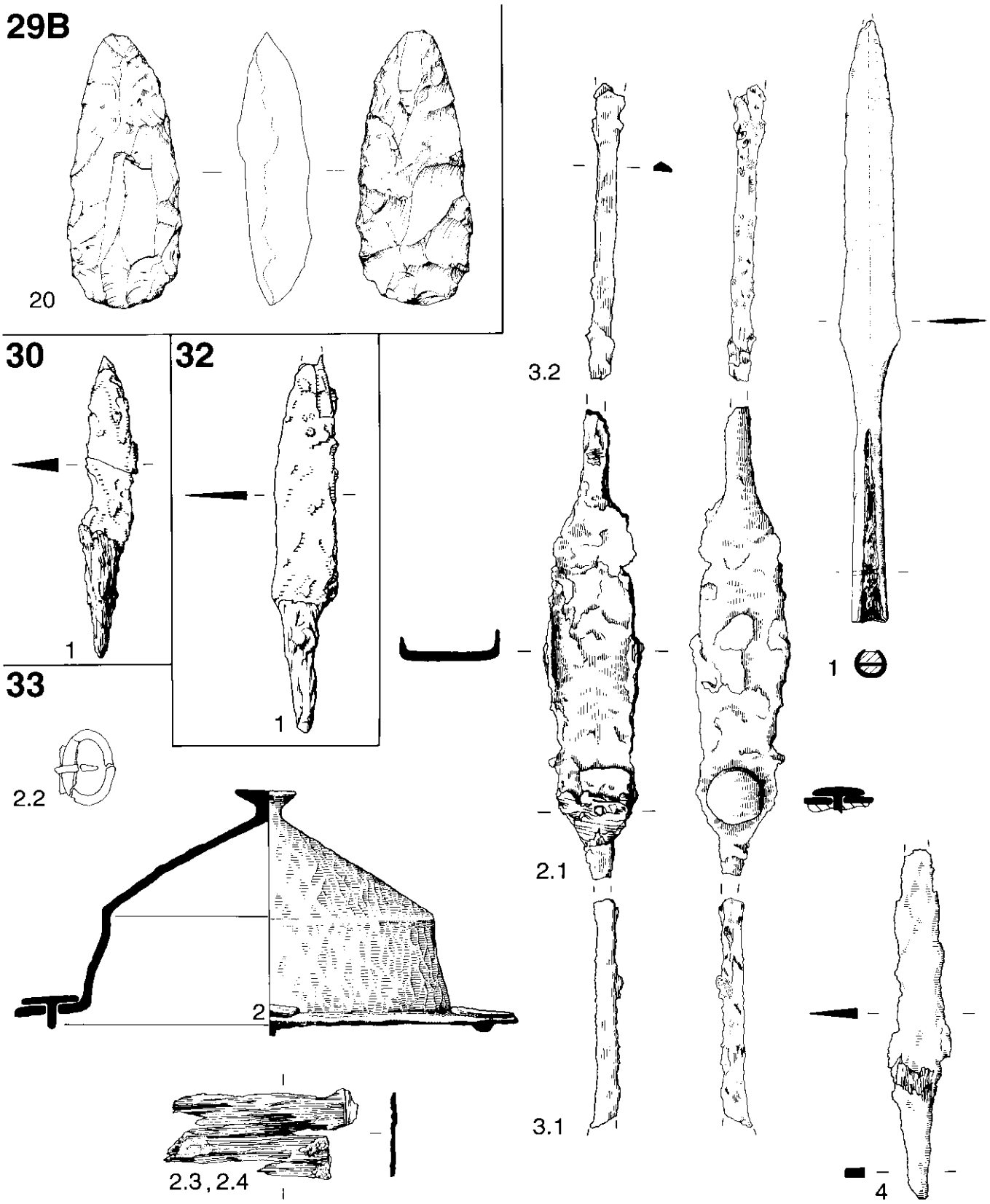


*Figure 3.46 Objects from graves **29B**, **30**, **32**, and **33** (Scale at 1:2, **33** 1 at 1:3)*

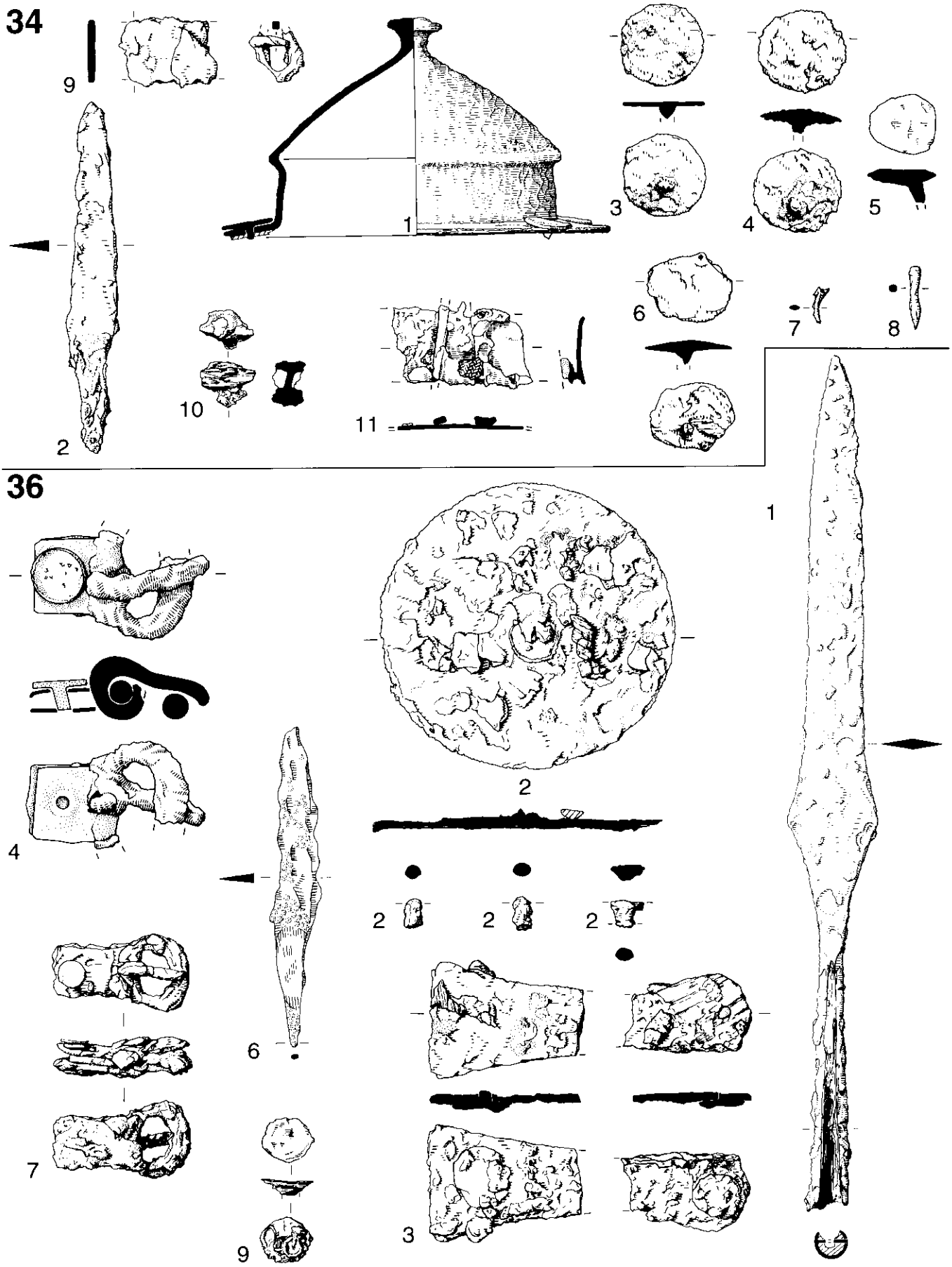


*Figure 3.47 Objects from graves **34** and **36** (Scale 1:2 except **36** 4 at 1:1, and **36** 1 at 1:3)*

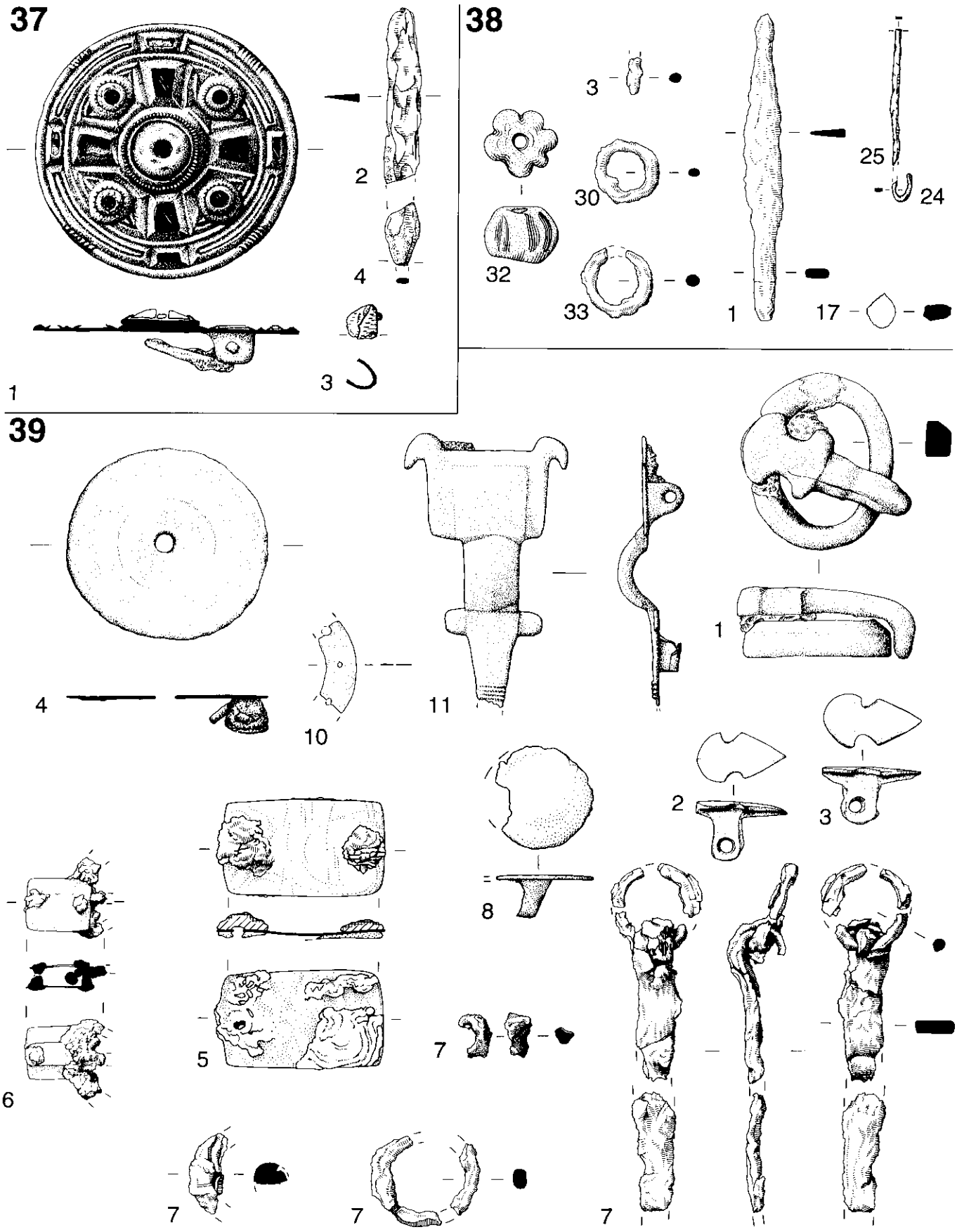


*Figure 3.48 Objects from graves **37**, **38**, and **39** (Scale **37** 1; **38** 32; **39** 1–6, 8, 10, 11 at 1:1 and **37** 2–4; **38** 1, 3, 17, 24, 25, 30, 33; **39** 7 at 1:2)*

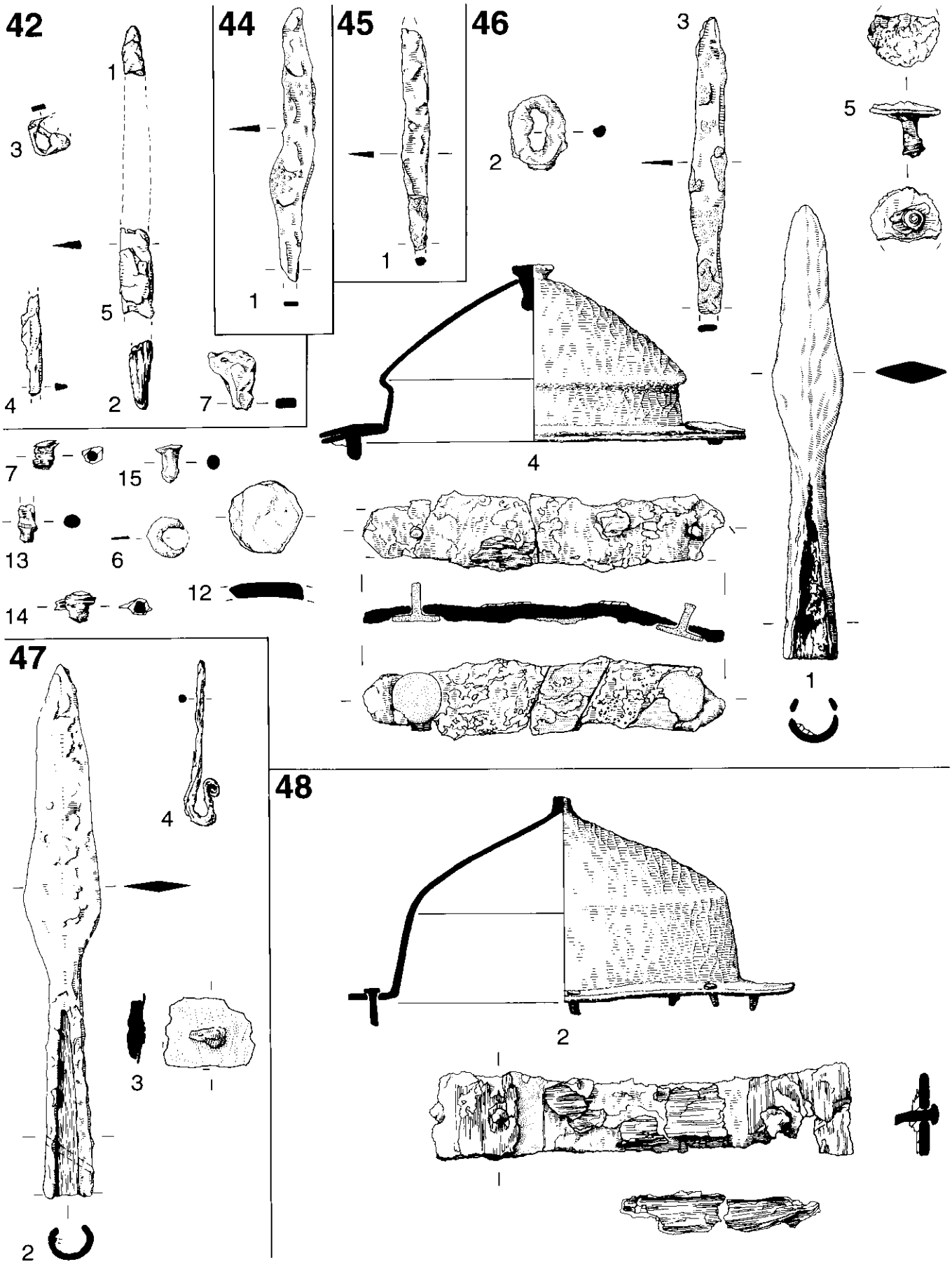


*Figure 3.49 Objects from graves **42**, **44**, **45**, **46**, **47**, and **48** (Scale 1:2 except **46** 6; **47** 3 at 1:1)*

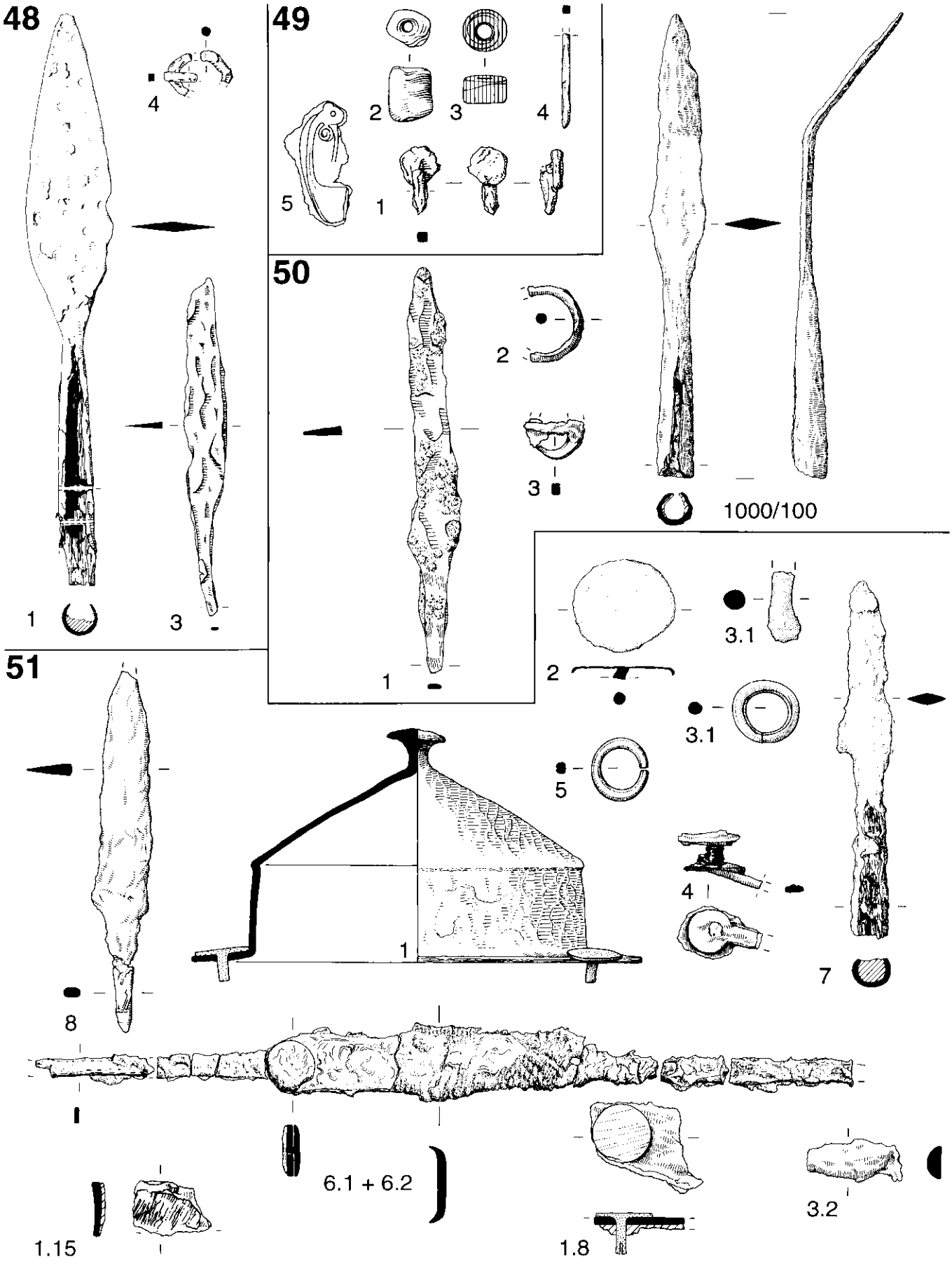


*Figure 3.50 Objects from graves **48**, **49**, **50**, and **51** (Scale 1:2 except **49** 2, 3; **51** 2, 3.1, 5 at 1:1 and **48** 1; **50** 1000/100; **51** 7 at 1:3)*

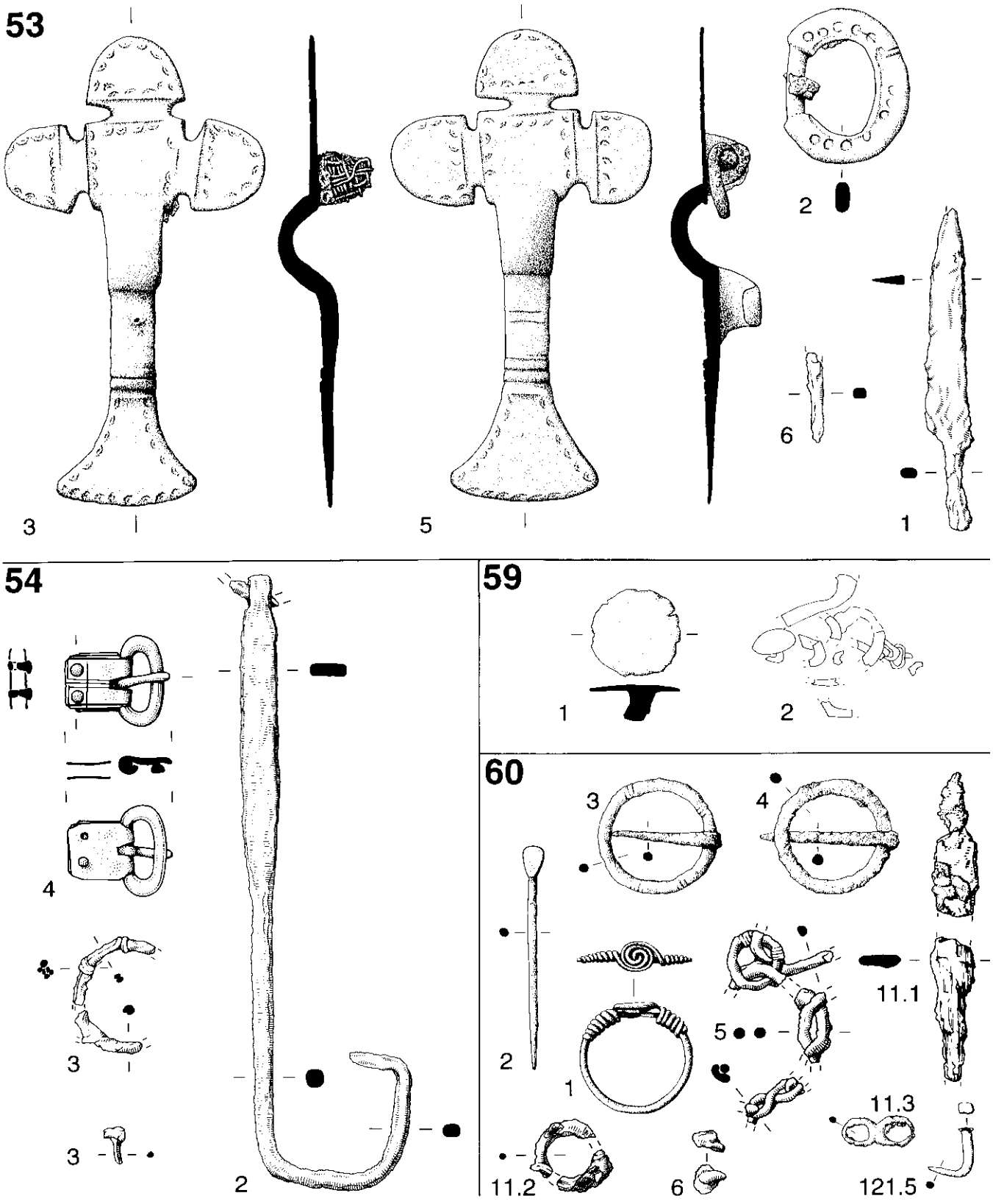


*Figure 3.51 Objects from graves **53**, **54**, **59**, and **60** (Scale **53** 3, 5, 2; **54** 4; **59** 1; **60** 1–4, 11.3 121.5 at 1:1 and **53** 1; **54** 2, 3; **59** 2; **60** 5, 6 11.1, 11.2 at 1:2 and **53** 6 at 1:3)*

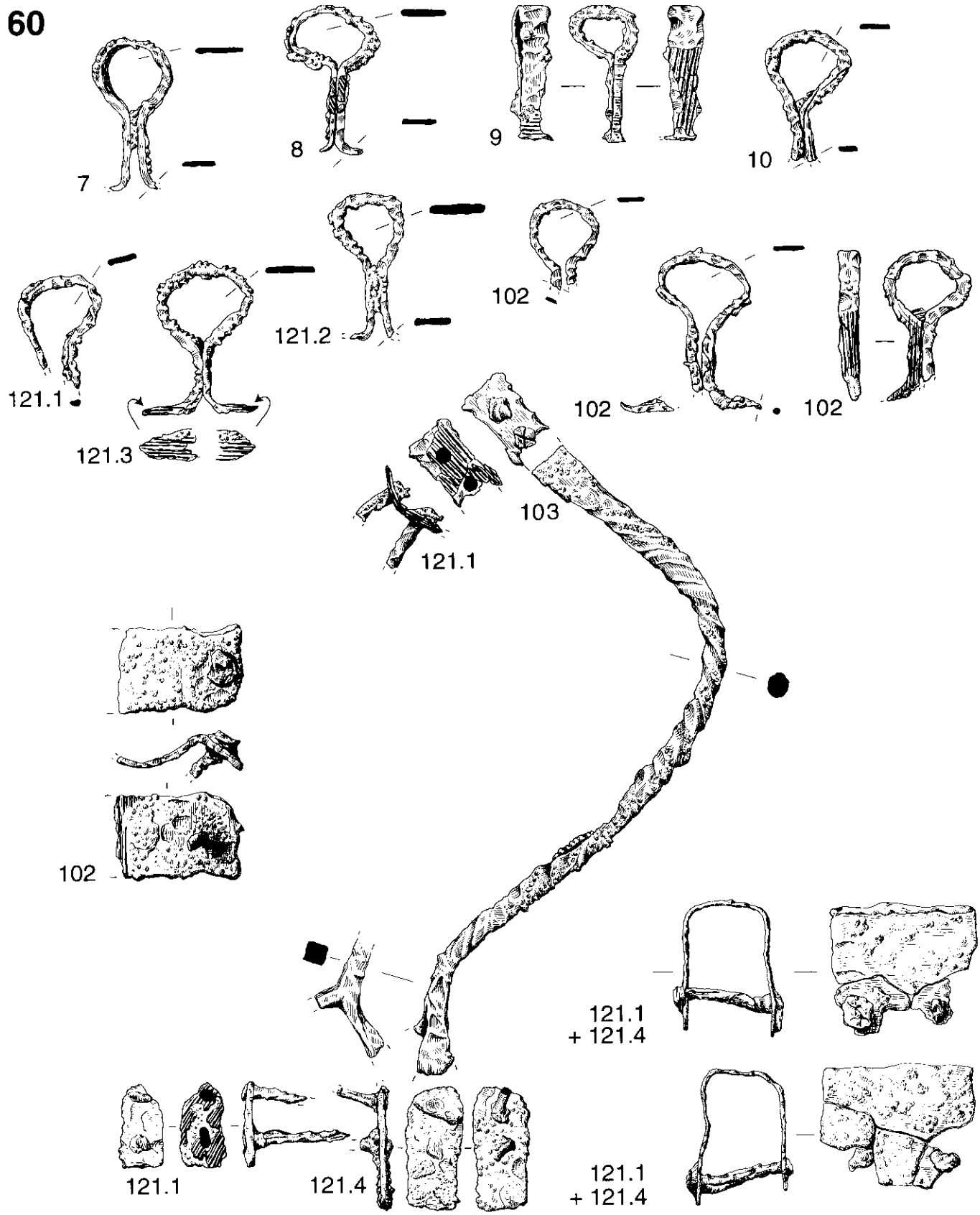


*Figure 3.52 Bed fittings from grave **60** (Scale 1:2)*

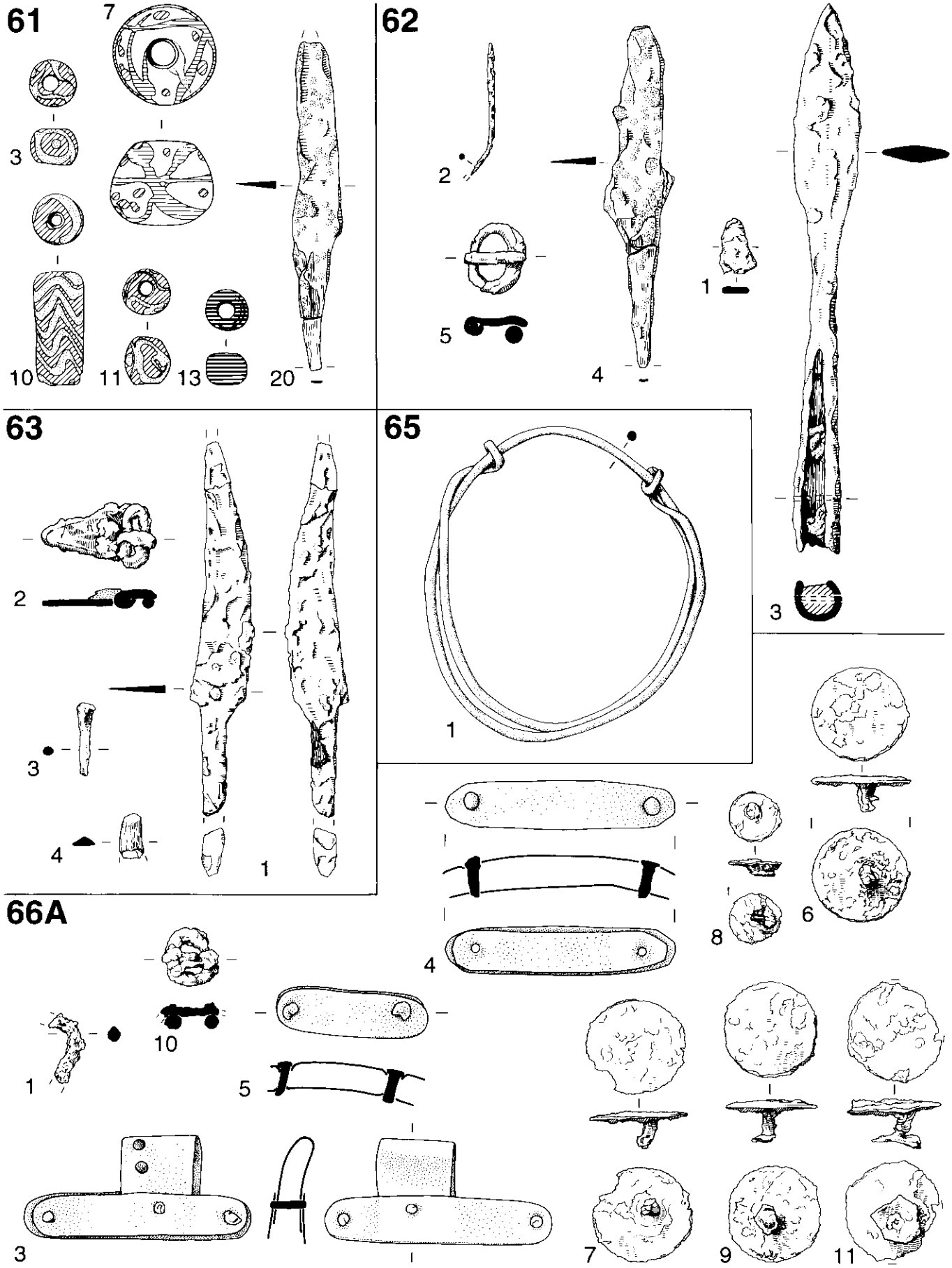


*Figure 3.53 Objects from graves **61**, **62**, **63**, **65**; and **66A** (Scale **61** 3, 7, 10, 11, 13; **65** 1 **66A** 3–5 at 1:1 and **61** 20; **62** 1–5; **63** 1–4; **66A** 1, 6–11 at 1:2)*

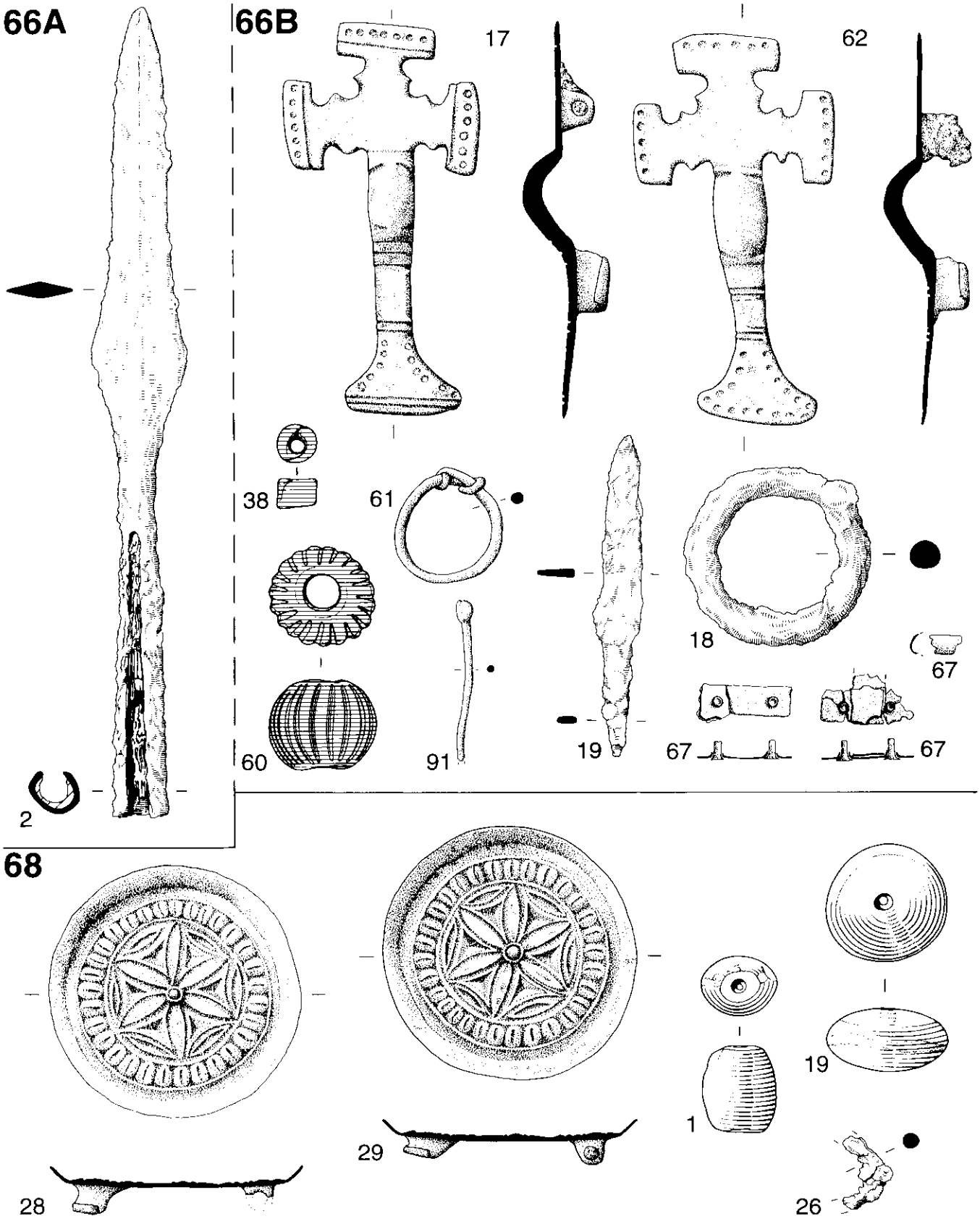


*Figure 3.54 Objects from graves **66A**, **66B**, and **68** (Scale **66B** 17, 38, 60, 61, 62, 67, 91; **68** 1, 19, 28, 29 at 1:1 and **66A** 2; **66B** 18, 19; **68** 26 at 1:2)*

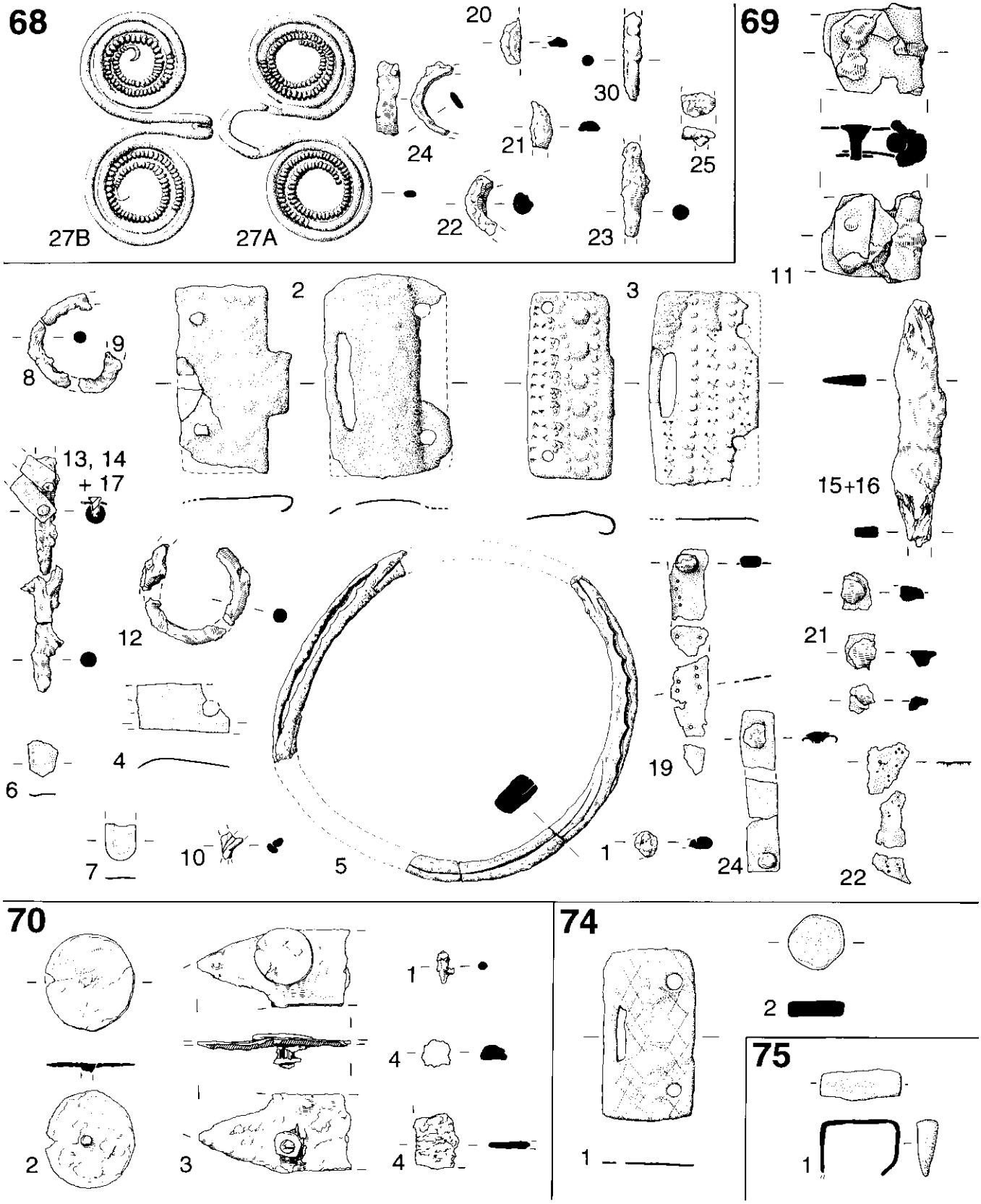


*Figure 3.55 Objects from graves **68**, **69**, **70**, **74**, and **75** (Scale 1:1 except **68** 20–25, 30; **69** 1, 5, 8–10, 12–17; **70** 1–4; **74** 2 at 1:2)*

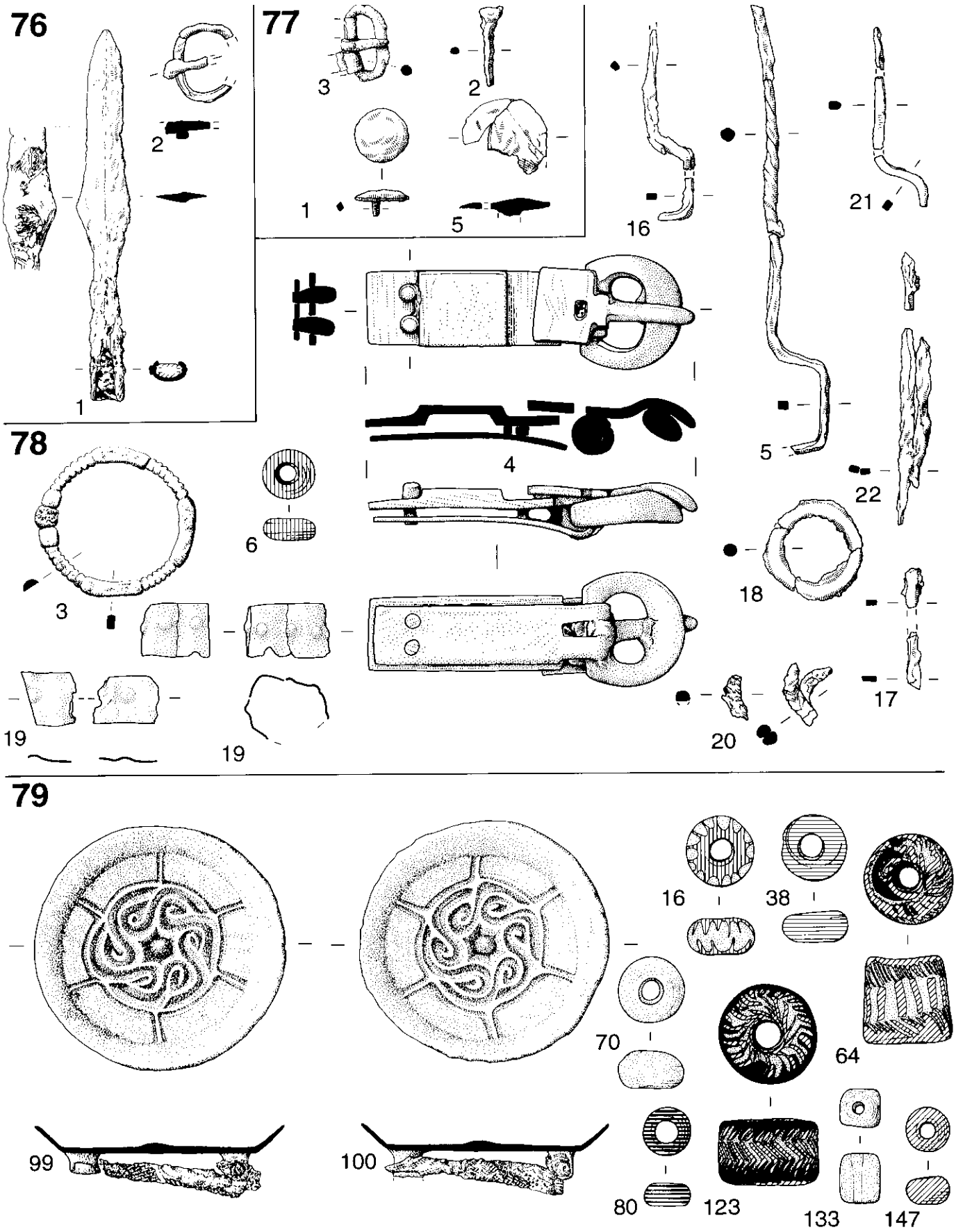


Figure 3.56 Objects from graves ***76****,* ***77****,* ***78****, and* ***79*** *(Scale 1:1 except* ***76*** *2;* ***77*** *1, 2, 5;* ***78*** *5, 16–18, 20–22 at 1:2 and* ***76*** *1 at 1:3)*

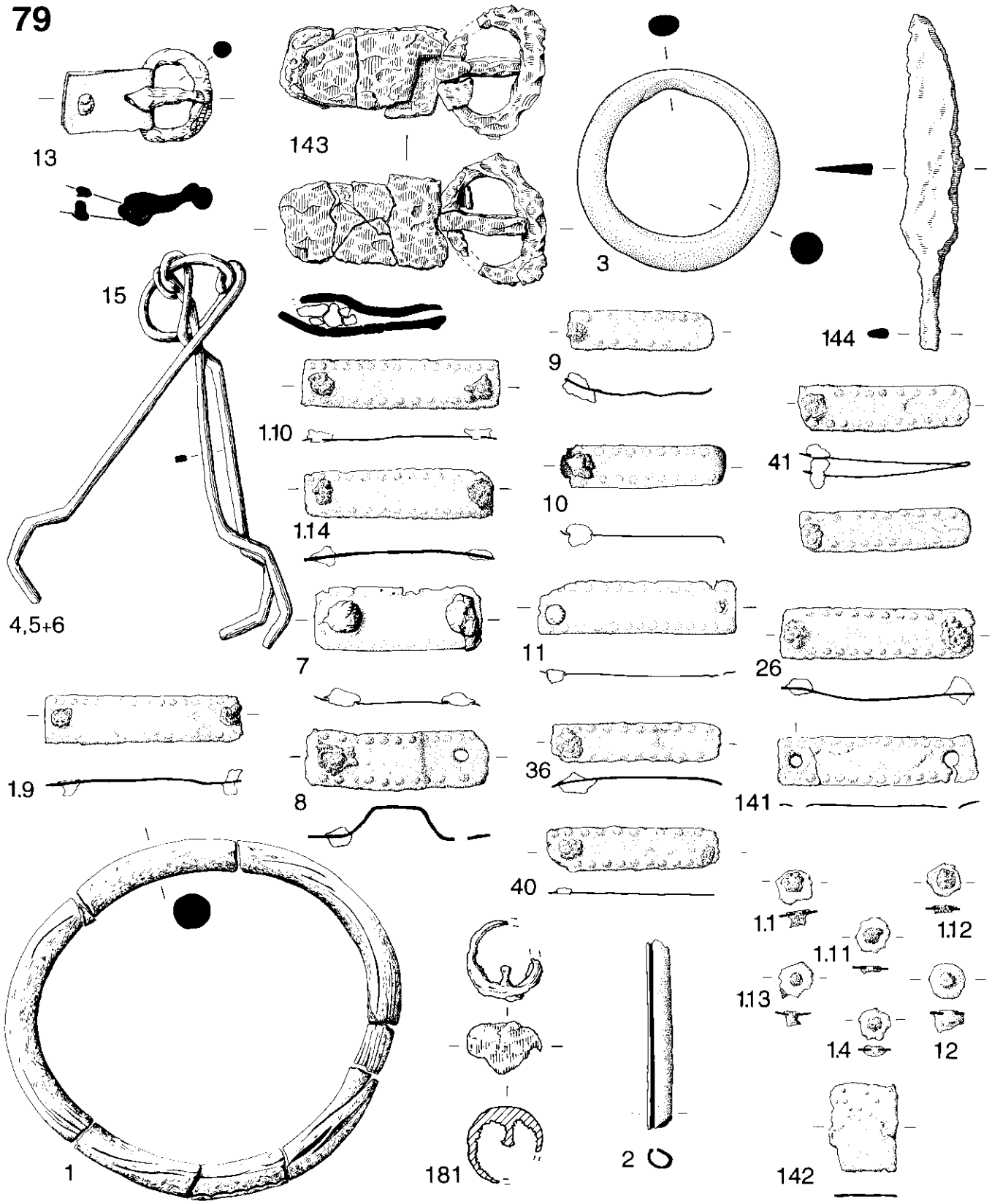


Figure 3.57 Objects from grave ***79*** *(Scale 1:1 except 1, 4–6, 142, 144 at 1:2)*

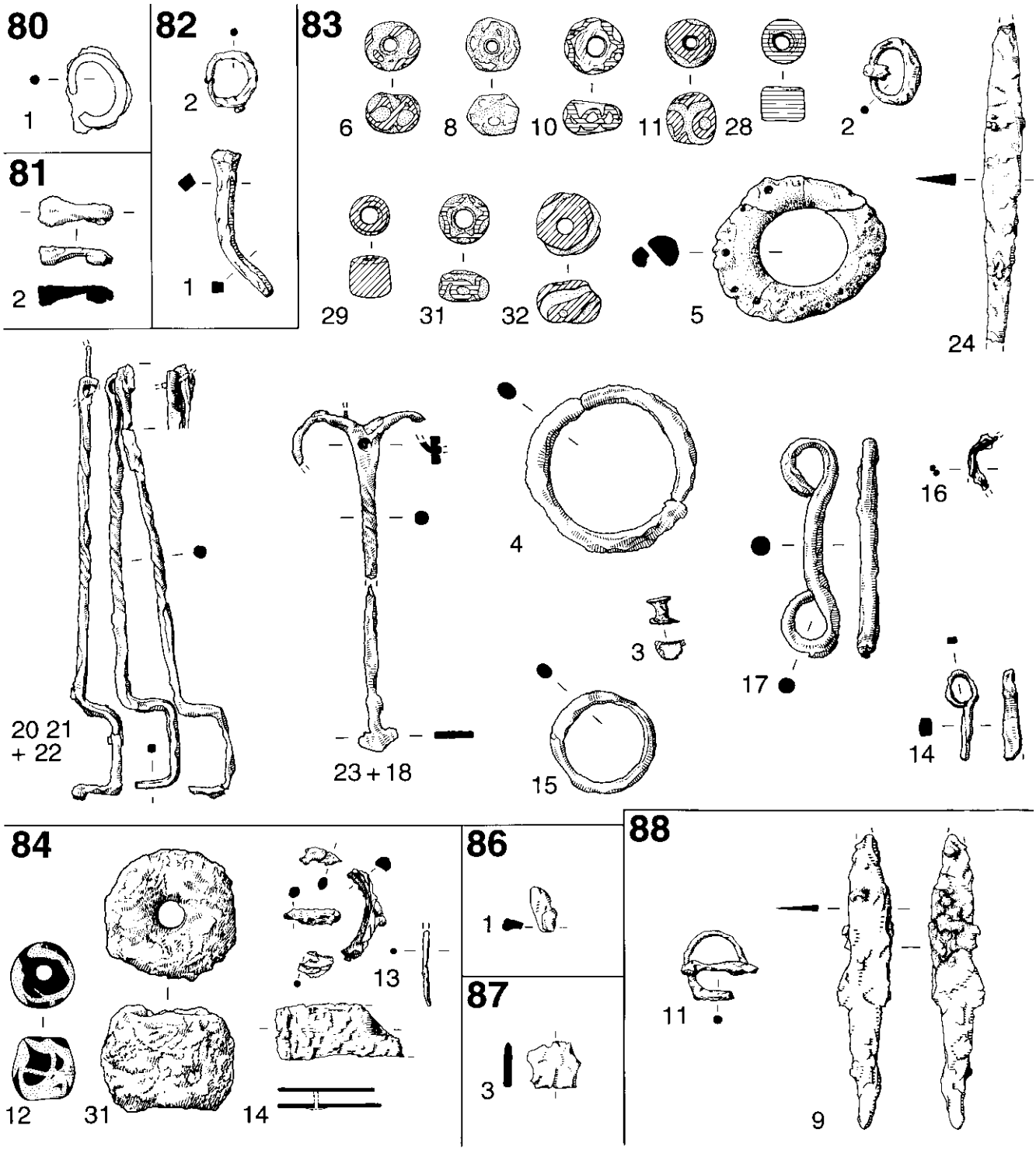


*Figure 3.58 Objects from graves **80**, **81**, **82**, **83**, **84**, **86**, **87**, and **88** (Scale 1:2 except **83** 6, 8, 10, 11, 28, 29, 31, 32; **84** 12, 31 at 1:1)*

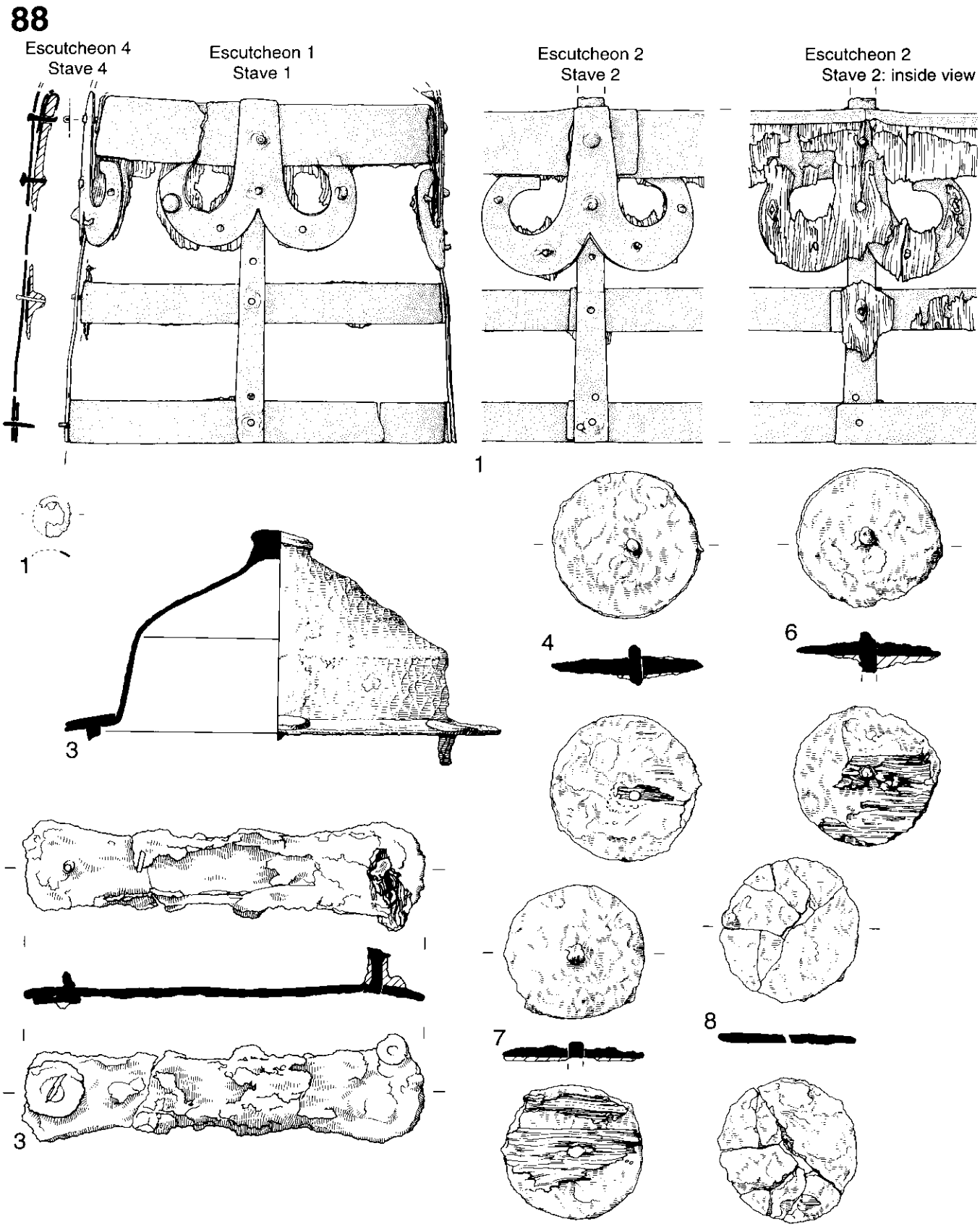


*Figure 3.59 Objects from grave **88** (Scale 1:2 except 1-stud fragment at 1:1)*

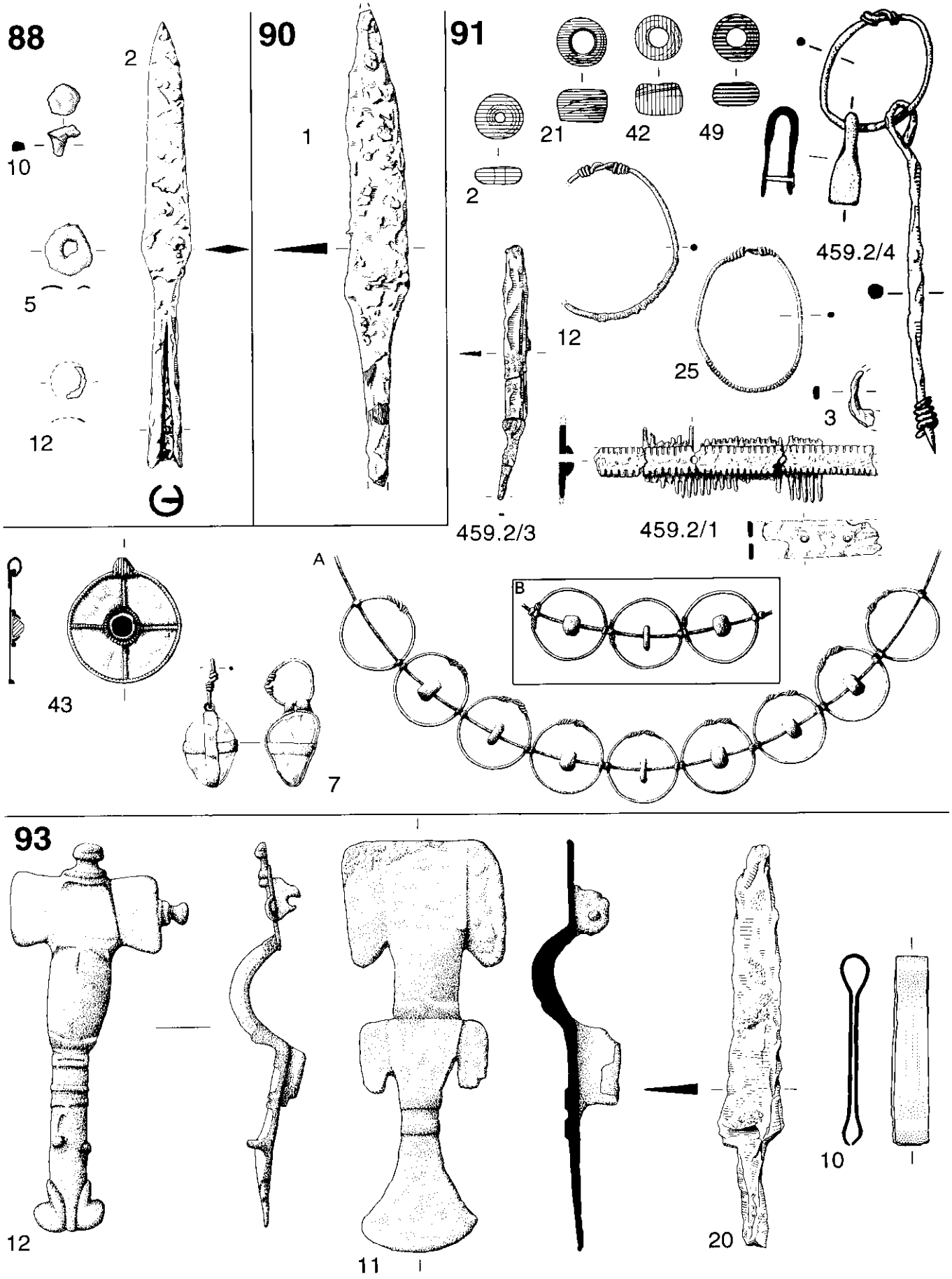


*Figure 3.60 Objects from graves **88**, **90**, **91**, and **93** (Scale 1:1 except **88** 10; **90** 1; **91** 459.2/1, 459.2/3; **93** 20 at 1:2 and **88** 2 at 1:3). Grave **91** includes alternative reconstructions of necklace (C Malim)*

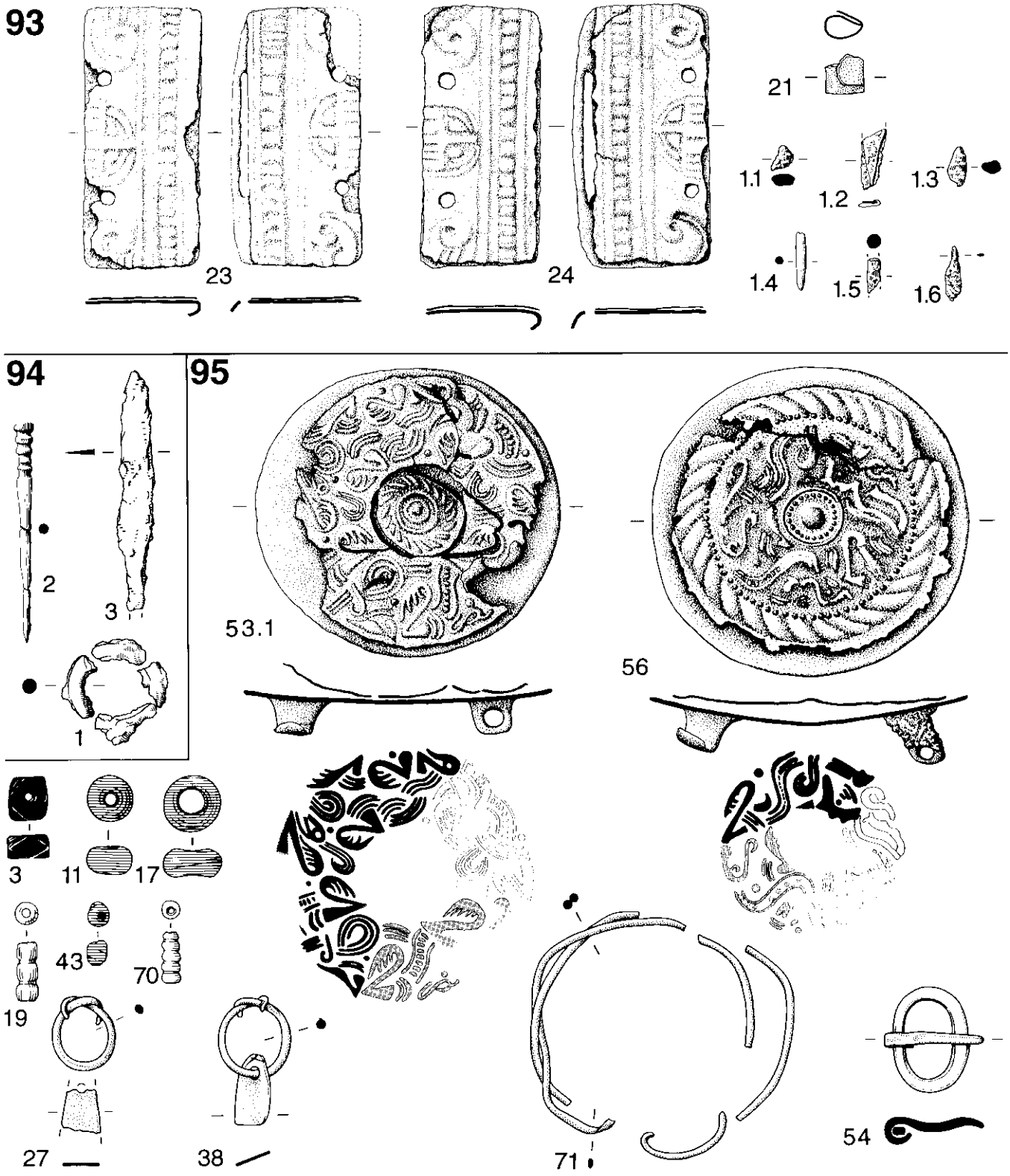


*Figure 3.61 Objects from graves **93**, **94**, and **95** (Scale 1:1 except **93** 1.1–1.6; **94** 1–3 at 1:2). Grave **95** includes interpreted pattern from saucer brooches, after Tania Dickinson.*

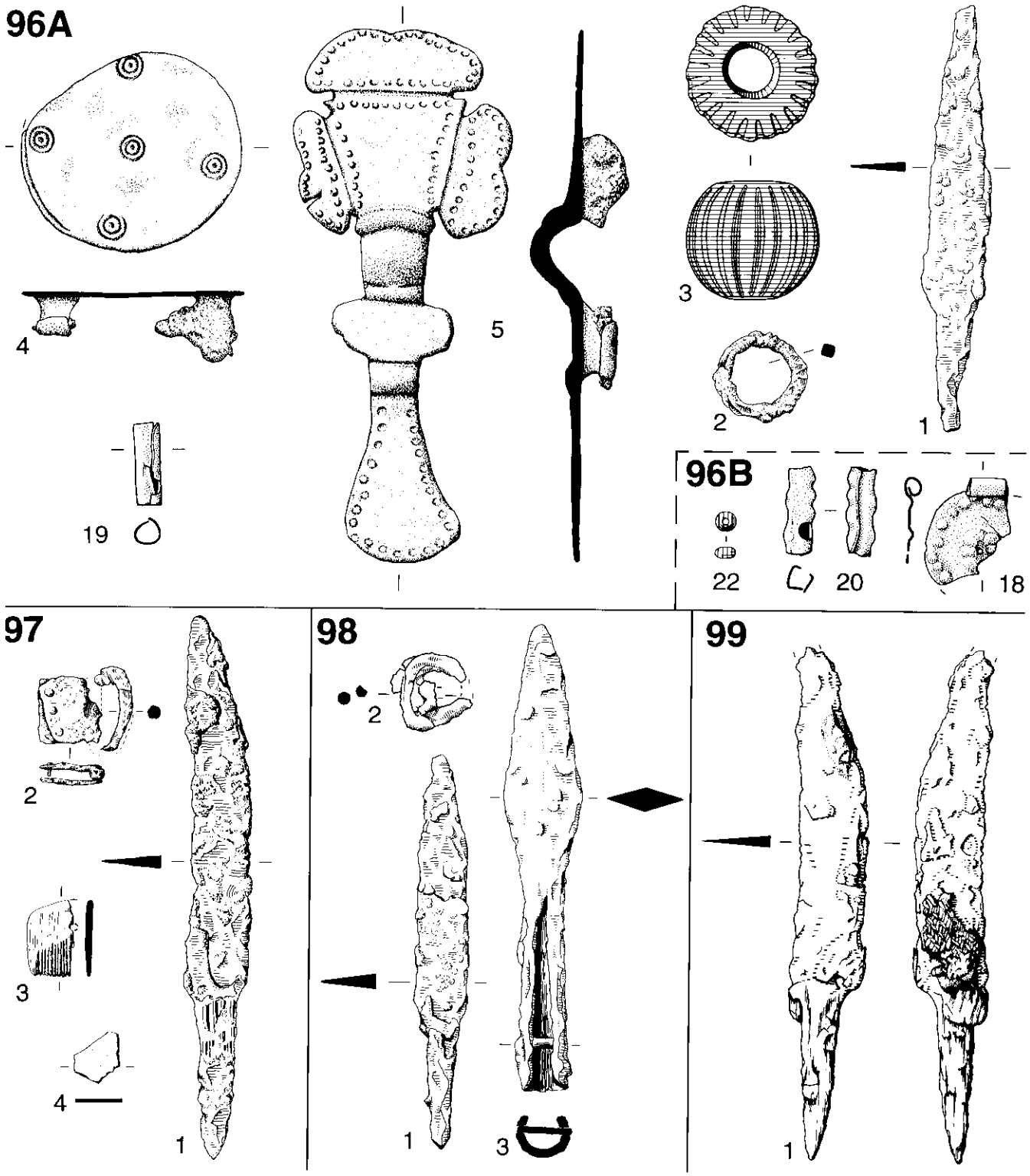


*Figure 3.62 Objects from graves **96A**, **96B**, **97**, **98**, and **99** (Scale 1:1 except **96A** 1, 2; **97** 1–3; **98** 1–3; **99** 1 at 1:2)*

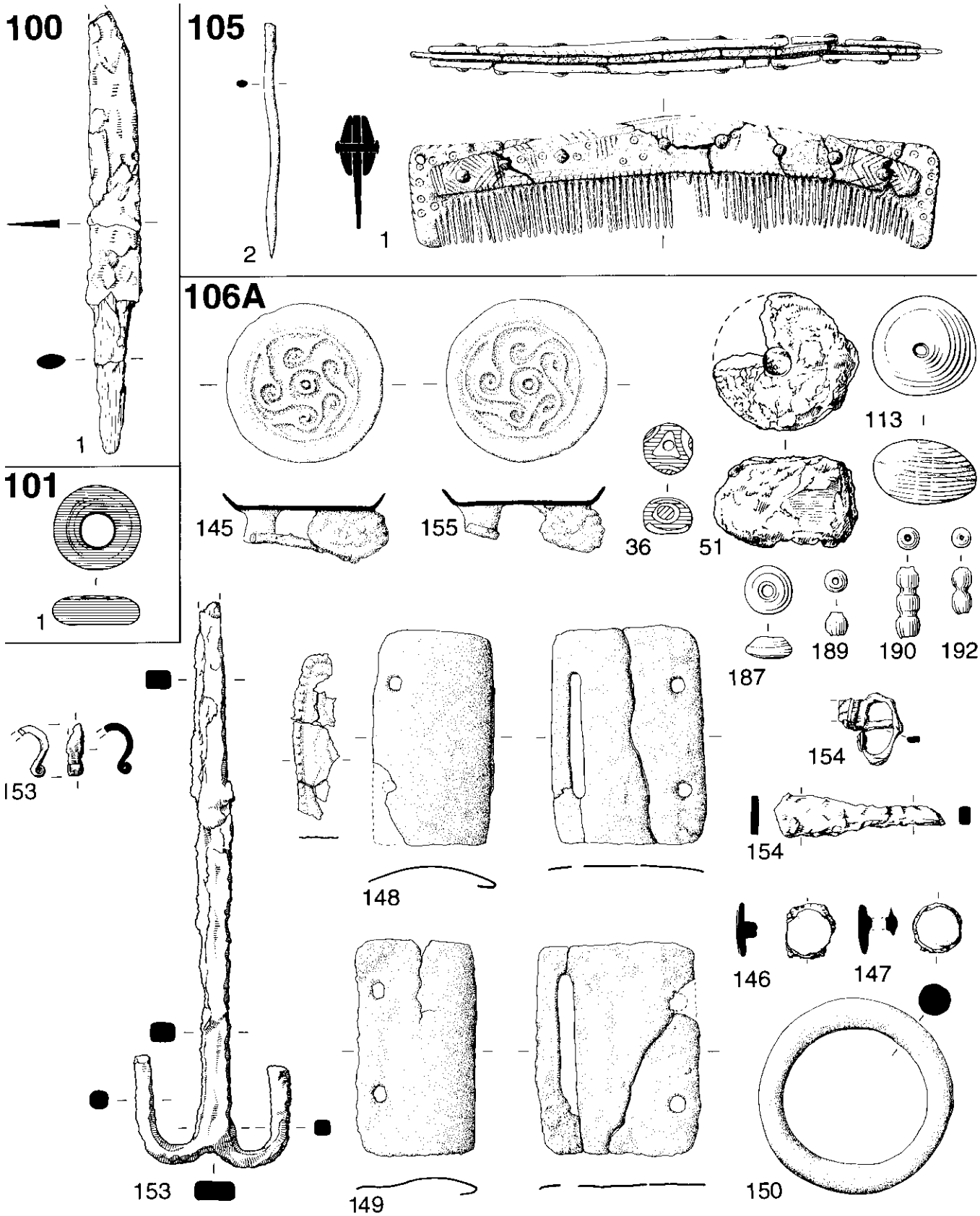


*Figure 3.63 Objects from graves **100**, **101**, **105**, and **106A** (Scale 1:1 except **100** 1; **105** 1; **106A** 146, 147, 153, 154 at 1:2)*

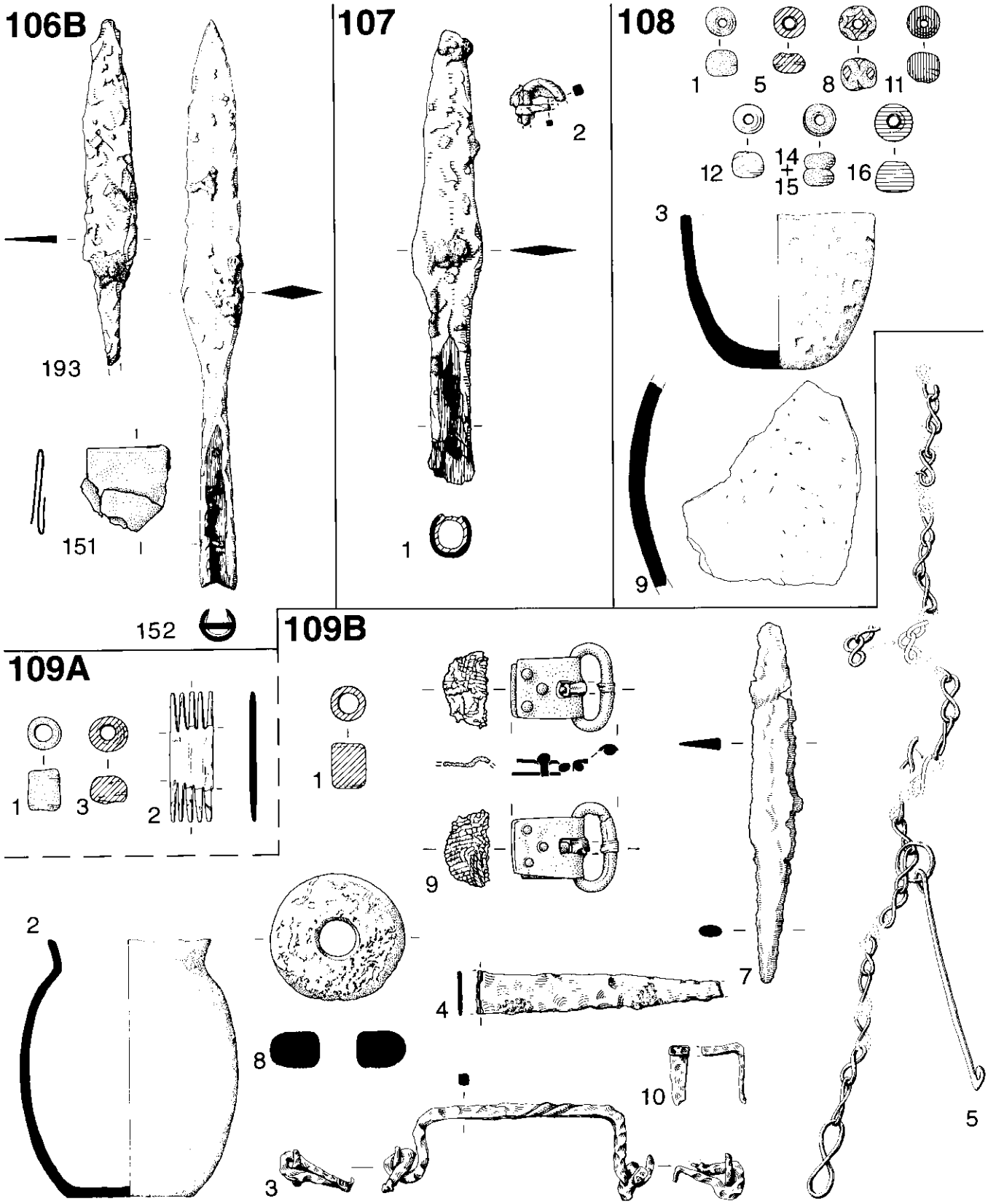


*Figure 3.64 Objects from graves **106B**, **107**, **108**, **109A**, and **109B** (Scale 1:1 except **106B** 193; **107** 1, 2; **109A** 2, **109B** 3, 4, 7, 10 at 1:2 and **106B** 152; **108** 3, 9; **109B** 2, 5 at 1:3)*

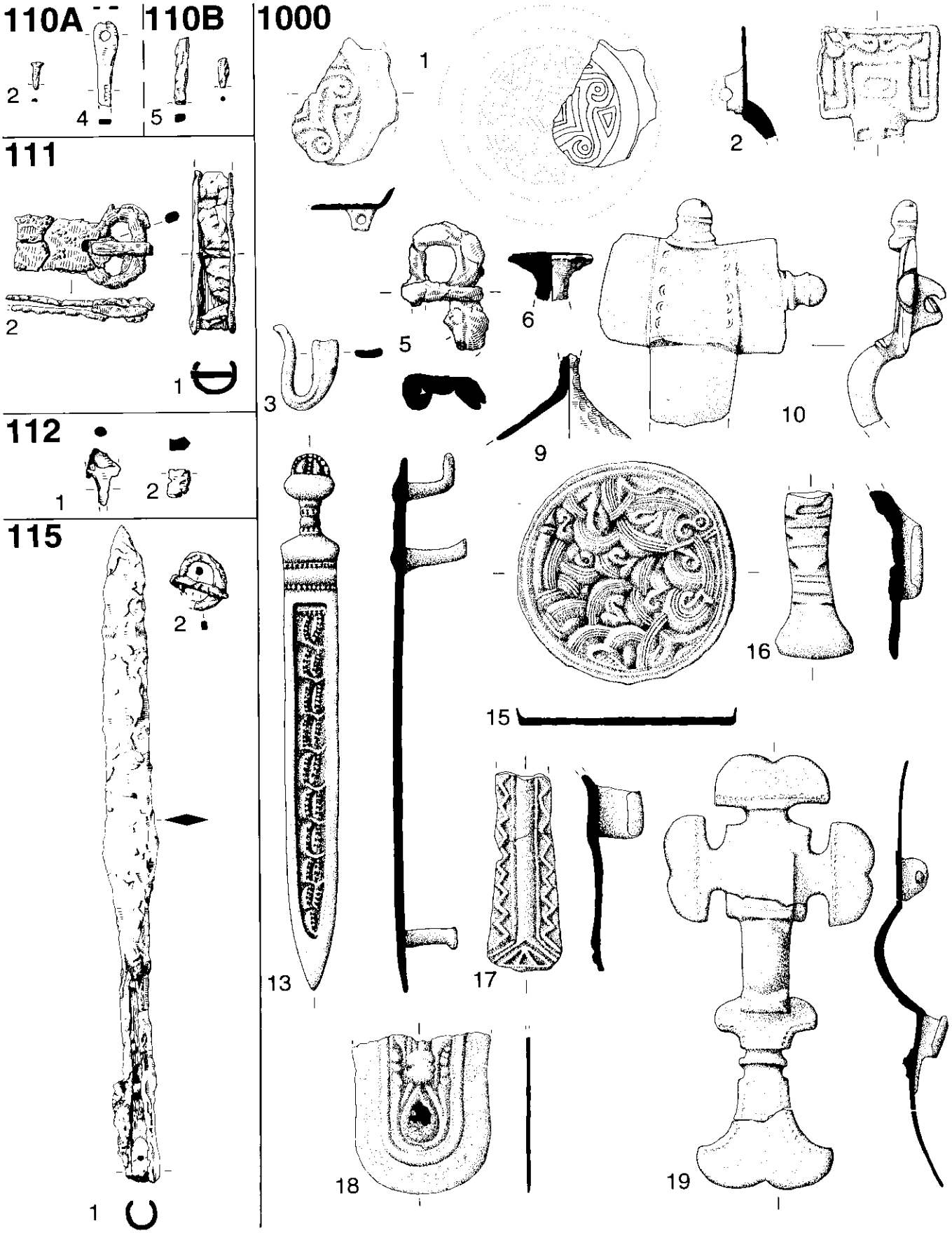


Figure 3.65 Objects from graves ***110A***, ***110B***, ***111***, ***112***, ***115*** *and unstratified context* ***1000*** *(Scale 1:2 except* **115** *1 at 1:3; and* ***1000*** *1–3, 10, 13, 15–19 at 1:1)*

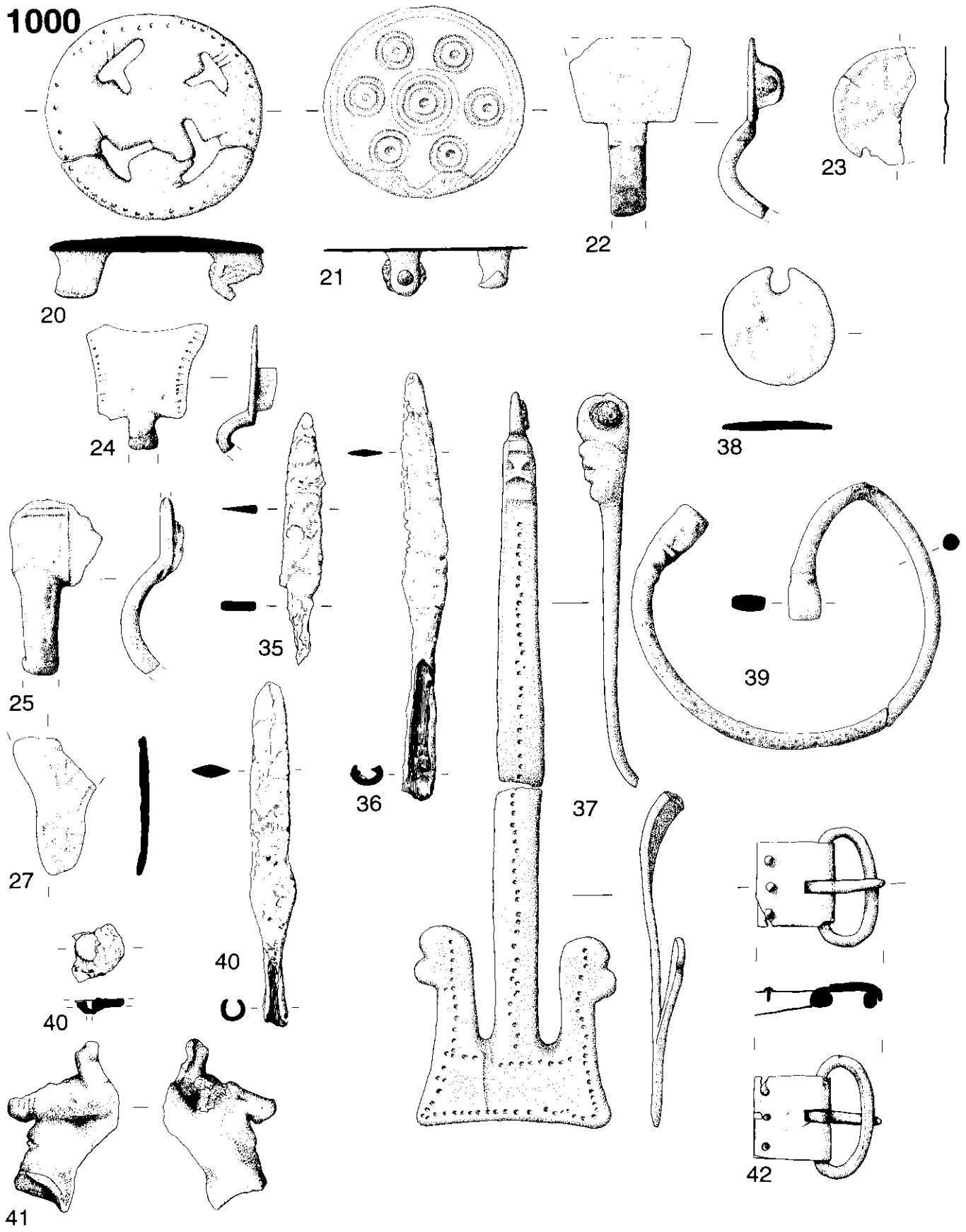


*Figure 3.66 Objects from unstratified context **1000** (Scale 1:1 except 35, 40 at 1:2 and 36 at 1:3)*

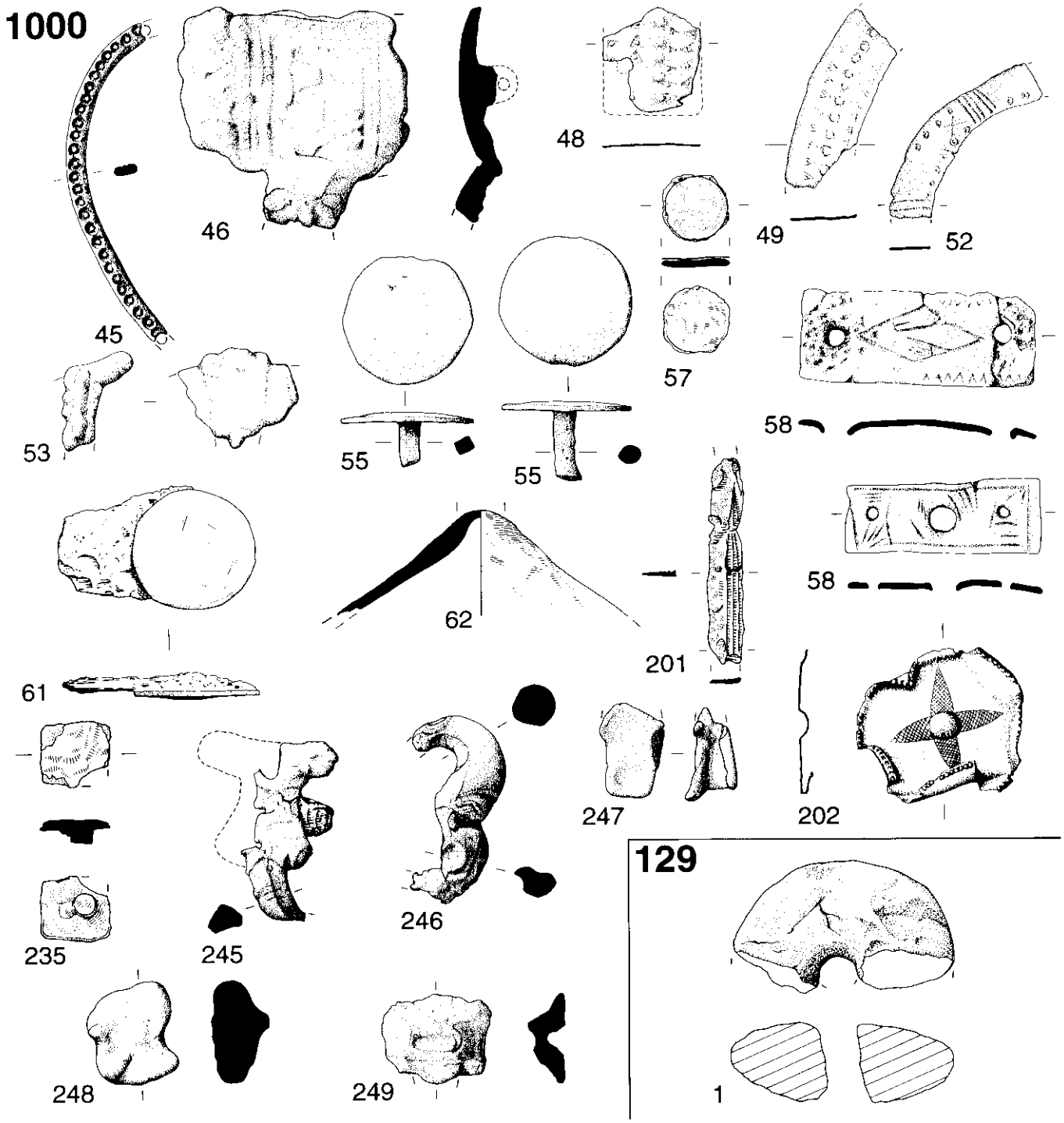


*Figure 3.67 Objects from unstratified context **1000** and posthole **F129** (Scale 1:1 except 57, 62, 201, 235 **129** 1 at 1:2)*

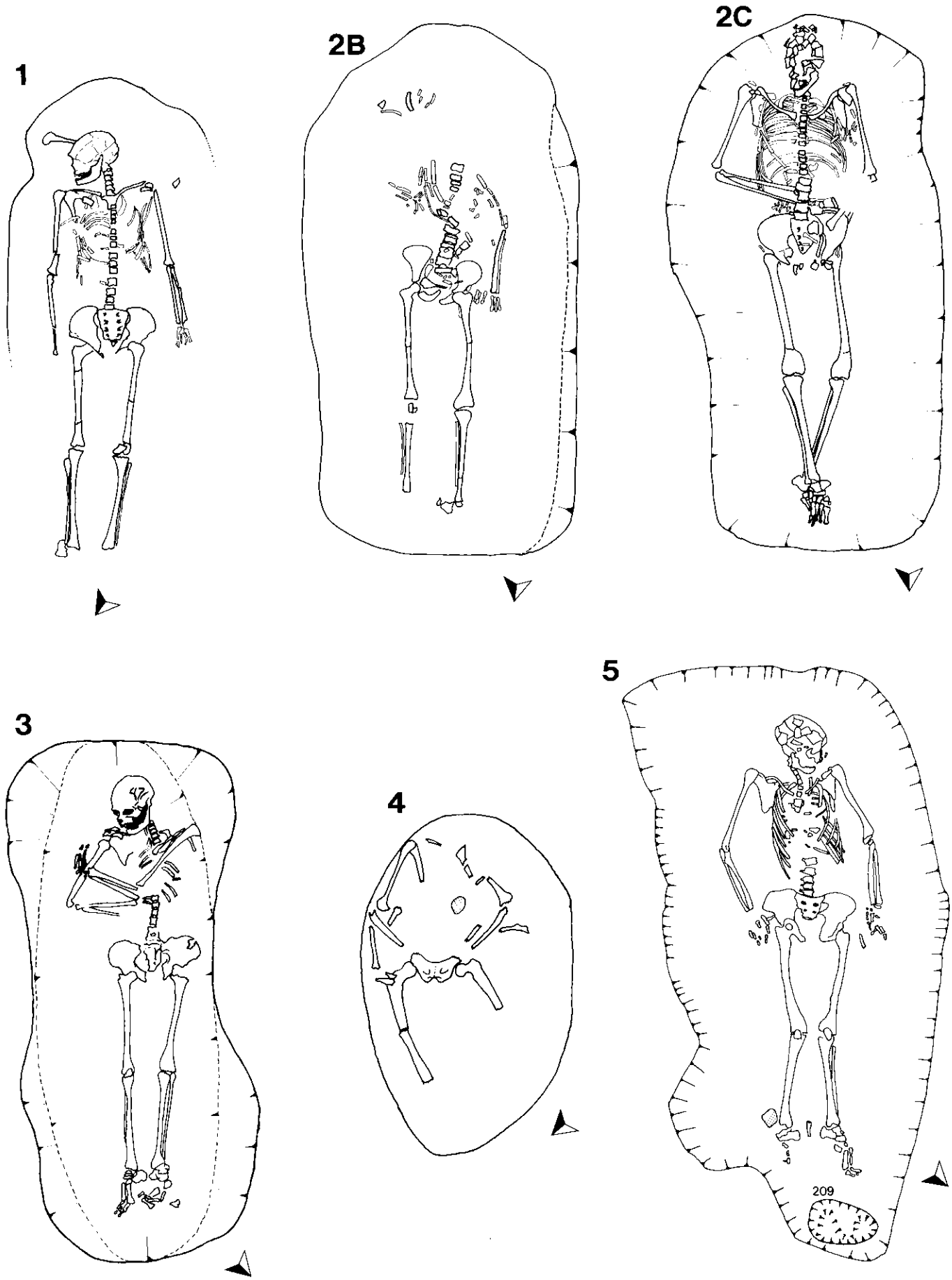


Figure 3.68 Graves 1, 2, 3, 4, and 5 showing selected artefacts (Scale 1:20)

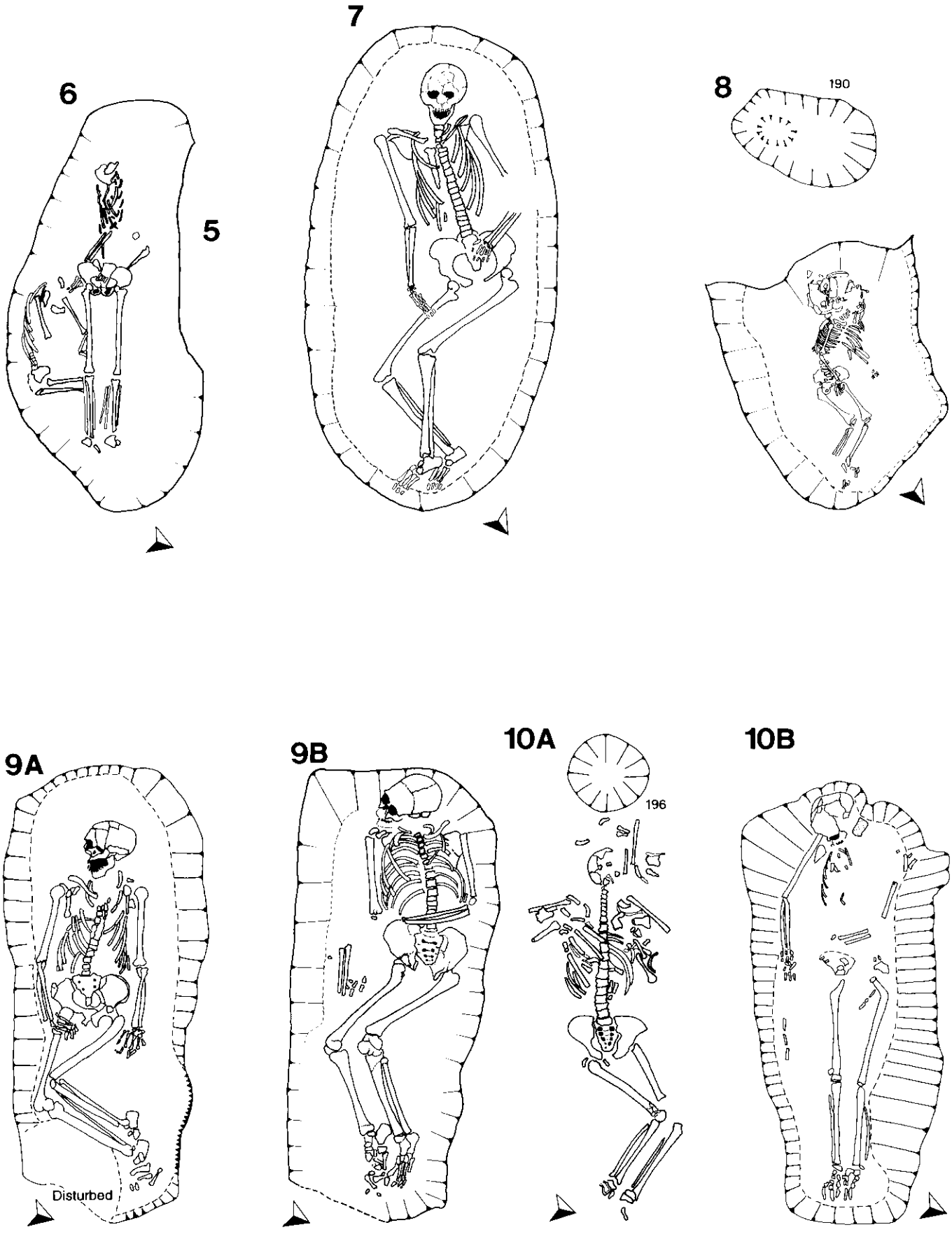


Figure 3.69 Graves 6, 7, 8, 9A, 9B, 10A, and 10B showing selected artefacts (Scale 1:20)

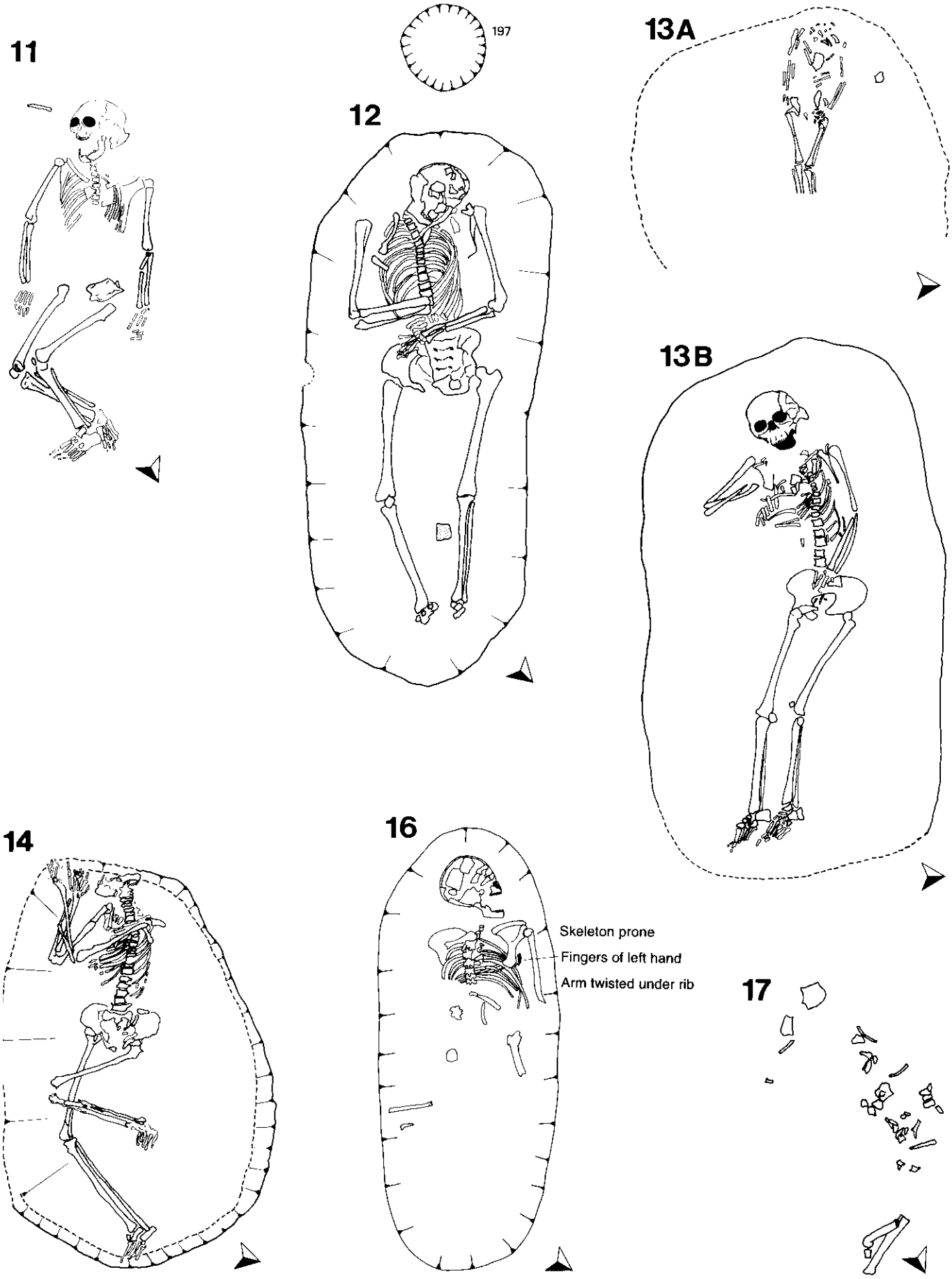


Figure 3.70 Graves 11, 12, 13, 14, 16, and 17 showing selected artefacts (Scale 1:20)

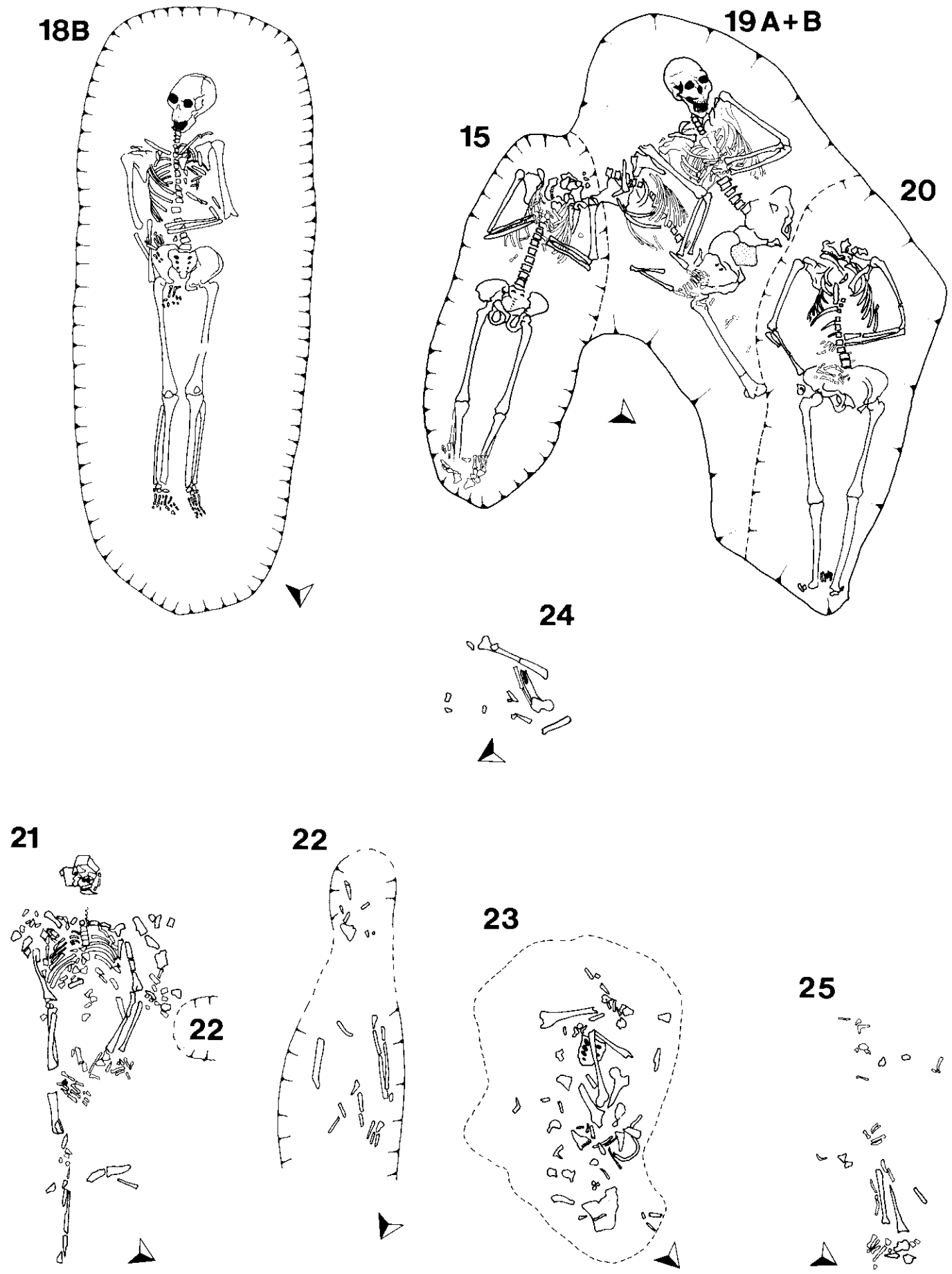


Figure 3.71 Graves 18B, 15, 19A, 19B, 20, 21, 22, 23, and 25 showing selected artefacts (Scale 1:20)

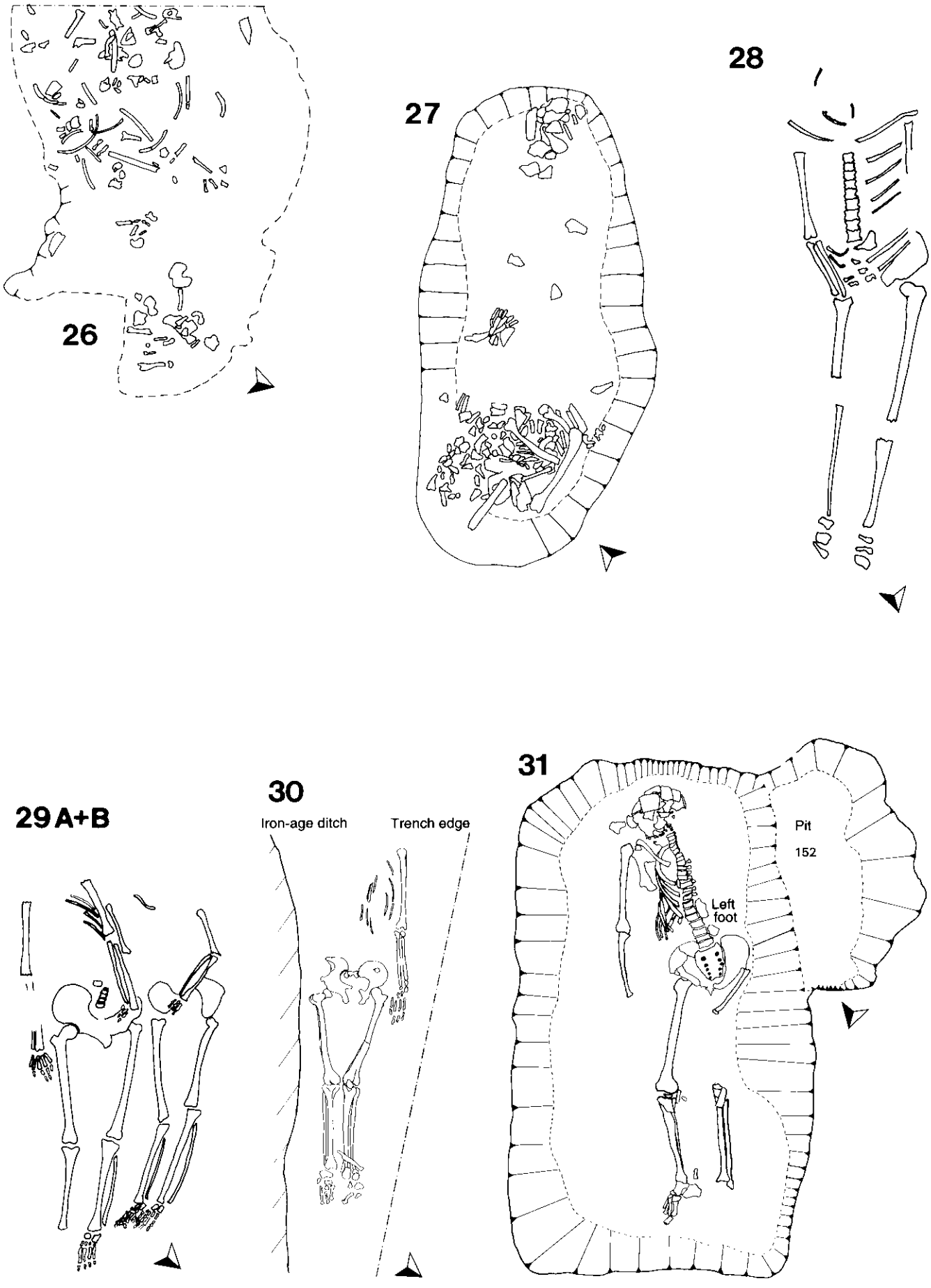


Figure 3.72 Graves 26, 27, 28, 29A & B, 30, and 31 showing selected artefacts (Scale 1:20)

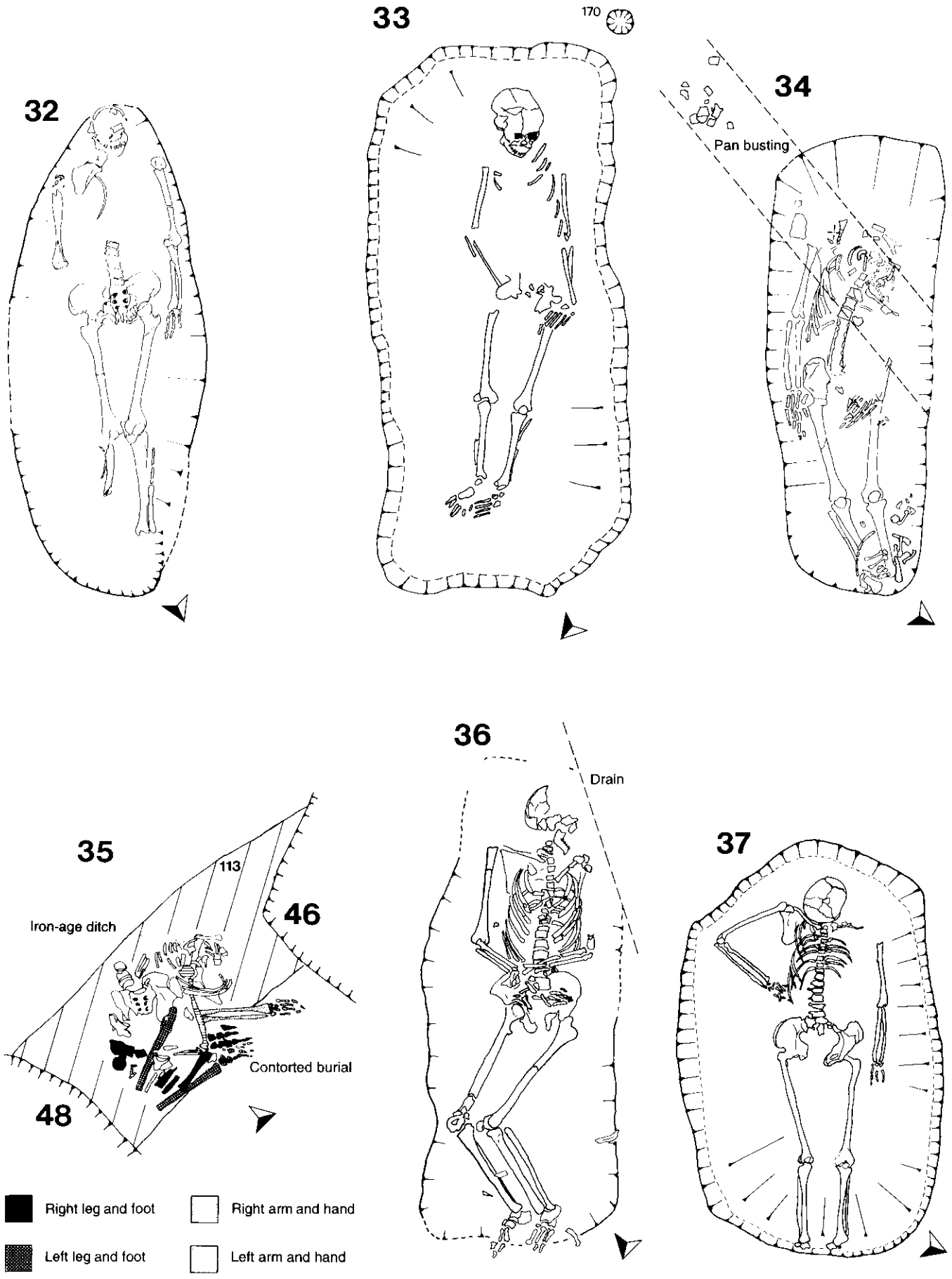


Figure 3.73 Graves 32, 33, 34, 35, 36, and 37 showing selected artefacts (Scale 1:20)

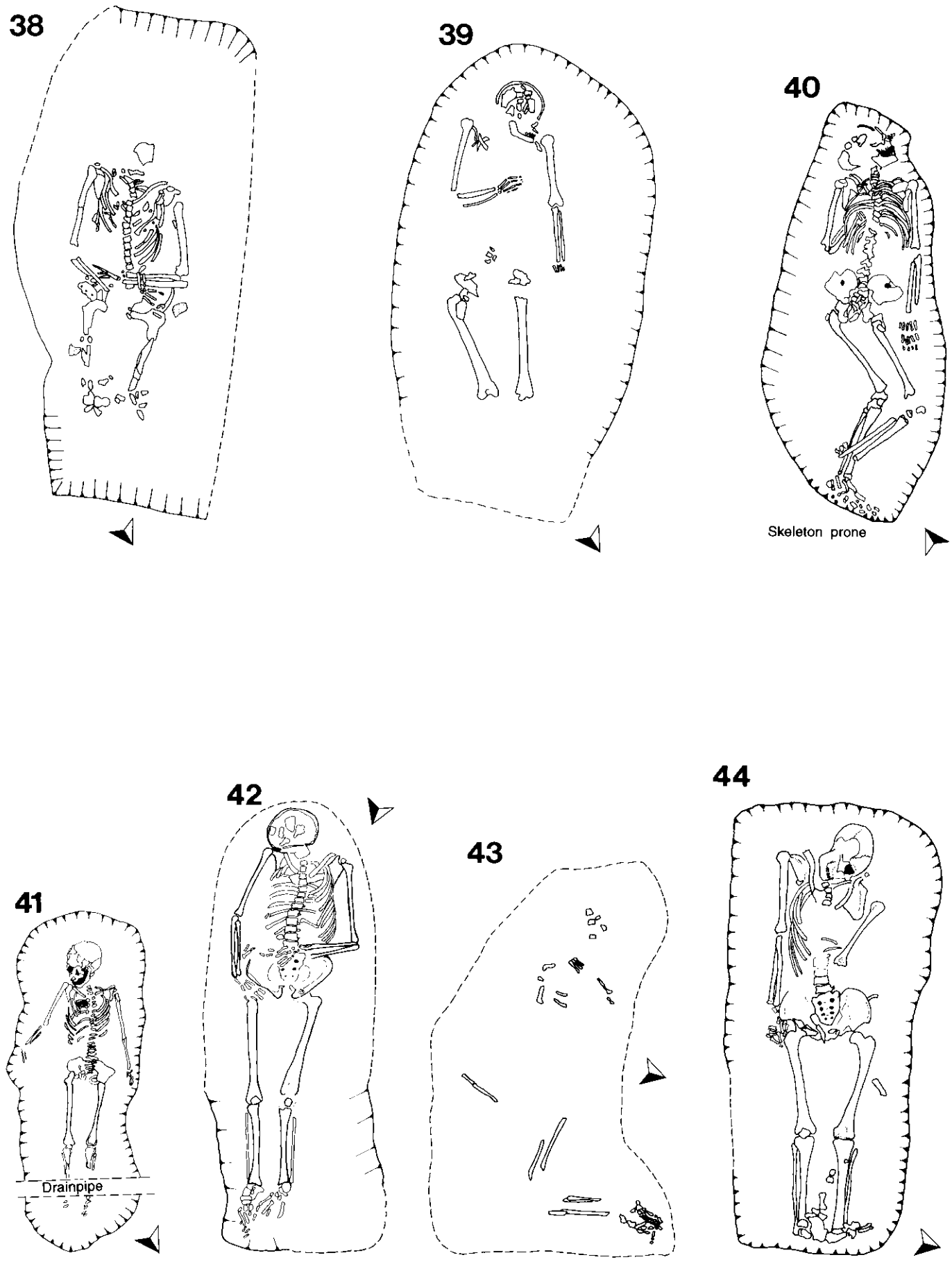


Figure 3.74 Graves 38, 39, 40, 41, 42, 43, and 44 showing selected artefacts (Scale 1:20)

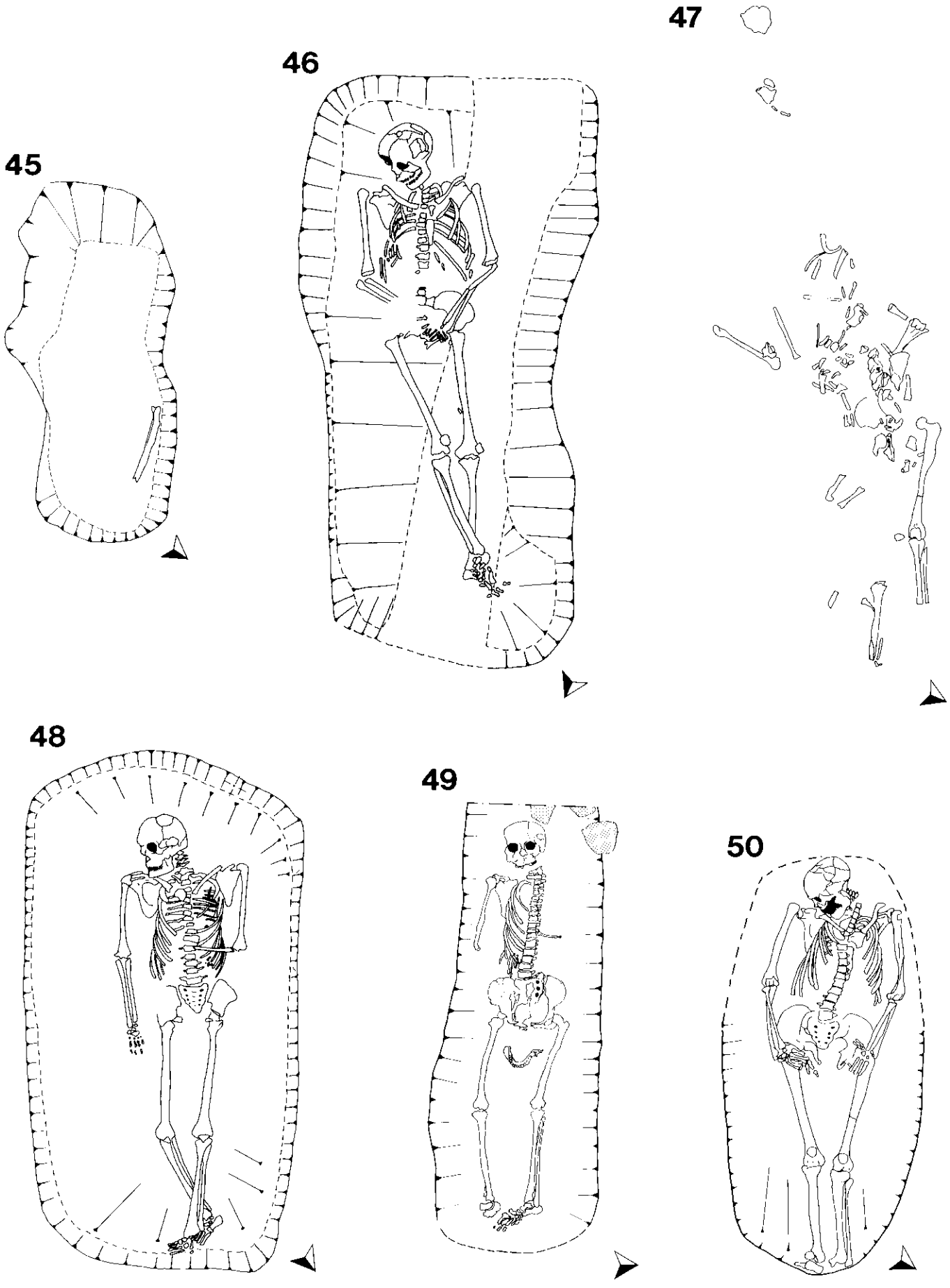


Figure 3.75 Graves 45, 46, 47, 48, 49, and 50 showing selected artefacts (Scale 1:20)

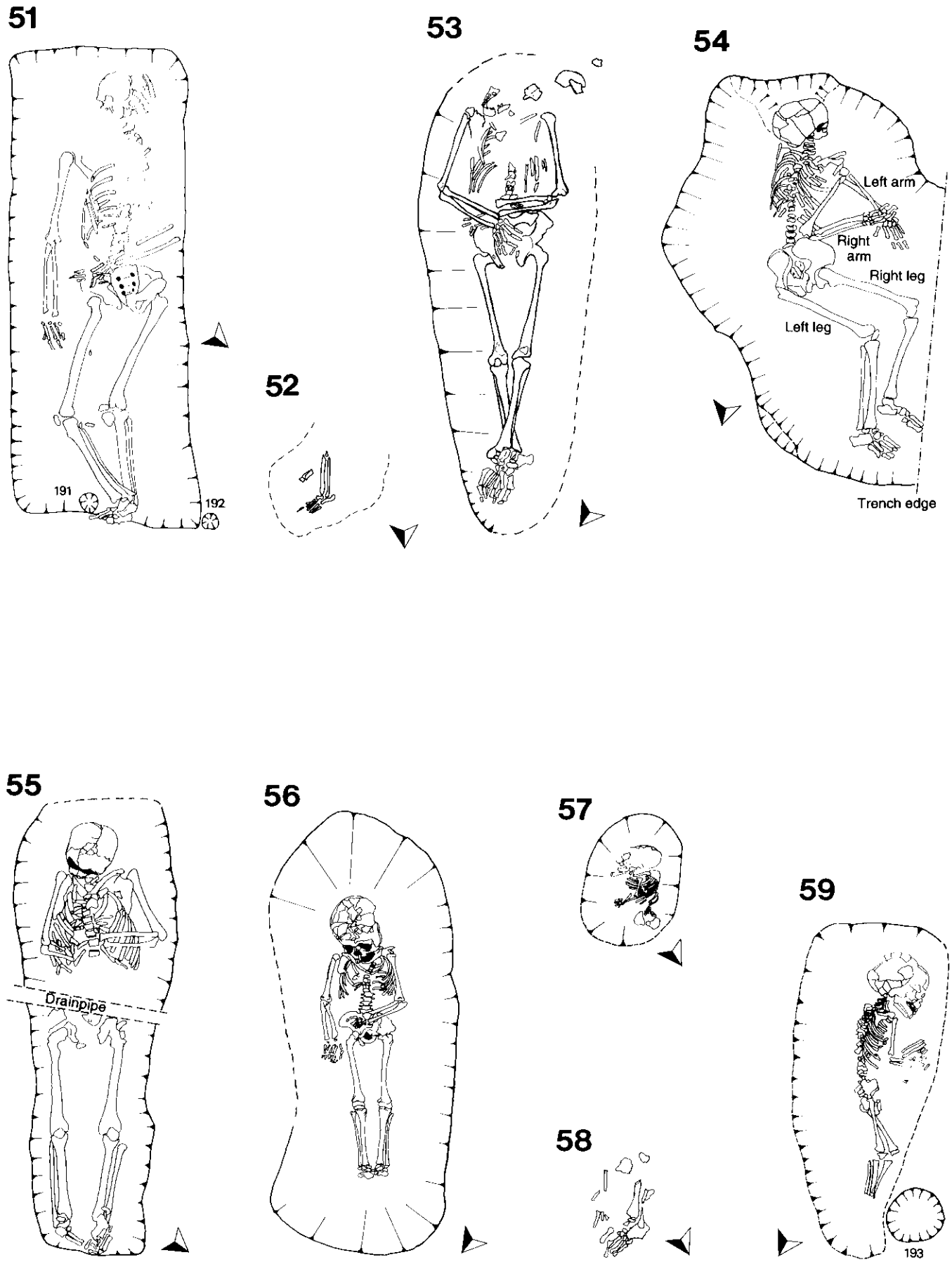


Figure 3.76 Graves 51, 52, 53, 54, 55, 56, 57, 58, and 59 showing selected artefacts (Scale 1:20)

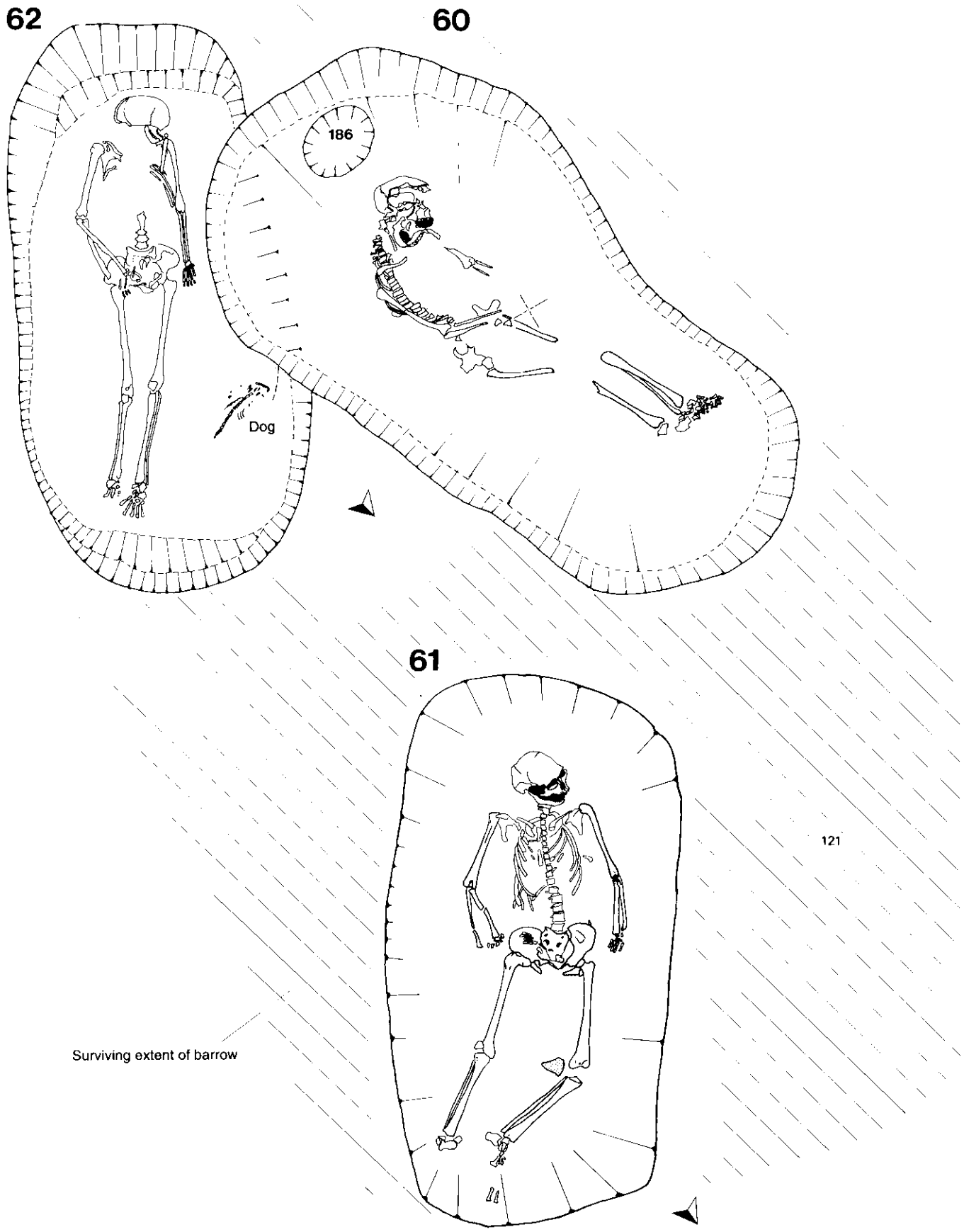


Figure 3.77 Graves 60, 61, and 62 showing selected artefacts (Scale 1:20)

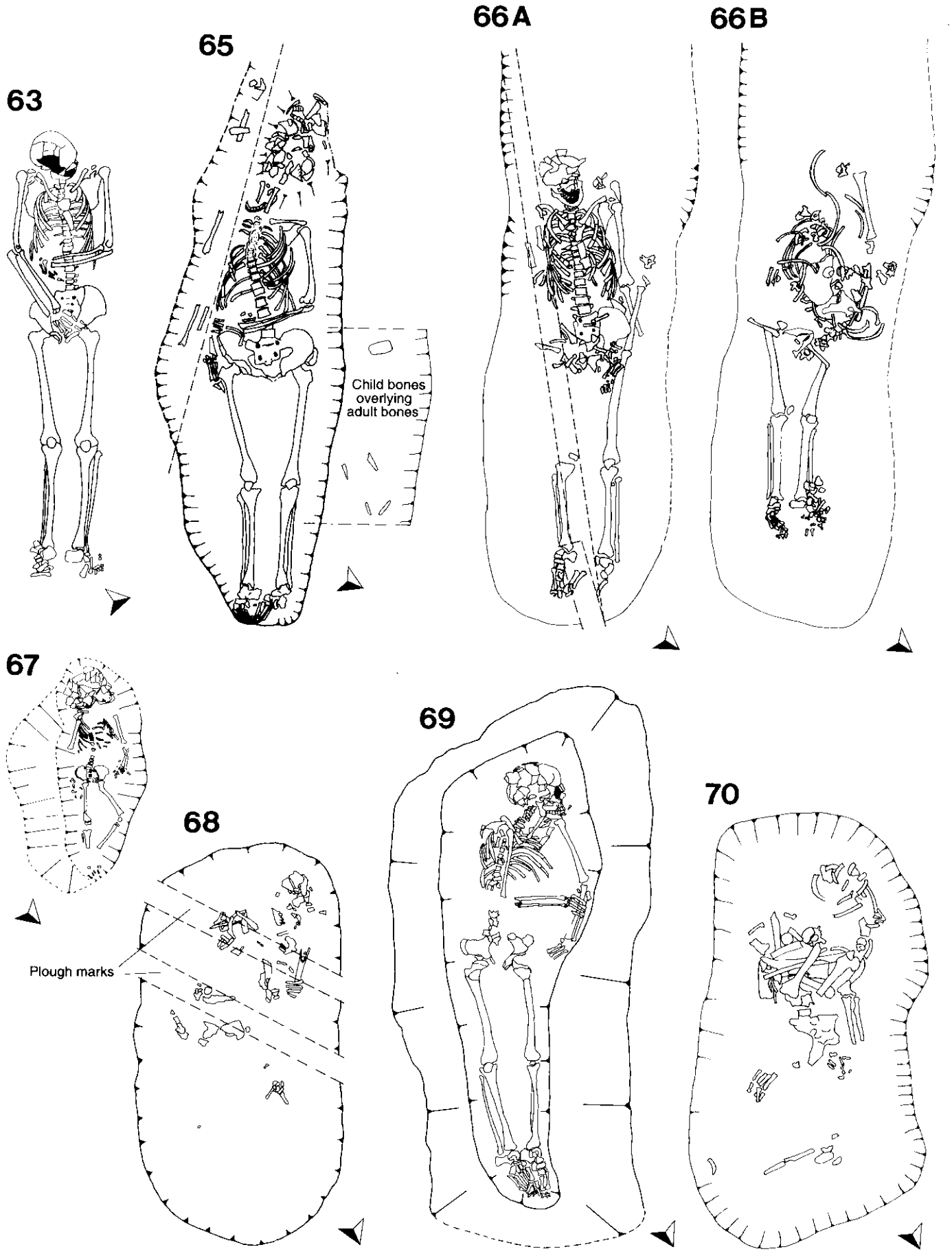


Figure 3.78 Graves 63, 65, 66A, 66B, 67, 68, 69, and 70 showing selected artefacts (Scale 1:20)

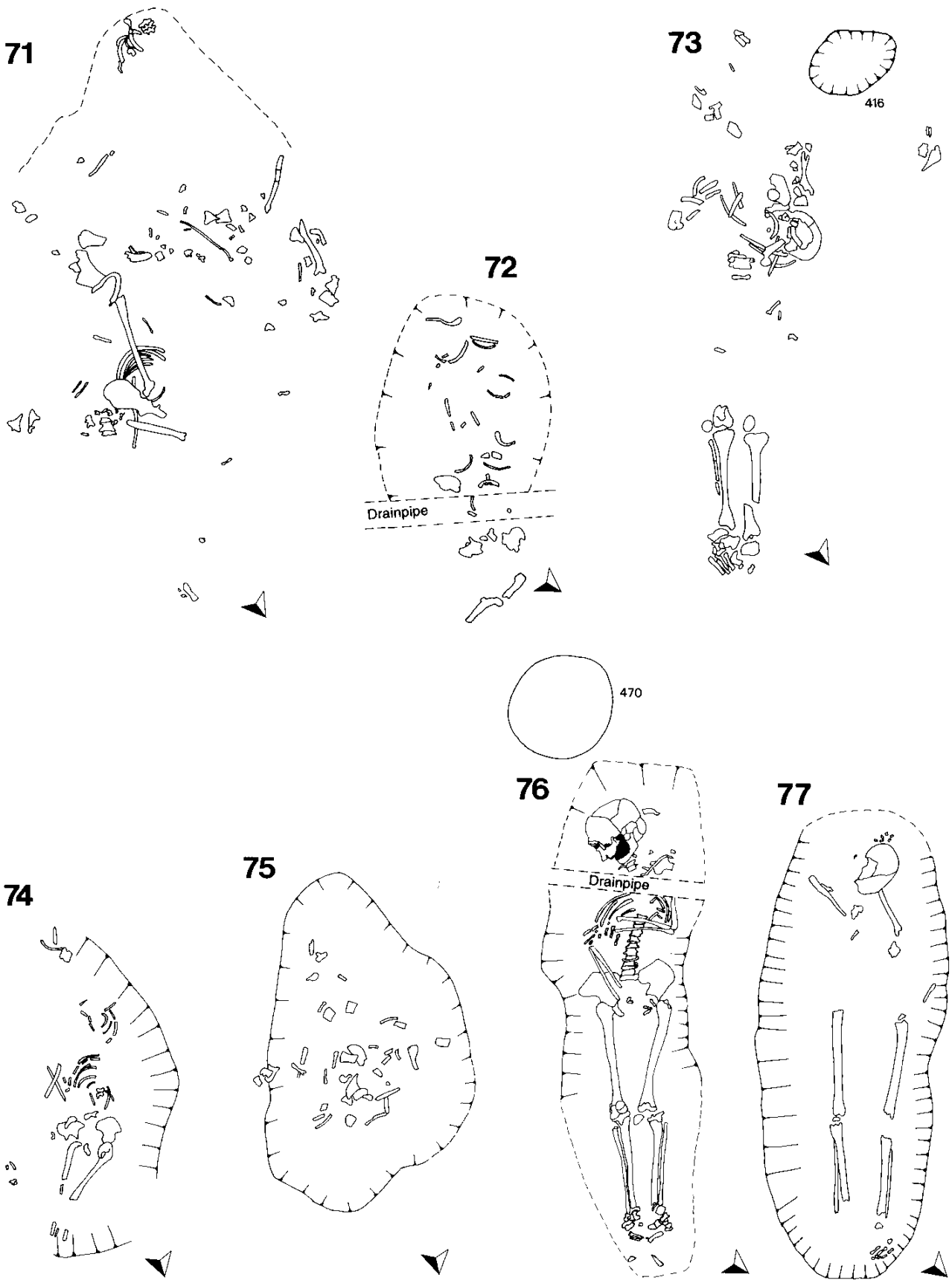


Figure 3.79 Graves 71, 72, 73, 74, 75, 76, and 77 showing selected artefacts (Scale 1:20)

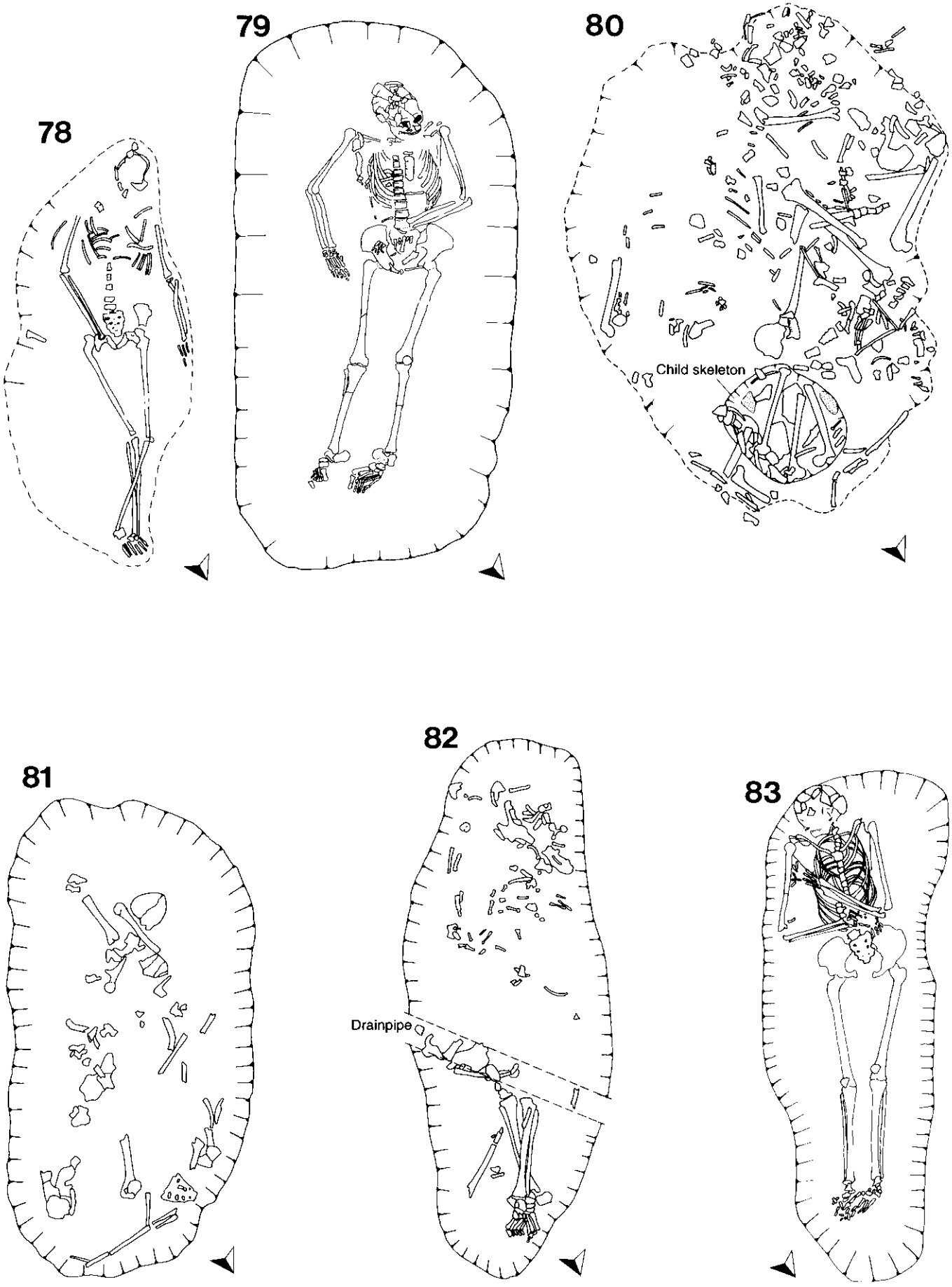


Figure 3.80 Graves 78, 79, 80, 81, 82, and 83 showing selected artefacts (Scale 1:20)

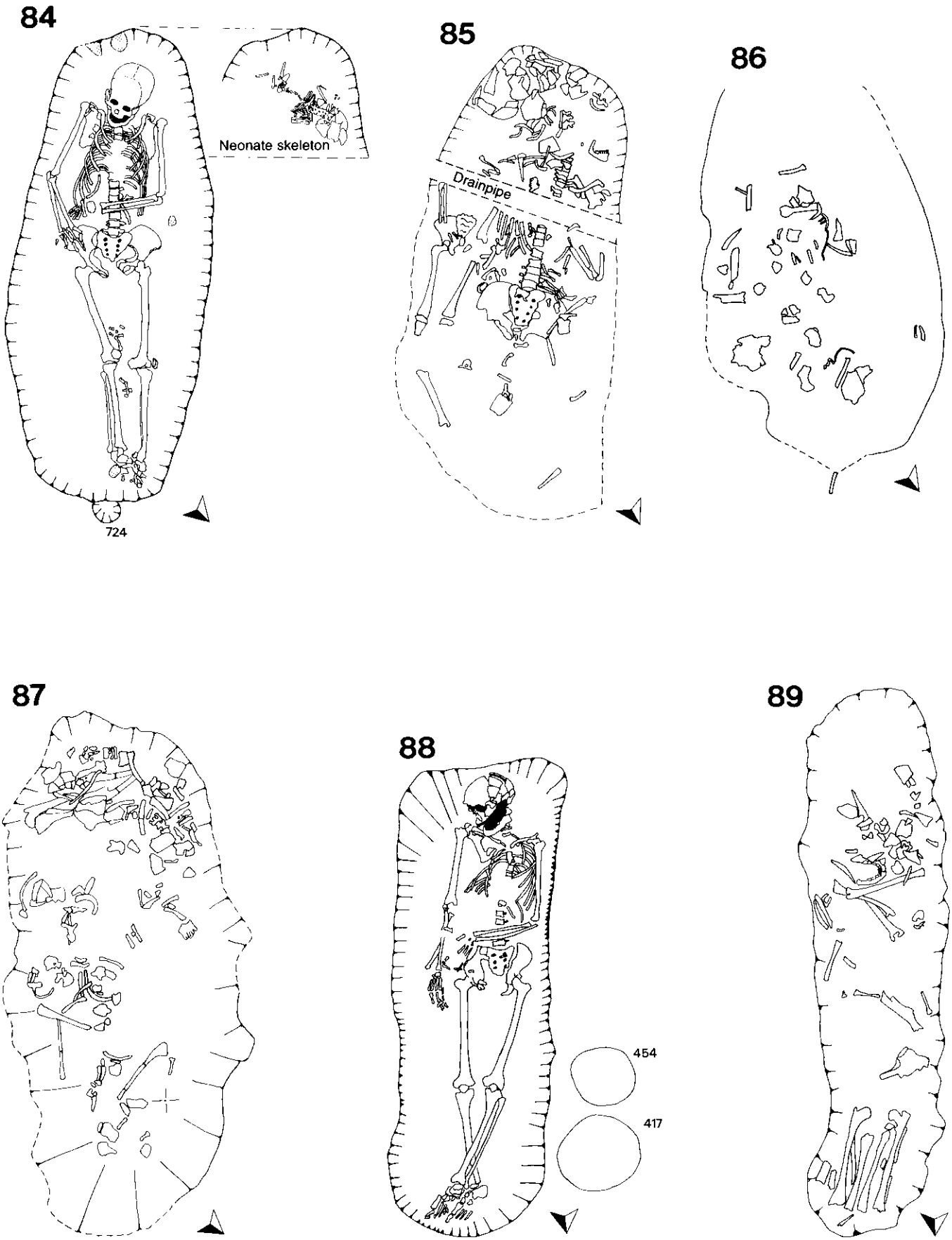


Figure 3.81 Graves 84, 85, 86, 87, 88, and 89 showing selected artefacts (Scale 1:20)

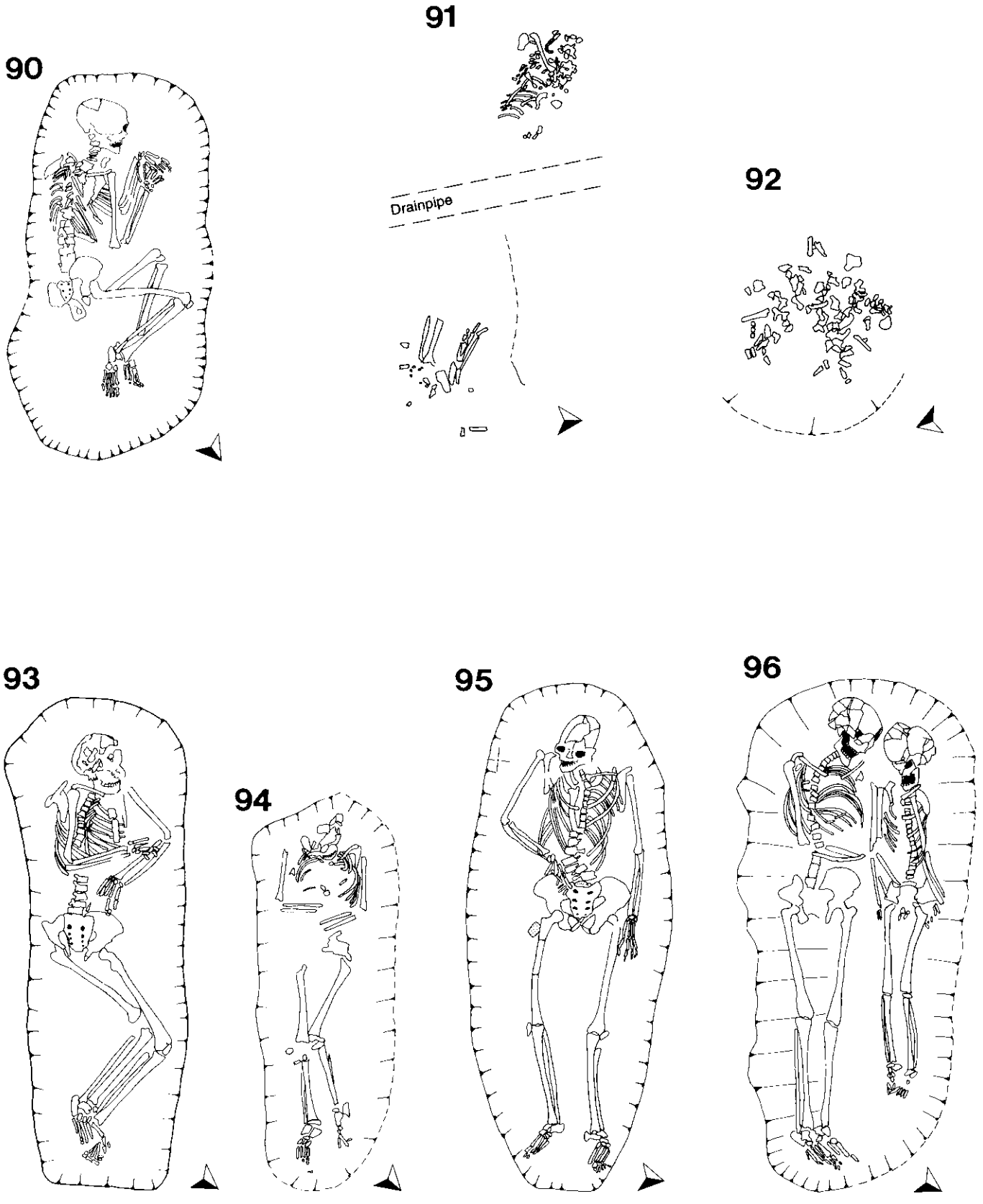


Figure 3.82 Graves 90, 91, 92, 93, 94, 95, and 96 showing selected artefacts (Scale 1:20)

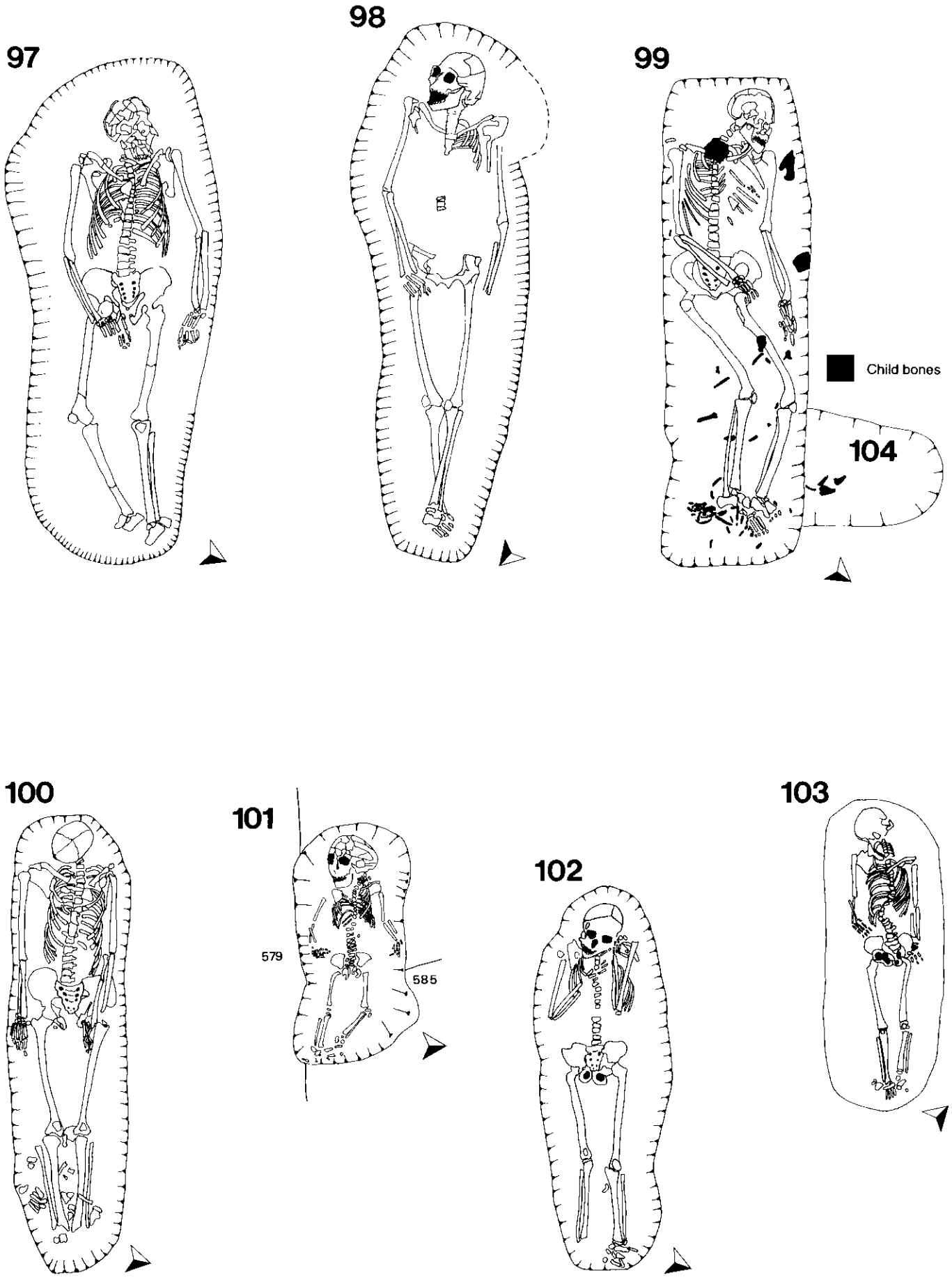


Figure 3.83 Graves 97, 98, 99, 100, 101, 102, and 103 showing selected artefacts (Scale 1:20)

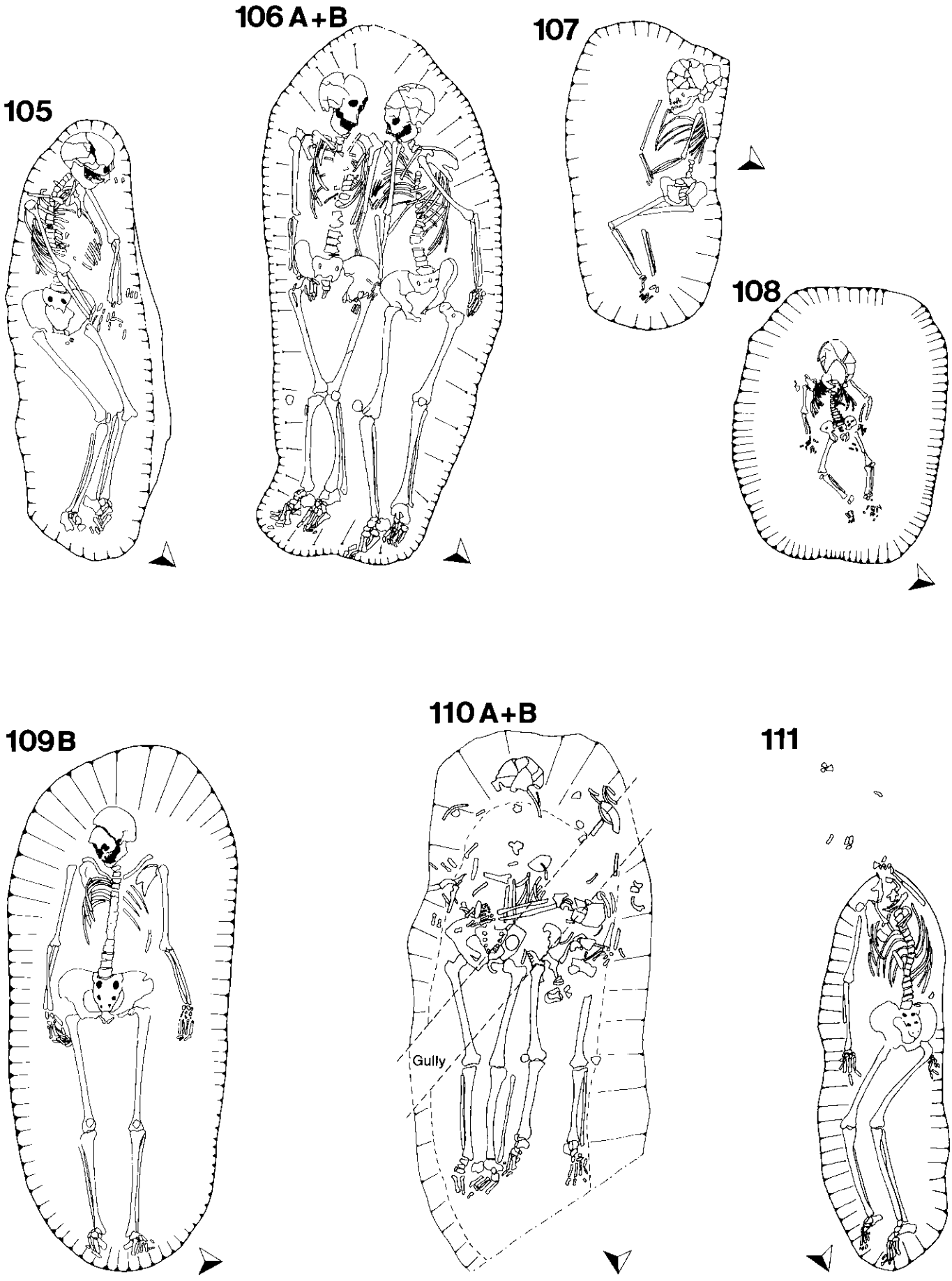


Figure 3.84 Graves 105, 106A & B, 107, 108, 109B, 110A & B, and 111 showing selected artefacts (Scale 1:20)

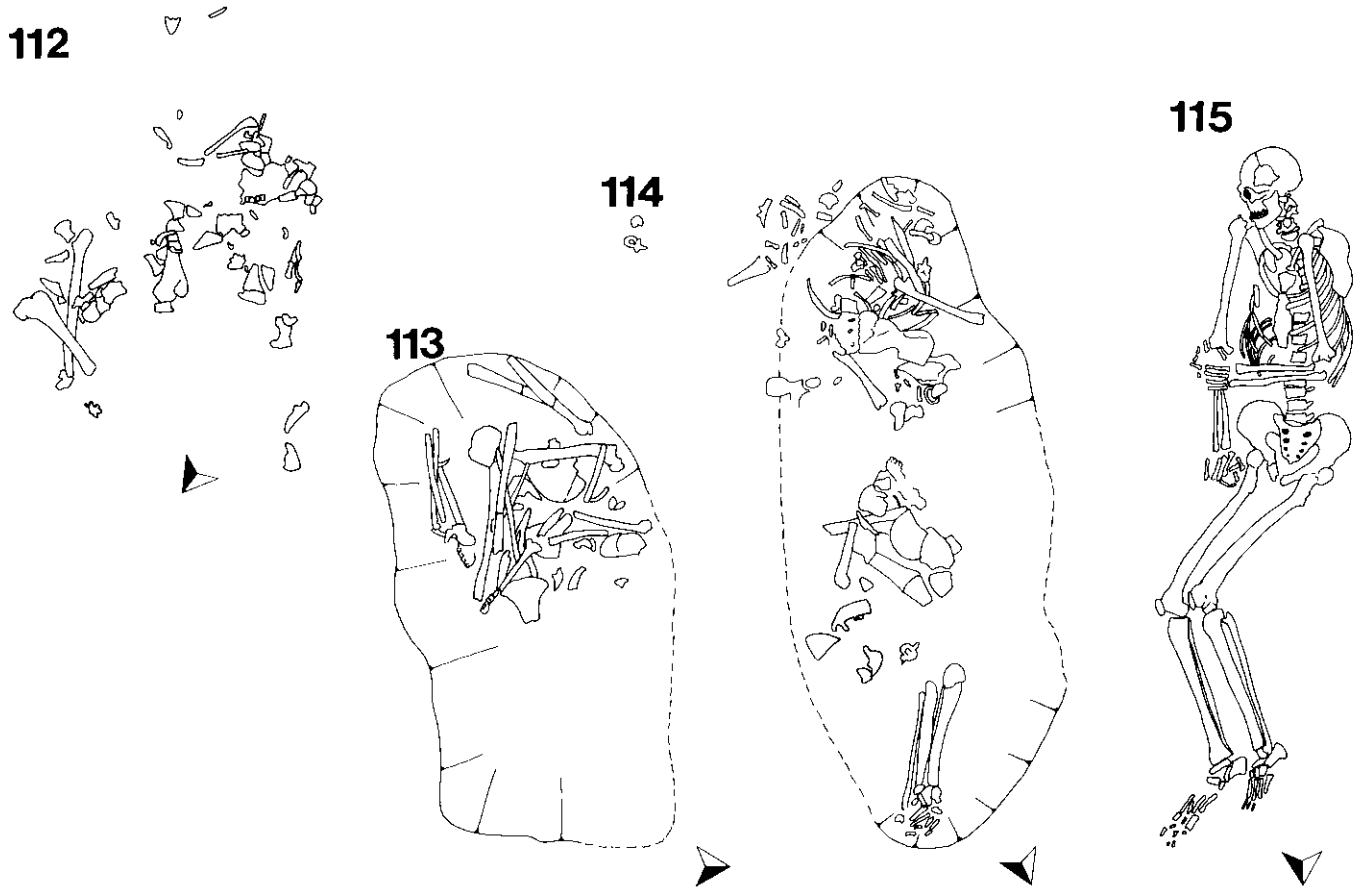


Figure 3.85 Graves 112, 113, 114, and 115 showing selected artefacts (Scale 1:20)

Chapter 4 The human skeletal material

by Corinne Duhig

4.1 Summary

(A summary of essential skeletal information can be found in Table 3.3.)

Excellent preservation and recovery maximises the value of this reasonably sized sample, presenting us with a clear picture of an early Anglo-Saxon community. As is common in ancient cemeteries, children and adolescents (1–18 years, see section 4.3) make up about one third of the buried population, with only the newborns and infants (neonatal–one year, see section 4.3) being under-represented according to modern equivalent death rates. There were equal numbers of adult men and women, with a slight mortality peak amongst younger adults, but one fifth of adults survived to 45 years or beyond and there is evidence for a few reaching their 50s or 60s. That some adjacent burials were of related people is suggested by similar anatomical variants in their skeletons.

The average height was nearly 1.69m (5′6″): men 1.73m (5′8″) and women 1.63m (5′4″). They were thus above the average, but within the range, for Anglo-Saxons – who were taller than both Romano-British and medieval people – although exceeded by their contemporaries found buried in recently excavated graves at Oakington, Cambridgeshire. Body build, as shown by bone size and muscular markings, was generally robust. Pathological conditions which leave signs on the bones indicate a good diet for the whole community; a lifestyle of physical activity with the resultant arthritis, fractures and general wear and tear; and male involvement in interpersonal conflict. Teeth were mostly strong and not decayed although worn by coarse food. Mild, and a few not-so-mild, non-specific infections were common and there was also some exposure to the medieval and later scourges of tuberculosis and leprosy. A single case of cancer was identified.

4.2 The material

The condition of the bone is generally robust and uneroded – as is common in Cambridgeshire – but disturbance, the effects of ploughing, and the passage of agricultural machinery have broken most of the larger post-cranial bones and almost all the skulls. In shallow graves bones have been both broken and dragged, and the skulls have suffered most because many had been 'pillowed up' in their graves, resulting in severe crushing and loss of bone fragments outside the grave area. Skull reconstruction has been hampered by these factors, and by warping as a result of soil pressure combined with waterlogging.

The total number of individuals examined from known grave contexts is 148, the breakdown by age and sex being discussed below in the section on demography. The bones in grave 64 were not excavated and are not taken into account in this report. Sk149 was recovered from a possible Iron Age grave (grave 49) but has been included in this analysis. The relatively high percentage of immature individuals (31%), which includes juveniles, small children, infants, and a neonate, must in part be due to the excellent preservation.

Percentage recovery of each skeleton is plotted on a plan of the cemetery (Fig 4.1), and shows that the best preservation was in Trenches XVI and XII, followed by Trench X except in its northern corner. The more easterly trenches have a very mixed pattern of preservation, some graves having over 80% of the skeleton remaining while adjacent ones have less than 10%, strongly supporting suggestions of robbing or other targeted disturbance. The direct relationship between good level of recovery and quality of information obtained from each skeleton is demonstrated by the better preservation of the group 'sexed' and the lower preservation in the '?sexed' and 'sex not determinable' groups, as shown in Figure 4.2.

4.3 Methods

General methods of skeletal recording and analysis are those of Stewart (1979), Steele and Bramblett (1988), and Ubelaker (1989). Specifically, sexing is based on Phenice (1969) for the pelvis and Ubelaker (1989, 52–5) for this and other areas of the skeleton. The 'five sexes' classification (female, ?female, not determinable, ?male, male) is used. For ageing of immature individuals I use the dental development and eruption standards of Moorrees *et al* (1963a, b) and Ubelaker (1989, 64); the data on time of appearance and fusion of epiphyses in Steele and Bramblett (1988) and Gray's Anatomy (Pick and Howden 1988). Subadult age is given as precisely as possible to a week, month or year as appropriate, with the range or standard deviation. For comparative purposes, subadult ages are also grouped into bands: 'neonate' (up to one month old), infant (one month to one year), child (one year to puberty, which is defined as thirteen years) and adolescent (puberty to skeletal adulthood at the eruption of the third molars and/or fusion of long-bone epiphyses, about eighteen years). Ageing of adults uses the Suchey-Brooks pubic symphysis casts (Brooks and Suchey 1990); auricular surface changes (Lovejoy *et al* 1985); cranial suture closure according to Meindl and Lovejoy (1985); and Brothwell's (1972, 6) classifica-

Figure 4.1 Skeletal recovery within the cemetery, by preservation bands

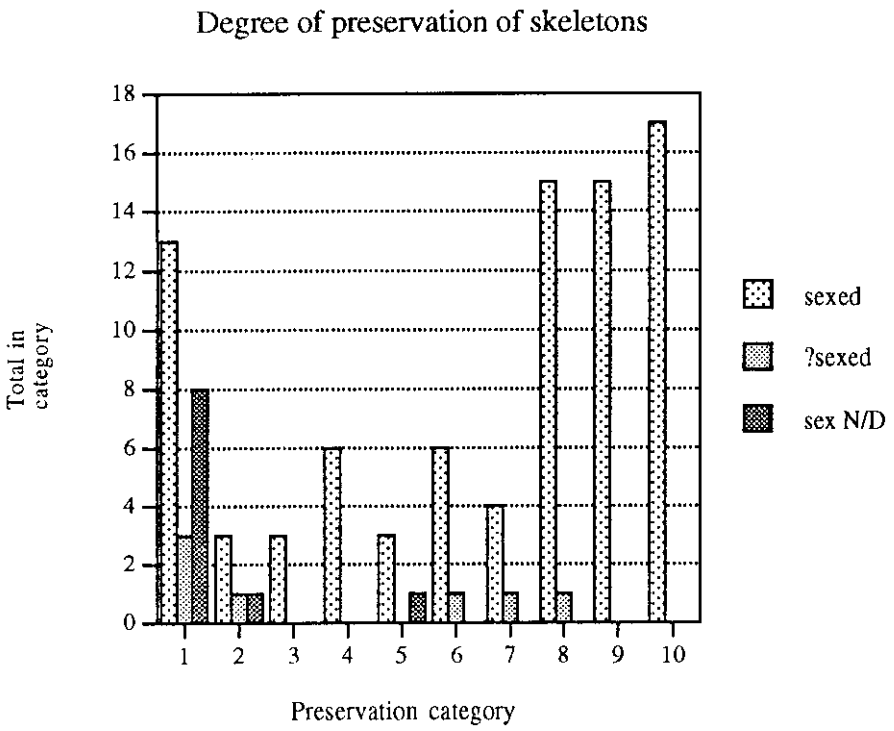


Figure 4.2 Skeletal preservation by sex

tion of dental wear. As many methods as possible were applied to each skeleton, and the combined results used to narrow the age range. Individual ages are discussed in the section on adult demography but when appropriate adult ages are banded into 'adult 1' (17–25 years), 'adult 2' (25–35 years), 'adult 3' (35–45 years) and 'adult 4' (45+ years).

Measurements are according to Bass (1987), and heights are calculated from long-bone lengths by the method of Trotter (1970). Femur and tibia were used for stature calculations in most cases, the ranges being ± 29.9mm and ± 35.5mm for males and females respectively; cases where this was not possible are listed and discussed below. Only the lower limb was used, as the plus/minus ranges for upper limb estimates are impractically wide.

References will be given in the text for description and diagnosis of pathological conditions, for which the primary source is Ortner and Putschar (1985). Fractured bones have been dealt with, as far as practicable, by the methods of Roberts (1991), including routine x-radiography. X-radiography has also been carried out on the long-bones of all individuals showing indicators of dietary deficiency. Cranial non-metric traits are based on Berry and Berry (1967) and post-cranial on Finnegan (1978). Prevalences of pathological conditions are given as percentage affected of all relevant individuals and also the number of affected bones or bone-parts as a percentage of the number of relevant bones present; the latter method is more useful for inter-site comparison of disease prevalences (Waldron 1994a, 88).

Comparison with other sites has been made in the text; I have used some examples from Anglo-Saxon cemeteries which do not necessarily cover a similar time period to Barrington, but little would be available were comparison to be restricted to well-preserved and well-reported contemporaneous sites.

4.4 Demography

Palaeodemography presents many problems. In the case of this site, the first is that the cemetery represents depositions over a period of approximately 150 years with probable changing environmental and social conditions.

The second problem is the biases due to intrinsic and extrinsic factors operating between the living population and the ultimately-recovered skeletal population. Intrinsically, the living population which used the cemetery and the mortuary population as found have very different demographic profiles, and their relationship has been discussed recently by Boddington (1987). Waldron usefully illustrates some modern 'dead populations' with which archaeological cemetery samples can be compared (1994a, 18–19). Extrinsic factors include selectivity at the burial stage, loss due to disturbance and poor preservation, incomplete excavation of the whole burial area, and post-excavation loss. Taking these points in order, selectivity usually involves the deposition of babies elsewhere than at the cemetery (see, for example, Molleson 1993, 210–4). Infants have been found at Barrington, but historical and ethnographical examples suggest the numbers are unreasonably low, as discussed in section 4.4.2.2 below. Robbing, coprolite digging and the insertion of land drains have

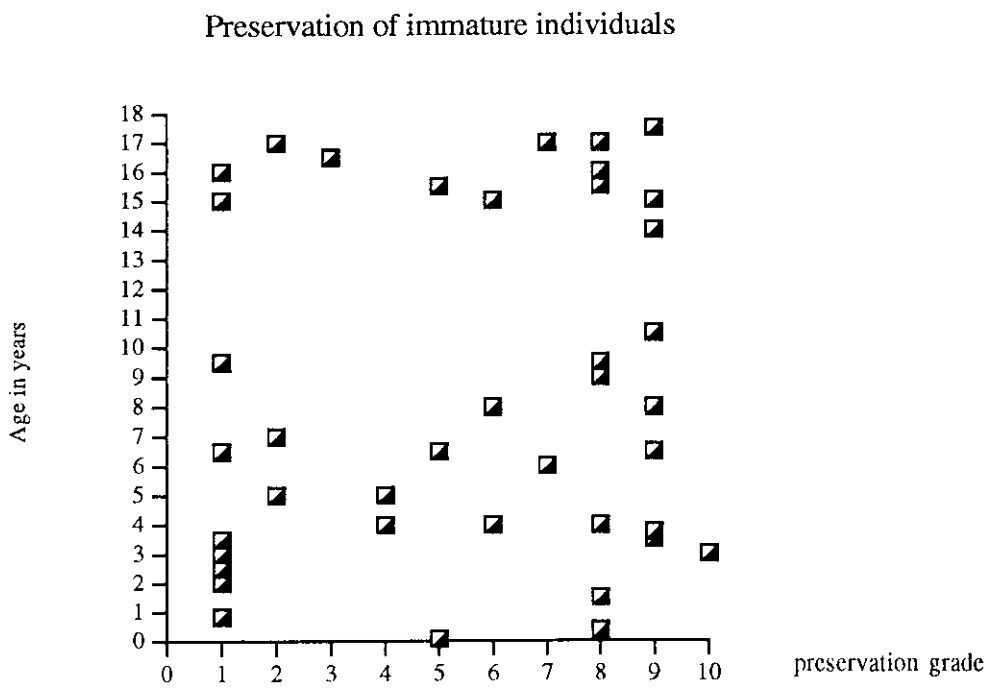


Figure 4.3 Preservation of immature individuals (10 = best preservation)

disturbed some graves but their combined effects on demography are probably relatively random. The question as to whether younger individuals were less well preserved due to their smaller bones and lower bone-mineral content (von Endt and Ortner 1984), and therefore systematically under-represented, was tested by plotting level of recovery against age for all immature skeletons (Fig 4.3): at this cemetery there is no direct relation between increase in age and preservation quality. Approximately 40% of the cemetery has been excavated, so it is possible, though scarcely probable, that the missing infants were buried in an unexcavated area; at least some representatives of all other age and sex groups have been found.

4.4.1 Sex

Despite the problems of palaeodemography discussed above, it is reasonable to assume that the settled rural community served by this cemetery would have had a sex ratio close to 1:1, and the dead population would not be significantly biased by sex selection. If it were not so it would be necessary to hypothesise a cause. Adults are listed by sex below, Table 4.1.

The sex ratio is indeed balanced, consisting of 47% females to 53% males (a ratio of 1:1.1) if the provisionally-sexed skeletons are excluded, and 45% and 55% (1:1.2) if they are included. Female grave goods accompanied four of those whose sex was not skeletally determinable, and when they are added to the figures above, the sex ratio becomes 48% females to 52% males (1:1.09).

There is 99% agreement between skeletal and grave-good sexing at this site, the only contradiction being Sk48 (grave 23), which has apparently male bones with apparently female goods, albeit in a severely disturbed context and with at least one superfluous bone. The Barrington population, however, like those of the local Anglo-Saxon cemeteries of Haddenham and Oakington (Duhig 1993; 1998), has presented certain problems in sexing methods, because, whilst the pelves are strongly sexually dimorphic, the skulls, particularly those of the females, have mixed features. Phenice's (1969) method of sexing using the pubic bone alone is about 95% accurate – and Molleson *et al* (1993) have obtained an accuracy of about 97% on complete skeletons – but the pubic bone is uppermost in the pelvis and therefore particularly vulnerable in supine burials, which predominate here. Most of our '?male' and '?female' skeletons are only moderately well preserved and lack the pubic bone, and sex was determined mainly from the sometimes, contradictory skull features. These mixed sexual features in skulls are indicative of population-specific characteristics and the limitations of the methods available, however, and do not point to intersex individuals. Despite the suggestions of Nordbladh and Yates (1990), genetically intersex conditions due to chromosome abnormalities are uncommon. Individuals with these abnormalities are frequently externally of one sex, and could therefore take ordinary gender roles in society. The same comments apply to Evison's (1987) 'homosexual double burial' from Buckland, one skeleton of which displayed mixed characteristics. Brothwell found nearly 13% of the Buckland population to be problematical, with the males tending to have certain female skull features, so this appears to be another example of population-specific skeletal characteristics.

Table 4.1 Adults listed by sex

Gr	Female	Gr	?Female	Gr	Sex N/D	Gr	?Male	Gr	Male
1	Sk2	2	Sk3A1	17	Sk41	2	Sk3A2	2	Sk3B
3	Sk4	82	Sk432A	18	Sk42A2	4	Sk8	2	Sk3C
5	Sk9			21	Sk46	11	Sk17	7	Sk11
10	1Sk6A			22	Sk47	24	Sk49	9	Sk13A
13	Sk20B			25	Sk50	70	Sk362	12	Sk19
14	Sk29			29	Sk58B*			16	Sk33
18	Sk42B			52	Sk155			23	Sk48
19	Sk44A			58	Sk177			26	Sk51B
19	Sk44B			71	Sk367B			27	Sk52
20	Sk45			72	Sk369A*			28	Sk57
25	Sk119			75	Sk402			29	Sk58A
37	Sk126			86	Sk450			31	Sk103
38	Sk127A			91	Sk459*			32	Sk110
42	Sk135			109	Sk683A*			33	Sk112
47	Sk147B							34	Sk117
49	Sk149							36	Sk125
53	Sk156							44	Sk137
54	Sk161							46	Sk146
55	Sk171							48	Sk148
60	Sk183							50	Sk150
61	Sk184A							51	Sk151
66	Sk322B							63	Sk198
68	Sk354							65	Sk300A
69	Sk359							66	Sk322A
79	Sk428							71	Sk367A
83	Sk436							73	Sk372
84	Sk440A							77	Sk423
90	Sk458							80	Sk430A
93	Sk526							81	Sk431
95	Sk530							85	Sk447A
96	Sk547A							87	Sk451A
105	Sk592							88	Sk453A
106	Sk626A							88	Sk453B
109	Sk683B							92	Sk466A
110	Sk687A							97	Sk551
110	Sk687B							98	Sk553
113	Sk725A							99	Sk576
114	Sk726							100	Sk578
								106	Sk626B
								111	Sk688
								112	Sk719A
								113	Sk725B
								115	Sk727
TOTAL	38		2		14		5		43

*female artefacts

A study to consider the anatomy of the pre-auricular sulcus, its differing forms and its sexual dimorphism, was made by Sampedro (1992) using data from Barrington and Raunds. Her study suggests that Houghton's (1974) 'groove of ligament' form could be divided into two types, only one of which was female-specific; the 'groove of pregnancy' type sulcus was found only in females, confirming its value as a sexing characteristic.

It is not normal practice nowadays to attempt to sex the remains of those who are skeletally subadult, although Molleson (1993, 173–4 and 180) has used two methods with promising results. Obviously in life those skeletally-adolescent might well have been socially adult and fulfilling adult gender roles, and this appears to be the case with skeletons Sk13B (17 years old; grave 9), Sk147A (16–17; grave 47), Sk188 (16; grave 62), and Sk405 (15; grave 76) who were accompanied by male grave goods, and skeletons Sk16B (15–16; grave 10), Sk128 (16–17, with some skeletal evidence for being female; grave 39), and Sk424 (14; grave 78) who all had female grave goods. The 'age of majority' for this population appears to have been about fifteen, perhaps younger for females. Crawford (1991), cites documentary evidence for an age of majority of about twelve during the 7th century, and Wiggins *et al* (in prep) quote Clarke for this age being the transition to adult grave equipment, especially in the case of girls. This is at least two years younger than the apparent transitional age at Barrington, but there is broad agreement that the attainment of social majority was well before skeletal maturity. On the other hand, a few younger children also had sex-specific goods: Sk10A (6 years; grave 6), Sk31 (11–12; grave 15), Sk401 (7; grave 74), Sk547B (10–11; grave 96), Sk584 (3; grave 101), and Sk679 (only 18 months; grave 108) had items from the female suite of goods, so Sk31 and Sk547B might be the youngest socially-adult individuals, bringing the female 'age of majority' close to Crawford's. There is some documentary evidence for an earlier transitional age (H Härke pers comm), the signs of which might be masked in this cemetery by the small sample of children, although suggested by the skeletal evidence from 7th century St Peter's, Broadstairs (Duhig in prep). Similar cases are discussed by Holst (1993, 35–40). Sk632 (aged 5, grave 107) had a spearhead, providing one contradictory example to Pader's (1982, 155) suggestion that children below twelve years of age were more closely associated with the women's sphere and were therefore given female grave goods. The Barrington situation of 10.8% weapon-burials amongst juveniles is close to Härke's (1992a, 150) figure of 9%, although, as I have already suggested, four of our five examples were not necessarily juvenile in their own society's terms.

4.4.2 Age

Figures 4.4 and 4.5 give the age composition of the cemetery, Figure 4.4 presenting age at death of all individuals for whom it could be determined, a total of 127, and Figure 4.5, the data for which are shown in Table 4.2, showing age/sex distribution.

4.4.2.1 Adults

The straight line of Figure 4.4 is clear, and certain apparent 'plateaux' derive from an inability to tune the age determination more finely. An age range for each person was produced of which the median point is presented here (the full age ranges are given in Figs 4.6 and 4.7), and three of the plateaux represent the median points of 21.5 years, 30, and 40 years for

Table 4.2 Ages at death for the whole cemetery population

Age band	Sex N/A	Female	Male	Sex N/D	Total	Percentage
Foetal/neonate	1	–	–	–	1	0.7
Infant	2	–	–	–	2	1.3
Child	26	–	–	–	26	17.6
Adolescent	14	–	–	–	14	9.5
Other immature	3	–	–	–	3	2.0
All immature	46	–	–	–	46	31.1
Adult 1	–	11	14	3	28	18.9
Adult 2	–	15	10	0	25	16.9
Adult 3	–	6	5	0	11	7.4
Adult 4	–	7	12	1	20	13.5
Other adult	–	5	7	6	18	12.2
All adult	–	44	48	10	102	68.9
TOTAL					148	100.0

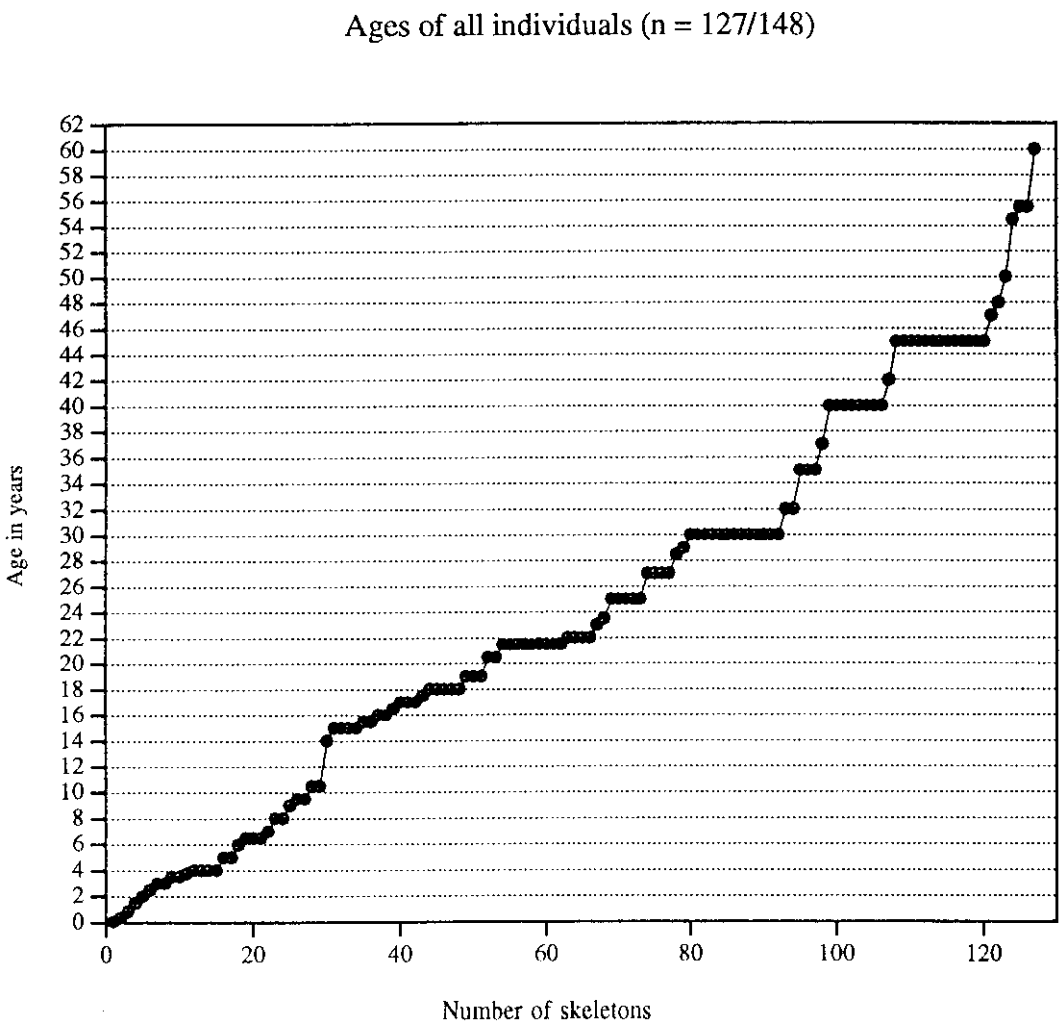


Figure 4.4 Age of individuals at death

Brothwell's three lower age bands. The uppermost plateau at 45 years indicates only the lowest age of Brothwell's fourth category, and is well below the maximum ages established when other methods or combinations of methods are available: three persons were between 45 and 50 at death, three more in their 50s, one at least 60, and any of those aged '45+' could well have been at least as old as these, or older. This flaw in palaeoanthropological methodology – only mitigated by maximum skeletal preservation and use of multiple techniques – has led to a false impression that life expectancy was considerably lower in the past. This is compounded by the confusing concept of 'average age at death'. The average age at death in Barrington cemetery is 25 years and suggests that there was very little life for a young adult to look forward to. The median, 22 years, is even worse. The population average is reduced by childhood deaths, however, and 70% of the adults were 25 or beyond and more than one third were 40 or over.

There were more deaths in the 'adult 1' and 'adult 2' age groups, with males dominating in the former and females in the latter. The loss of young men in warfare and slightly older women due to childbirth immediately spring to mind; female deaths in Anglo-Saxons of this period tend to peak in the 25–35 age group (Wiggins *et al* in prep), which might indicate lessened parturition hazards for the youngest women because maternal nutrition and general health is high, as we find here. Numbers are very small, however, and the graphs are really quite similar. Figures 4.6a and 4.6b give actual male and female ages at death with error bars showing the age ranges around each point: the extremely large 'error' in the male graph relates to Sk3B (grave 2), of which little that could be used for ageing was preserved except the pubic bone, so the Suchey-Brooks range is 23–57 years, and a similarly large 'error' in the female graph is that of Sk147B (grave 47), only represented by a pubic symphysis and some fragments, and of the Suchey-Brooks age range 26–70 years. Error bars are not shown for any persons at or above 45 years of age, because these ages are absolute minima, as explained above.

4.4.2.2 Immature individuals

Individuals which are skeletally immature (ie aged 0–18) total 46 (see following list).

Skeleton No	Grave No	Skeleton No	Grave No
10A	6	300B	65
10B	6	352	67
12	8	369C	72
13B	9	401	74
16B	10	405	76
20A	13	424	78
31	15	430C	80
42A1	18	432B	82
51A	26	440B	84
100	30	447B	85
127B	38	451B	87
128	39	455	89
130	40	466B	92
133	41	529	94
136A	43	547B	96
136B	43	584	101
139	45	586	102
147A	47	587	103
172	56	591	104
175	57	632	107
178	59	679	108
184B	61	719B	112
188	62	719C	112

It has been suggested above that at least seven of these (half of the adolescents: Sk13B, Sk16B, Sk128, Sk147A, Sk188, Sk405, and Sk424), and perhaps also Sk31 and Sk547B, were socially adult, but they are included here to facilitate comparisons with other populations and because biologically they belonged with the adolescents with their unique situation of rapid skeletal growth and hormonal changes. The 31% of immature skeletons in this cemetery is not atypical for prehistory or for the modern undeveloped world (Waldron 1994a, 23), and coincides with Brothwell's (1972, fig 29) figure for Anglo-Saxons.

The ages of all but three of the immature skeletons are shown in Figure 4.7; the three skeletons which could only be determined as 'child or adolescent' have been excluded. Many have no 'error bars' because ageing in this group can be quite precise; six have ranges of more than two years, due to absence of the dentition which is the best age indicator. The gap in late childhood can be seen, corresponding to the usual low point of mortality at age ten or eleven described by Benjamin (1959), but there is no peak in infancy as might be expected.

Data for much of the modern world and 19th century Europe and America are plentiful, and, although comparison is hampered by the usual expression of infant mortality rates as proportions of live births, infant deaths dominate the mortality pattern in all but modern developed countries – and even there they are highest in low-income groups – and presumably have always done so (Stockwell 1993, 225). Waldron (1994a, 18–19) presents mortality distributions with which we can compare that from Barrington: a U-shaped curve typifies undeveloped countries, in which childhood, and especially infant, deaths predominate; that for developing countries has a skewing to the right as childhood deaths are reduced; that for developed countries has a peak skewed far to the right because childhood deaths are almost totally reduced, making more people available to live into adulthood and even old age. In 19th century London, for example, over 50% of deaths were of newborns and infants, but the figure for modern London is 2.5% (Davey 1985, fig 7.1). Putnam (1978) warns against using ethnographic parallels for the ancient world, where density-dependent infections were less significant than in later times, but infant deaths at Barrington are still incredibly low, at 2.1%, suggesting either unparalleled and unlikely optimal child health or the loss of these individuals from the cemetery record. The latter is frequently remarked upon in cemetery reports, so much so that a 'normal' occurrence of neonates and infants calls for special discussion (invoking, for example, infanticide: Mays 1993). We have already rejected taphonomy as the cause of such selective loss: if our missing infants are conveniently clustered in an unexcavated area, the same must have occurred in most ancient cemeteries; disposal in or around the local settlement, as Molleson (1993) has found for Romano-British sites and Duhig (in press) in Bronze Age Lakonia, remains an explanation.

4.5 Stature

Individual adult heights are shown in Figure 4.8a. The adult average is 1.686m (5′6″), ranging between 1.51m and 1.84m (4′11½″ to 6′½″). The females averaged 1.631m, having a range of 0.2m, from 1.51 to 1.71m, and the males averaged 1.733m with a 0.24m range, from 1.60m to 1.84m; males commonly show greater variability because they are more sensitive to environmental stresses (Molleson 1993, 168). The intrinsic error in these stature estimates means that 32 of the males, those whose height has been calculated from femur and tibia combined, could be up to 35.5mm taller or shorter than their given height, and the females up to 29.9mm. As shown in Table 4.3 three male heights are not derived from the femur and tibia. They fall within the range of the other male heights even when their maximum error is taken into account.

Female long-bones were more damaged, so fewer could be measured, and of the 30 female heights, six

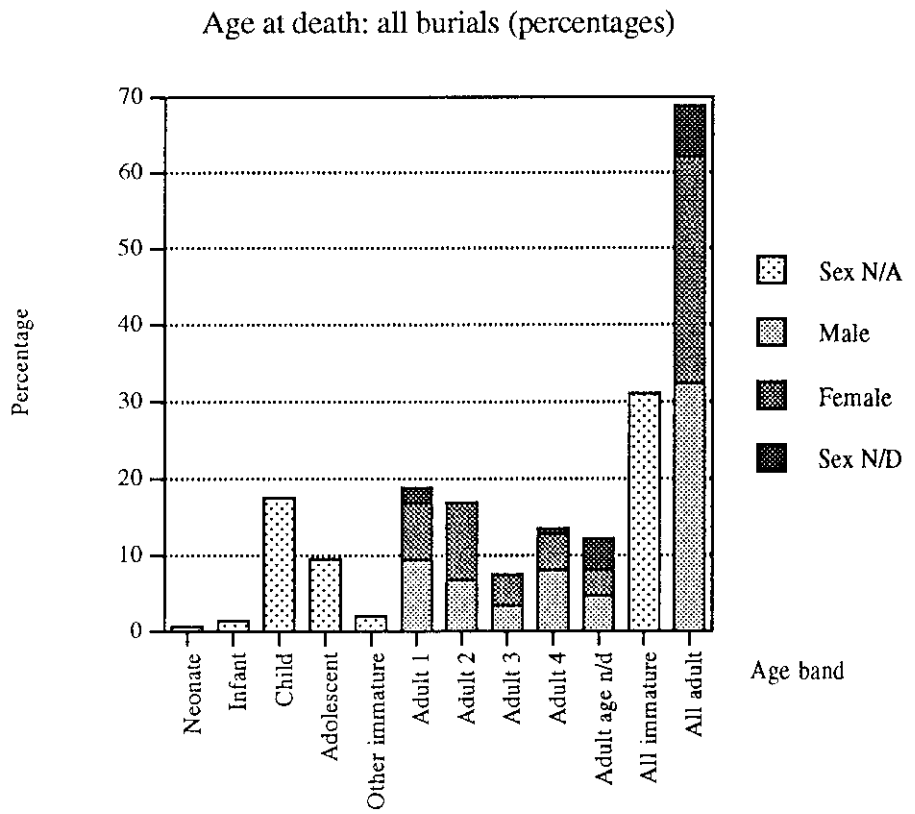


Figure 4.5 Age at death

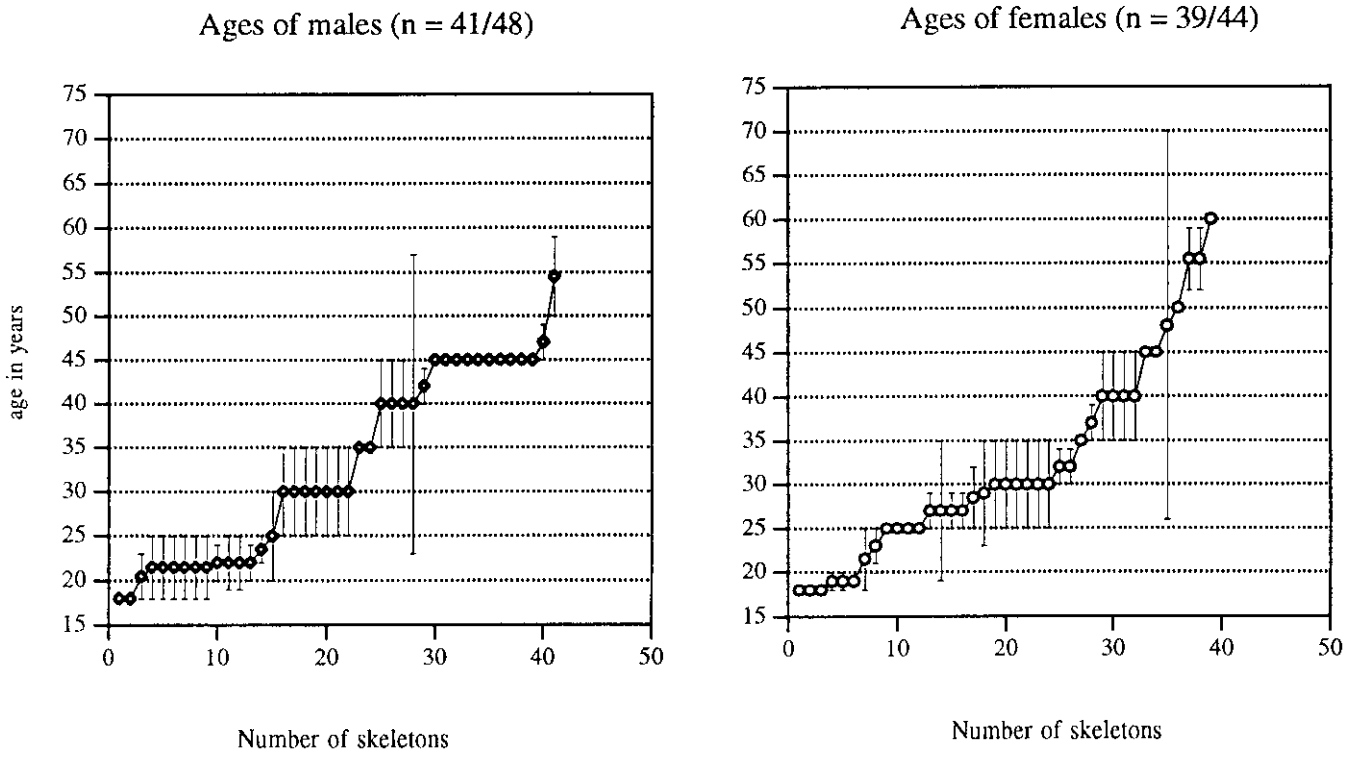


Figure 4.6 Male and female age distribution

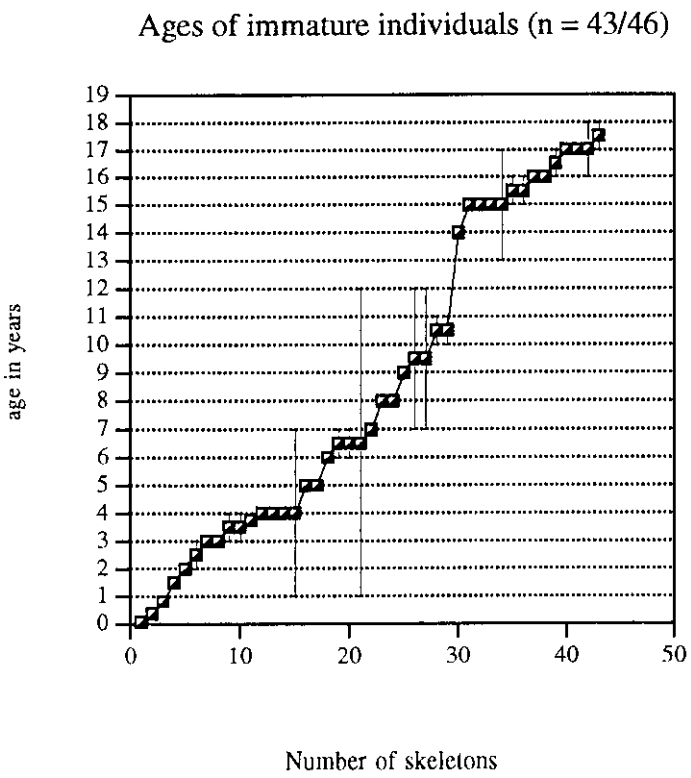


Figure 4.7 Ages of immature individuals

derive from single-bone measurements. The tallest female listed above, Sk44A (grave 19), could have been nearly 1.73m if the maximum plus-error is included, so extending the female range upwards. The very short woman Sk687A (grave 110) could have been more than 1.54m in life, bringing her close to the other female heights – she could have been shorter still, however, less than 1.47m, although this would make her exceptional, and pathologically restricted stature would have to be considered.

The distribution of height frequencies is shown in Figure 4.8b. Although the numbers are rather small, the graph for each sex approaches the 'bell-shaped curve' (normal or Gaussian distribution) typical for adult human heights. Another factor typical for human heights is that the range tends to be the same regardless of the population mean, with a standard deviation of 63.5–71.1mm (Floud *et al* 1990, 15–16). As our mean is 1.686m, 95% of heights (two standard deviations) should fall between 1.54m and 1.83m, and this is what we find, showing that the cemetery population was unexceptional in terms of stature distribution. The average height of the Barrington people was 20mm greater than those from Brandon (Wiggins *et al* in prep (quoting Anderson 1990)), Caister (Anderson 1993), and Castledyke (Wiggins *et al* in prep), and 30 and 40mm greater than North Elmham (Wells 1980) and Great Chesterford (Waldron 1994b) respectively, but just 10mm less than the supposedly exceptional Burgh Castle (Anderson and Birkett 1993). The Burgh Castle pattern is unusual, however, with the female range extending, and the male range commencing, higher than usual, while Barrington remains conventional; the unpublished report on the skeletons from a 7th century Anglo-Saxon cemetery at Headley Drive, Tadworth, Surrey (Waldron nd) has an even higher average, 1.71m, and an extraordinary range with minima of 1.58m and 1.69m for females and males respectively, thus being comparable with the modern British population. It is, however, a very small group.

Stature calculations, although based on long-bone length, contain a correction for progressive shrinkage of intervertebral discs from the age of 30 onwards, and in Table 4.4, the first section shows the decline in male height with age, a point which is taken up below and in Chapter 8. The equivalent female means through the age groups are 1.643, 1.616, 1.625, and 1.63m, not declining with age so obligingly as the males (although the 35–45 age band is scarcely informative as it contains only two individuals).

Härke (1992a) has found that 5th and 6th century Anglo-Saxon males accompanied by weapons have a mean height 20–50mm greater than those without weapons, which he interprets as possibly influenced by ethnic difference, the unarmed being of British descent. He avoids a purely genetic explanation and includes the effects of a different childhood environment favouring growth. A earlier study of a 5th to 8th century Alamannic cemetery demonstrated that statures ranged downwards through the groups 'heavily armed', 'lightly armed' and 'unarmed' (Huber 1968, also reporting the same range in Franks from Heuertz 1957). Of the 35 males at

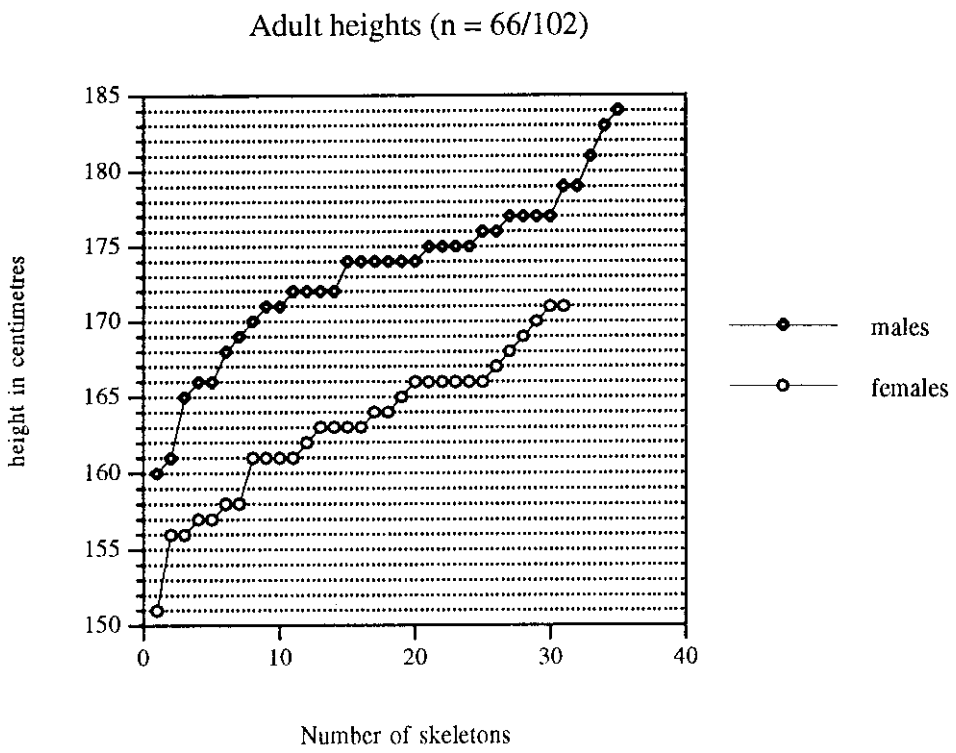


Figure 4.8a Adult heights

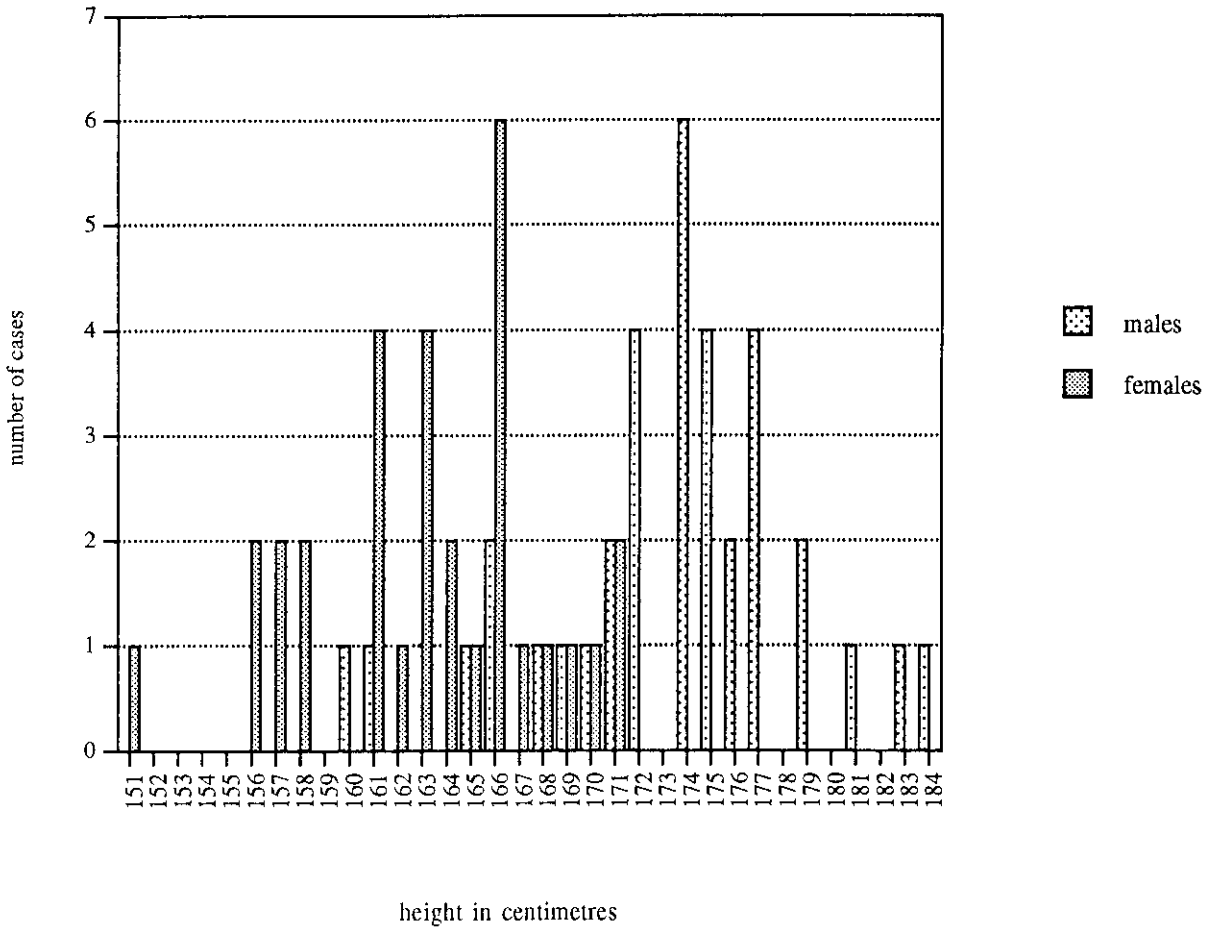


Figure 4.8b Adult height distribution

Table 4.3 Heights not derived from combined lengths of femur and tibia

Number	Grave	Sex	Height (m)	Bone used	± range (mm)
Sk16A	10	F	1.65	tibia	36.6
Sk44A	19	F	1.69	femur	37.2
Sk57	28	M	1.70	tibia	33.7
Sk119	35	F	1.67	fibula	35.7
Sk372	73	M	1.74	tibia	33.7
Sk428	79	F	1.61	femur	37.2
Sk431	81	M	1.68	femur	32.7
Sk626A	106	F	1.63	femur	37.2
Sk687A	110	F	1.51	tibia	36.6

Table 4.4 Men with statures determined

Age or weapon group	n	Mean height in metres
18–25 years	12	1.748
25–35 years	6	1.747
35–45 years	4	1.735
45 + years	11	1.702
Shield/spear group	10	1.753
Shield only group	5	1.730
Spear only group	5	1.708
Single-weapon groups	10	1.719
All armed	20	1.736
All unarmed	15	1.728
All	35	1.733

(Two with statures are unaged)

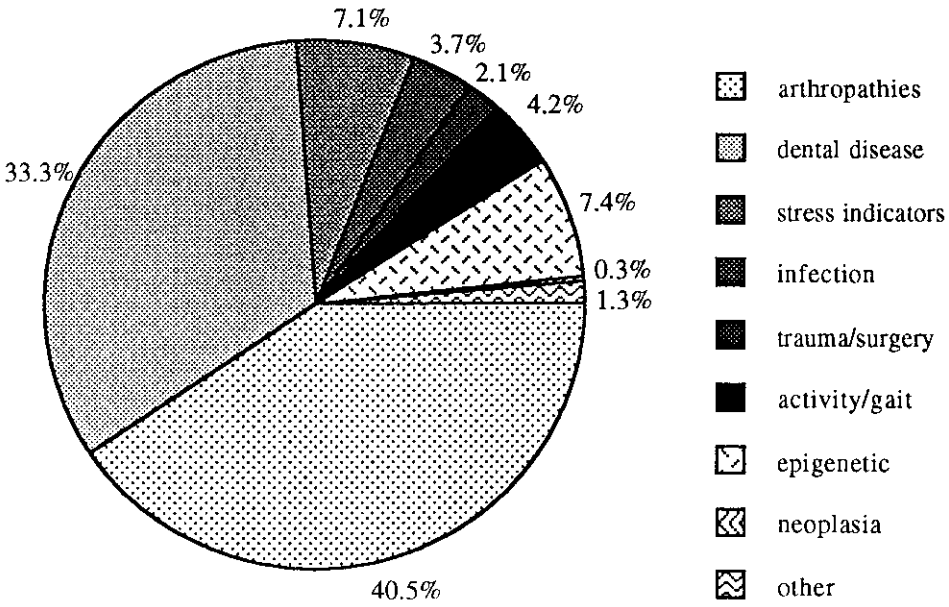


Figure 4.9 Types of pathological condition as a percentage of all pathological conditions found in the cemetery (619 pathological occurrences out of 148 skeletons examined)

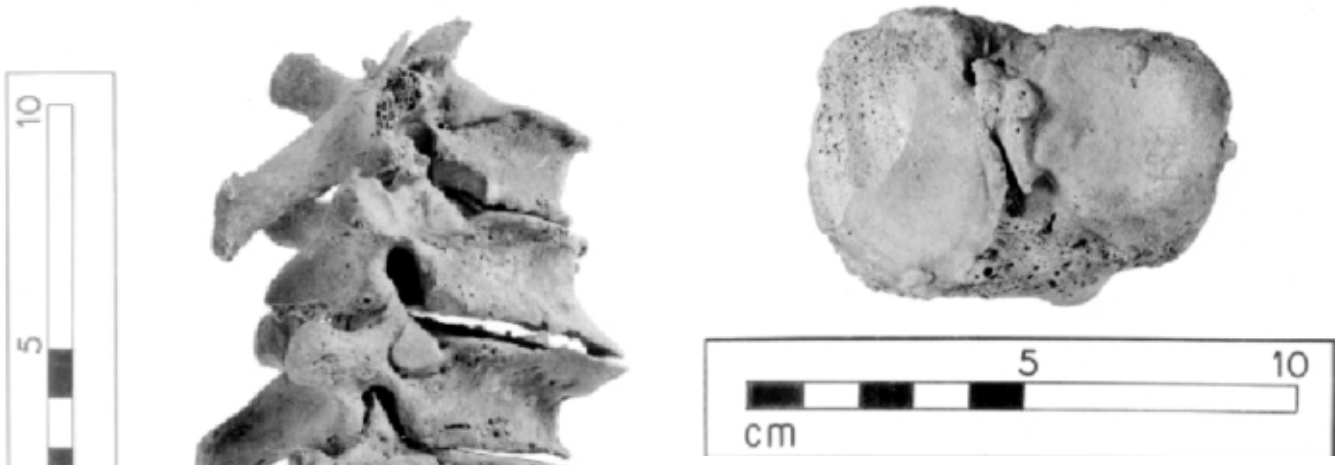


Figure 4.10 Osteoarthritis in Sk3B (grave 2): (a) lipping in the thoracic spine; (b) lipping, cysts, and eburnation in the knee

Barrington for whom height can be calculated, there is only an 8mm difference in the mean heights of the armed and unarmed men, while the markedly greater height of the shield/spear group is clearly due to the predominance of young men in this group (see below, 8.2.2). These findings do not necessarily disprove Härke's hypothesis, although they do not support it; they are discussed further in Chapter 8.

Few bones of subadults could be measured, but those of Sk136B (grave 43) equate to a skeletal age of 1.5 to 2 years, while the dentition is that of a child of about 5 years of age. It is common to find that skeletal age in archaeological populations is lower than chronological age, with the dentition developing inexorably under genetic control but bone growth hampered by dietary or other stress, but if these bones and teeth really are from the same individual – the grave was disturbed – then exceptionally severe stresses on the child are indicated.

4.6 Pathological conditions

Few human ills leave lasting evidence on the skeleton, and most of those that do are difficult to diagnose because of the the complex histories of each disease, the limited repertoire of changes of which bone is capable, and the distorting effects of decay processes. That being said, there are some advantages in having access to the exposed bones and joint surfaces of an uncomplaining and immobile patient whose disorder will not progress and for whom diagnosis is not urgent. At the population level, patterns of disease – palaeoepidemiology – are obscured by similar factors to those discussed in relation to palaeodemography: small sample size with a time depth frequently unresolvable; a static 'dead population' in which, by definition, individuals cannot be compared with their peers who lived on; distortion of the sample by selective burial practices and post-depositional factors. Thus, any suggestions made about disease prevalence in the Barrington population must be tentative, but still add to the wider study of Anglo-Saxon health, disease, and medicine.

It can be seen from Figure 4.9 and Table 3.3 that the arthropathies and dental disease are the most common disorders found at Barrington, just as in almost all archaeological skeletal material. These groups of disorders are prevalent in the modern undeveloped world but are greatly exceeded by infections, which are under-represented in skeletal remains because they predilect the soft tissues and many are of short duration – indeed, often fatal before skeletal changes can be produced. Trauma also is archaeologically under-represented for similar reasons.

In most of the sections below, boxes detail each example of a pathological condition that was found, with more general discussion in the text following. The arthropathies and dental disorders are so numerous that coverage here is necessarily brief, but full analysis sheets are available.

4.6.1 Arthropathies

Any disorder affecting a joint is an arthropathy. The group includes what is known generally as 'arthritis' (or 'osteoarthritis', 'degenerative joint disease', 'osteophytosis', and so on), which is produced by a combination of wear and tear and age degeneration, septic arthritis produced by infection, and a range of conditions with metabolic, auto-immune or poorly-

Table 4.5 Vertebral osteoarthritis and Schmorl's nodes

vertebral disorder	females			males		
	number of sites	number affected	percentage affected	number of sites	number affected	percentage affected
cervical body o/a	358	72	20.1	349	79	22.6
cervical facet o/a	746	54	7.2	737	56	7.6
all cervical o/a	1104	126	11.4	1086	135	12.4
thoracic body o/a	791	111	14.0	638	173	27.1
thoracic nodes	791	124	15.7	638	142	22.3
thoracic body o/a and nodes	791	235	29.7	638	315	49.4
thoracic facet o/a	1521	138	9.1	1269	165	13.0
thoracic rib facet o/a	1898	9	0.5	1564	16	1.0
all thoracic o/a	4210	258	6.1	3471	496	10.2
all thoracic o/a and nodes	4210	382	9.1	3471	496	14.3
lumbar body o/a	327	130	39.8	338	183	54.1
lumbar nodes	327	52	15.9	338	80	23.7
lumbar body o/a and nodes	327	182	55.7	338	263	77.8
lumbar facet o/a	654	114	17.4	694	88	12.7
all lumbar o/a	981	244	24.9	1032	271	26.3
all lumbar o/a and nodes	981	296	30.2	1032	351	34.0
sacral body o/a	27	4	14.8	30	8	20.0
sacral nodes	27	0	0.0	30	2	6.7
sacral body o/a and nodes	27	4	14.8	30	8	26.7
sacral facet o/a	50	3	6.0	58	0	0.0
all sacral o/a	77	7	9.1	88	6	6.8
all sacral o/a and nodes	77	7	9.1	88	8	9.1
ALL o/a	6372	635	9.7	5677	766	13.5
ALL body o/a	1503	318	21.1	1355	443	32.7
ALL nodes	1503	176	11.7	1355	224	16.5
ALL o/a and nodes	6372	811	12.7	5677	990	17.4

understood causes such as gout, rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, and DISH. Rogers *et al* (1987) have provided a guide to the classification of the arthropathies as found in dry bone. Although many conditions in this category are caused by chronic or acute trauma, they are considered here to relate them to the other arthropathies. Figure 4.10 shows osteoarthritic change in typical areas of one skeleton.

4.6.1.1 Osteoarthritis

Most of the osteoarthritic change is in the spine, the usual archaeological pattern (Ortner and Putschar 1985, 430). Up to twelve sites capable of demonstrating independent patterns of change were examined for each vertebra: upper and lower body surfaces, each facet joint and, in the thoracic vertebrae, body and transverse-process rib articulations. Scoring was for osteophytic lipping of joint margins, joint-surface cysts and breakdown, eburnation, ankylosis and osteophytes on joint surfaces. For logistical reasons this study counts any one of these changes as indicative of osteoarthritis, and thus diverges from Rogers *et al* (1987), who require a combination of changes. The presence of rib articulations on transverse processes was not clearly recorded, so their presence has been overestimated and thus the percentage affected is underestimated to an indeterminable degree and is not considered independently. The total spinal osteoarthritis, therefore, is also underestimated, but this is to some extent balanced by the over-diagnosis previously mentioned. Schmorl's nodes were noted separately: they are indentations in the vertebral body surfaces produced by pressure from the soft, interior *nucleus pulposus* of the disc which has herniated through its firm outer

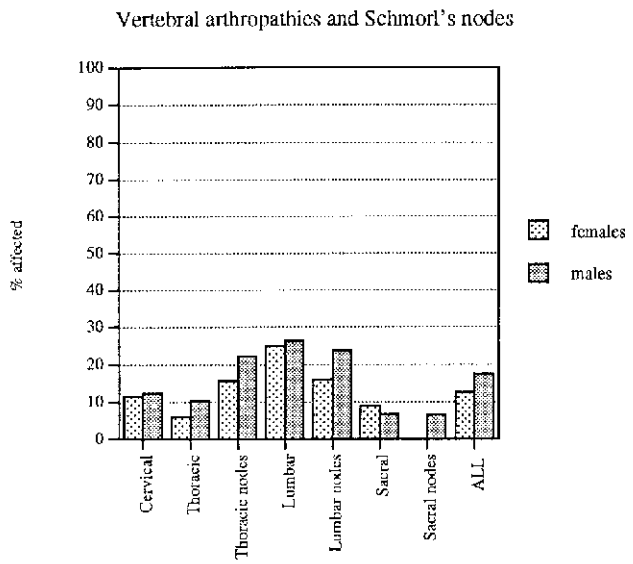


Figure 4.11a Vertebral arthropathies and Schmorl's nodes

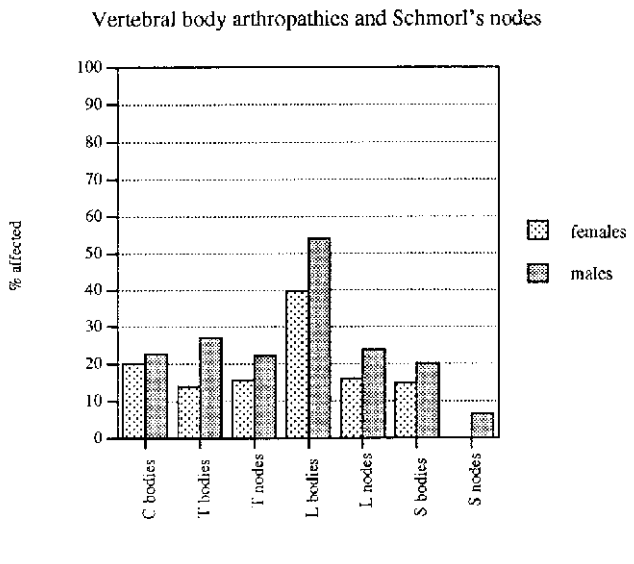


Figure 4.11b Vertebral body arthropathies and Schmorl's nodes

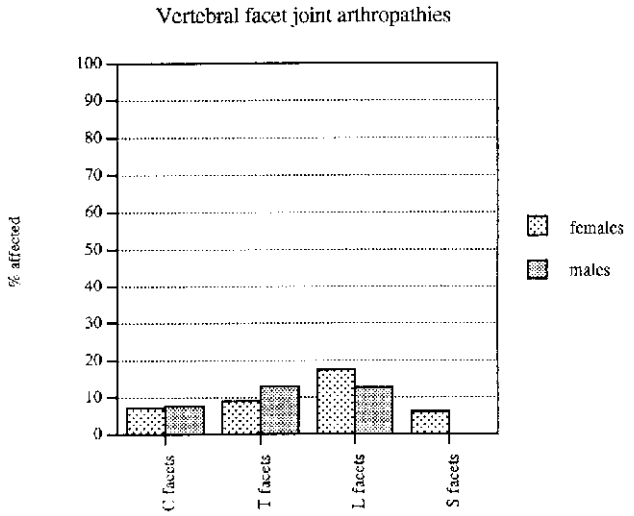


Figure 4.11c Vertebral facet joint arthropathies

covering, and are indicative of disc degeneration resulting from weight-bearing stresses on the spine (Resnick and Niwayama 1988, 1527–8). Most people over 40 years of age have such nodes (Ortner and Putschar 1985, 421).

Table 4.5 presents the numbers recovered of each group of sites (that is, vertebral bodies, facet joints and rib articulations) and the numbers and percentages affected, and Figure 4.11 shows the findings in column graphs.

Overall, 85% of the preserved adult spines (70/82) have at least one type of change, of which osteophytic lipping dominates. The thoracic and lumbar vertebrae are the most affected, unsurprisingly because they take a greater amount of body weight, but although lipping and Schmorl's nodes are common they are rarely severe. Vertebral body changes increase markedly from thoracic to lumbar vertebrae but nodes do not. Males have slightly more spinal disorders than women. When only the vertebral bodies are considered (Fig 4.11b) the men have both more osteoarthritic change and more Schmorl's nodes, up to 78% in the lumbar spine compared with the women's 56%, a similar pattern to that found at Castledyke (Wiggins *et al* in prep). Fewer changes are found in the vertebral facet joints (Fig 4.11c), but women show slightly more pathological changes than men in the lumbar and sacral facets. These differences might be caused by division of labour producing different stresses on male and female spines, by stature and body-form differences or, probably, both.

4.6.1.2 Non-spinal osteoarthritis

Table 4.6 shows the distribution of non-spinal osteoarthritic change, scored as in the previous section. To give a broad picture, different compartments of the same joint and adjacent joint surfaces have been combined although different movements can take place in each area (for example 'elbow' consists of humeral trochlea, capitulum and olecranon fossa, radial head and tuberosity, ulnar olecranon process, trochlear notch and radial notch). Rib heads have been counted with the vertebrae with which they articulate. Enthesopathies and changes in non-synovial joints are listed beneath: while not strictly arthritic because they occur away from joint capsules, they represent damage to joints and new bone growth into tendons and ligaments indicative of activity stresses; those enthesopathies which are associated with the condition DISH are described in the succeeding section.

A total of 179 osteoarthritic changes are found in

Table 4.6 Distribution of non-spinal osteoarthritic change

Non-spinal osteoarthritis												
	males			females			n/d			all		
	L	R	all	L	R	all	L	R	all	L	R	all
temporo-mandibular joint	2	2	4	0	0	0	0	0	0	2	2	4
sterno-clavicular joint	1	2	3	4	7	11	0	0	0	5	9	14
shoulder	2	3	5	2	4	6	0	0	0	4	7	11
elbow	3	18	21	4	9	13	0	0	0	7	27	34
wrist	5	3	8	7	9	16	0	0	0	12	12	24
hand	8	7	15	0	4	4	0	0	0	8	11	19
hip	3	3	6	0	0	0	0	0	0	3	3	6
knee	6	0	6	3	0	3	0	2	2	9	2	11
ankle	0	0	0	0	0	0	0	0	0	0	0	0
foot	21	17	38	10	6	16	2	0	2	33	23	56
ALL	51	55	106	30	39	69	2	2	4	83	96	179
Enthesopathies / non-synovial joint changes												
manubrio-sternal joint	0	0	0	–	–	1	0	0	0	0	1	1
sacro-iliac joint	2	2	4	2	2	4	0	0	0	4	4	8
costo-clavicular ligament impression	2	1	3	0	0	0	0	1	1	2	2	4
hand phalanges (palmar)	10	18	28	0	0	0	0	0	0	10	18	28
patella	2	2	4	1	1	2	0	0	0	3	3	6
popliteal line	1	1	2	0	0	0	0	0	0	1	1	2
calcaneal tuberosity	0	0	0	0	0	0	1	0	1	1	0	1
ALL	15	22	37	1	1	2	1	1	2	17	24	41

38 individuals, nineteen males, sixteen females, and three of indeterminable sex. This is 37% of the adults. The age distribution shows the expected tendency for increase with age: adult 1, including a seventeen-year-old, six (21% affected of the number in this age band, including the three seventeen-year-olds from the adolescent group); adult 2, nine (33%); adult 3, seven (70%); adult 4, thirteen (65%), unaged, three (16%). Eburnation is found three times at the right elbow, four times in the wrist, twice at the right first metacarpo-phalangeal joint, three times at the knee and four times at the left first metatarso-phalangeal joint. Most other changes are combinations of lipping and cysts, with only eight examples of joint-surface osteophytes, several of which are on contiguous surfaces. The right elbow has six times as many changes as the left in the males, and more than twice as many in the females, which, together with the eburnation pattern, suggests the usual right-handed predominance.

The rank order of frequency of major-site joint involvement is shown in Table 4.7. Two methods have been used so that readers may choose the figures which are comparable with their own methods: firstly simple proportions of the total number of recorded non-spinal osteoarthritic changes, and secondly these figures divided by the number of joint compartments in each area, an adjustment which assumes that one activity can damage more than one compartment or joint in an area, thus causing redundancy in its effects. Recall that the prevalence in the spine was 85% of all spines.

In modern populations the knee is most frequently affected, but this is rarely the case in ancient populations. Waldron's (1995) study of the relative distribution of osteoarthritis, using a ranking system roughly comparable to the left side of the above table – but using the stringent criteria of Rogers *et al* (1987) for diagnosis of osteoarthritis – shows the shoulder highly affected, while this is not the case at Barrington. Conversely, the elbow is not highly affected elsewhere (apart from ancient Peru: Hrdlicka, quoted in Ortner and Putschar 1985, 422) but is at Barrington; the right elbow, especially in males, is predilected. The adjusted figures, however, reduce the apparent

Table 4.7 Rank order of frequency of major-site joint involvement

rank	joint	number of o/a changes	%	joint	adjusted number	%
1	foot	56	31.3	SCJ	14.0	31.7
2	elbow	34	19.0	hip	6.0	13.6
3	wrist	24	13.4	knee	5.5	12.4
				shoulder	5.5	12.4
4	hand	19	10.6	elbow	4.25	9.7
5	SCJ	14	7.8	TMJ	4.0	9.0
6	knee	11	6.1	foot	2.25	5.1
	shoulder	11	6.1			
7	hip	6	3.5	wrist	1.7	3.8
8	TMJ	4	2.2	hand	1.0	2.3
9	ankle	0	0.0	ankle	0.0	0.0
ALL		179	100.0		44.2	100.0

severity of elbow involvement and give prominence to the sterno-clavicular joint, which is the articulation of the whole shoulder girdle with the trunk and which thus participates in all movements of the shoulder.

The enthesopathy producing lipping of the palmar surface of phalanges, of which we have 28 examples in three males, probably results from flexion of the fingers in a strong grasp (Kennedy *et al* 1986), a likely action for men in a rural community.

4.6.1.3 DISH (Fig 4.12)

'Diffuse idiopathic skeletal hyperostosis' (DISH) is a systemic condition of older adults, particularly males, in which vertical osteophytes appear on the right antero-lateral area of thoracic vertebrae and elsewhere on other vertebrae, with calcification in non-skeletal elements (Rogers *et al* 1987, 184, 186–8; Rogers and Waldron 1995, 48). Clinically, fusion of three contiguous vertebrae is required for diagnosis, but archaeological cases are likely to demonstrate earlier stages of the disease. High calorie intake is implicated in its development, suggesting that luxurious living is a causative factor (Waldron 1985).

Sk150 (grave 50) is a man probably at the upper end of the 35–45 age range. The changes in his spine are variable as to side, and are thus not strictly diagnostic of DISH but the ankylosis of the two thoracic vertebrae is suggestive of this condition, and the new bone at joints and entheses is characteristic (see Table 4.8). The case of Sk688 (grave 111), an older man, is convincing, with most of the spine involved and vertebral-body lipping located anterolaterally in the thoracics, and widespread new bone formation in and around joints and entheses (see Table 4.8). Neither of these two men had a particularly grand burial but this is as likely to have been due to their age as to their affluence; high calorie intake is not necessarily restricted to the rich, nor is there likely to have been the opportunity for marked differences in diet in such a society, and causes might be sought in individual metabolism and eating styles. Rogers and Waldron (1995, 48) warn against drawing inferences about individuals – rather than comparing populations – from such findings.

4.6.1.4 Septic arthritis

The woman Sk440A (grave 84) had a variety of arthritic changes to her spine, one knee, and one elbow which definitely include one infected area and might result from a traumatic episode. These and her many other pathological conditions are discussed below as *Sk440A, a case study in multiple pathological changes* (section 4.6.10).

4.6.2 Dental disease

Throughout history infected teeth and gums and tense, discharging abscesses must have caused great misery through pain, debility, and reduced resistance to other diseases. Dental caries was less frequent in the past because of lack of refined sugars in the diet, but wear by coarse foods exposed the tooth pulp, admitted infection, and produced apical (root-tip) abscesses. Severe attrition of tooth crowns produces uneven chewing stresses, so loosening the teeth and allowing infection into the supporting soft tissues, leading to gingival (gum-margin) abscesses. Teeth are shed if infection and recession of supporting tissues continues, and tooth loss in archaeological populations usually

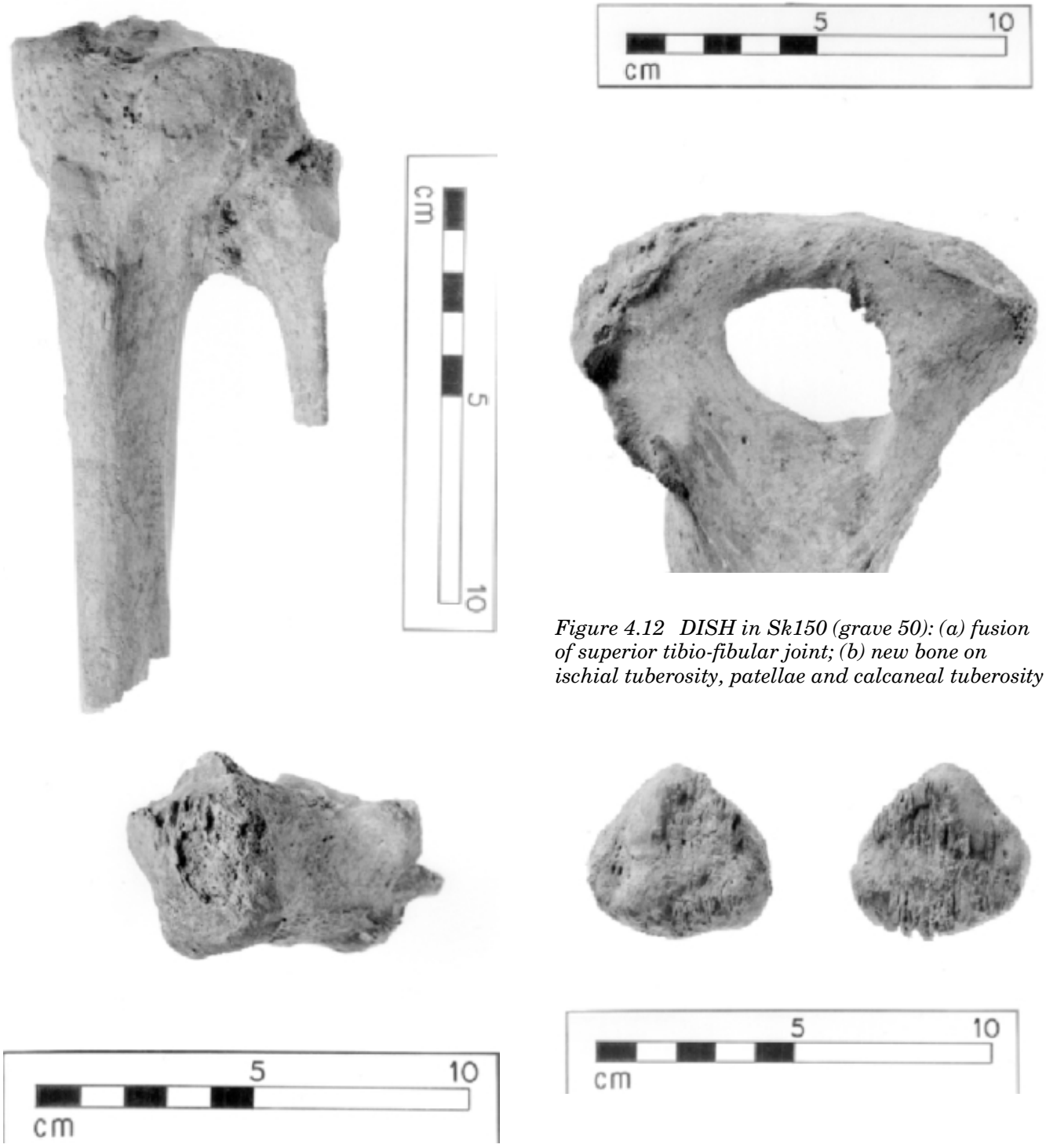


Figure 4.12 DISH in Sk150 (grave 50): (a) fusion of superior tibio-fibular joint; (b) new bone on ischial tuberosity, patellae and calcaneal tuberosity

Table 4.8 Possible cases of DISH

Sk150	G50	M 35–45	manubrium: fusion of R 1st rib, perhaps fusion of L 1st rib; spine: lipping of T5–10, T9/10 ankylosed on R (but variable L/R involvement elsewhere), spurs within arches from T2 caudally; L tibia/fibula ankylosed at superior tibio-fibular joint, lipping at inferior joint; R tibia, lipping at inferior joint; osteophytes on ischial tuberosities, femoral foveae, patellae, calcaneal tuberosities
Sk688	G111	M 45 +	lipping of C5–L5 (R antero-lateral in thoracics but not vertical), spurs within arches; lipping of glenoid fossae, distal humeral articulations, R olecranon fossa and radial notch, R radial head, most hand bones, L femur antero-medial surface of distal articulation, L tibia proximal articulation; osteophytes on distal ribs with some ossified costal cartilage, deltoid tuberosities, R radial tuberosity, iliac crests, ischial tuberosities, acetabular joint surfaces, femoral foveae, lineae asperae, L tibia distal interosseous line, tibial tubercles, calcaneal tuberosities

Table 4.9 Dental disease

Dental disease prevalence in each age band (percentages in dentitions)			
age band	**caries**	**abscesses**	**ante-mortem tooth loss**
adult 1	11.5	4.0	12.0
adult 2	39.1	28.6	27.3
adult 3	50.0	31.2	50.0
adult 4	50.0	66.7	75.0

Dental disease prevalence in the sexes (percentages in dentitions)			
sex	**caries**	**abscesses**	**ante-mortem tooth loss**
female	43.2	21.6	42.1
male	20.9	30.0	35.0
sex n/d	25.0	0.0	50.0
average	30.9	24.7	50.0

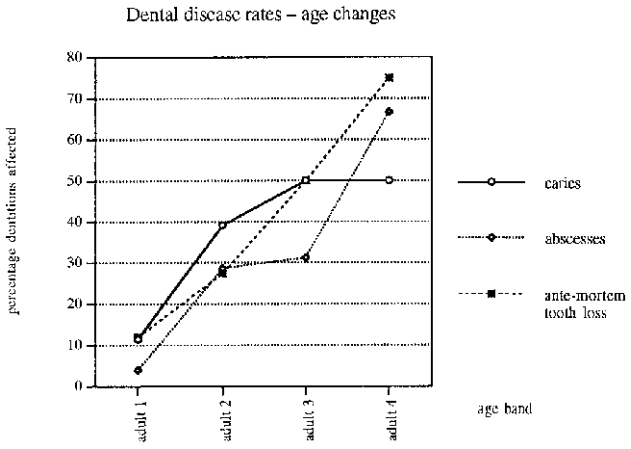


Figure 4.13a Dental disease rates – age changes

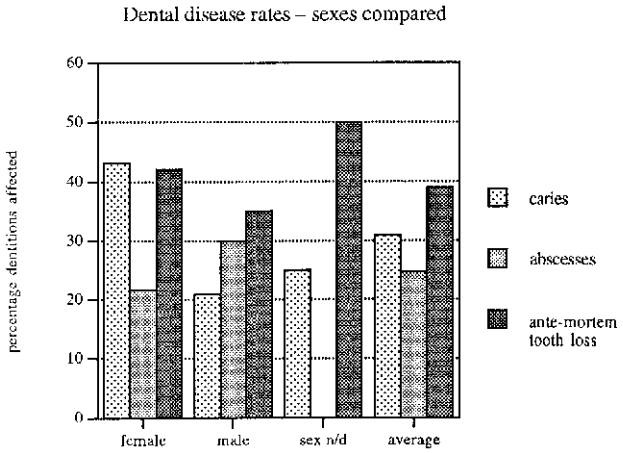


Figure 4.13b Dental disease rates – sexes compared

results from this type of dental history. Caries is by no means, however, absent in ancient dentitions, as will be seen in Table 4.9.

Caries has been calculated as the percentage of dentitions with at least one caries cavity out of the total number of jaws containing any teeth at all; abscesses and ante-mortem tooth loss as the percentage of dentitions with at least one abscess or tooth lost in life out of the total number of jaws in which any undamaged sockets are present. Figure 4.13a presents the upper part of Table 4.9 as a line graph, showing the unsurprising rise of dental disease through the age bands. The apparent decline of caries with increasing age indicates the shedding of carious teeth. In the lower part of the table, and in Figure 4.13b, a sex difference in dental disease can be seen: the female prevalence of caries is over twice that of the male, a normal observation because women tend to have more caries than men (Hillson 1986, 287).

Considering individual teeth and alveoli (1,600 teeth and 1,500 alveoli), percentage caries and ante-mortem tooth loss are 3.2% and 7.1% respectively, half Brothwell's figures of approximately 6% and 15% (Brothwell 1972, Figs 55 and 56), but the former conforms to general findings that Anglo-Saxons are an exception to the trend of increase in caries from Neolithic to recent times (Hillson 1986, 296).

4.6.3 Stress indicators

Various types of physiological stress are thought to be indicated by four pathological changes. Each condition is outlined below, and incidence at Barrington discussed after Table 4.10.

4.6.3.1 Dental enamel hypoplasia

Tooth-enamel formation can be disrupted by several stress factors, the most common being starvation and

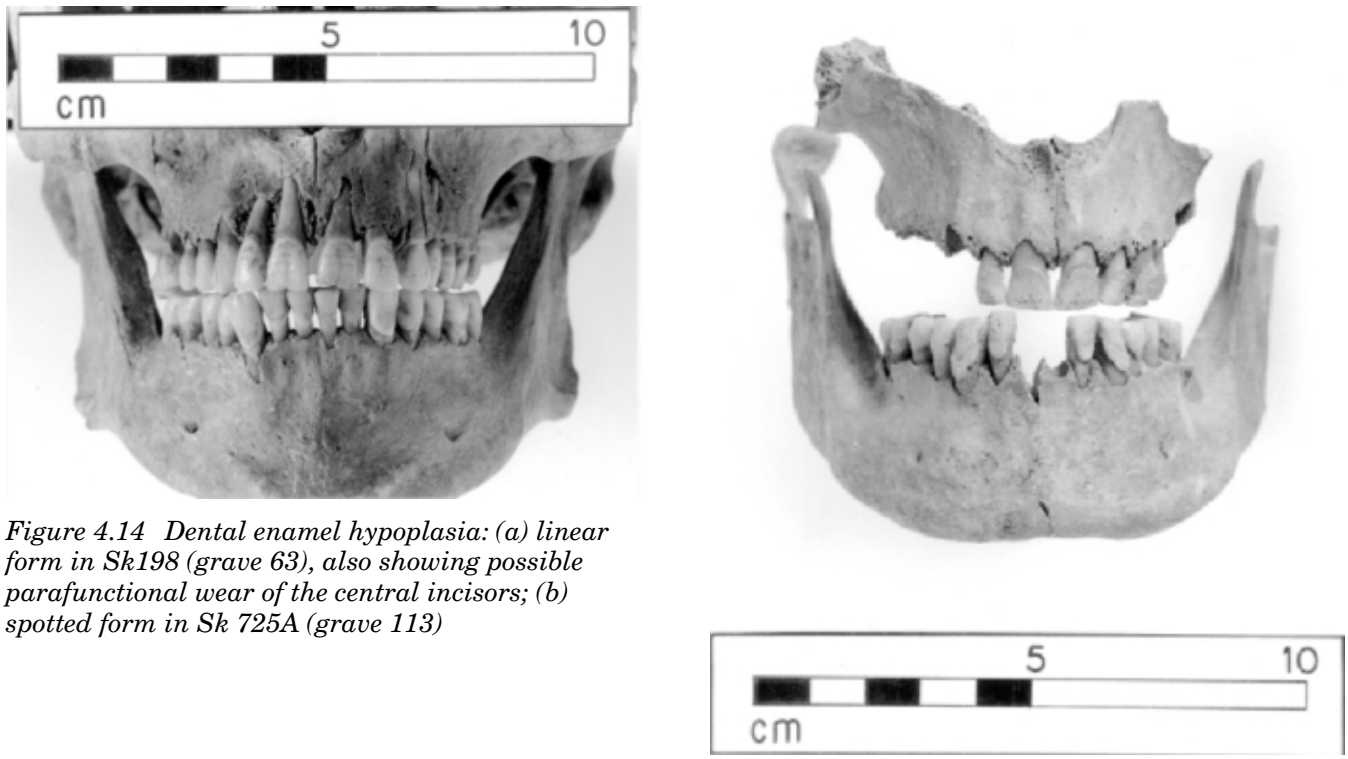


Figure 4.14 Dental enamel hypoplasia: (a) linear form in Sk198 (grave 63), also showing possible parafunctional wear of the central incisors; (b) spotted form in Sk 725A (grave 113)

severe feverish illness (Pindborg 1970, 117). The changes on the surface are linear or, less commonly, spotted indentations in the enamel, and are referred to by various terms of which 'dental enamel hypoplasia' or just 'hypoplasia' are used here. The two worst examples from the site are shown in Figure 4.14.

The tooth crown develops at a known rate (eg Moorrees *et al* 1963a; 1963b) regardless of stress on the organism, so the location of a hypoplastic area indicates the age at which it was formed, determined from one of the published tables (I use Rose *et al* 1985, 294). Hypoplasias in living and archaeological populations tend to develop between two and four years (Goodman 1988) and this can often be related to age of weaning when this is known. However, Goodman and Armelagos (1985, 503) have pointed out that, in their study, 'the highest density of hypoplasias on both tooth crowns was just cervical to the midpoint, suggesting that developmental rates and crown geometry may influence the ability of the crown to record stressful events'. In other words, the two to four year peak may not represent time-specific environmental impacts but demonstrate increased susceptibility to damage from relatively minor causes at this phase of development. Whilst bearing this in mind I have recorded the locations of all hypoplastic defects.

4.6.3.2 *Cribra orbitalia* and porotic hyperostosis

Iron-deficiency anaemia is the commonest anaemia in the modern world and the most significant trace-element deficiency (Waldron 1989, 58). It results primarily from malabsorption of dietary iron and parasitism but not, surprisingly, inadequate diet (Stuart-Macadam 1989a, 212–3). It is now known that iron levels which would be considered low in a developed country are normal in populations with chronic infections, and are protective – the iron is withheld from invading organisms which need it but cannot make or store it themselves. This is known as the anaemia of chronic infection. Thus, signs of 'iron-deficiency anaemia' in an ancient population are probably indicating a healthy response to infectious disease (Kent *et al* 1990).

The causes of bone changes are described by, for example, Stuart-Macadam (1989a). Red blood cells are produced in the bone marrow. When anaemia is severe, the marrow space expands, thins the other bone layers by pressure atrophy, and eventually breaks through: in the skull, the overdeveloped diploë of the skull vault (the central, marrow-containing layer) becomes visible where the outer table has been destroyed and produces the 'spongy' or 'sieve-like' appearance of *cribra orbitalia* in the orbits (Fig 4.15) and porotic hyperostosis on the vault. On x-radiograph the thickened, radiating bone columns of the vault give a distinctive 'hair-on-end' appearance. In childhood, marrow occupies the whole skeleton and marrow-expansion changes can appear in any bones, but often these childhood anaemic episodes resolve and the skeletal evidence is resorbed before death. However, because red marrow is still present in the adult skulls, an episode at any time in life can potentially produce skull changes.

4.6.3.3 Harris lines

Bone growth can be inhibited by severe physiological stresses, of which infectious diseases and malnutri-

Figure 4.15 Cribra orbitalia *in both eye orbits of Sk133 (grave 41)*

tion are the most common in humans (eg Harris 1933; Park and Richter 1953). Accelerated ('catch-up') bone growth when the stressor is removed produces radiographically-dense lines, most obvious at the ends of long bones, as in Figure 4.16, their position representing the age at which they were formed (Garn *et al* 1968). Unfortunately, no catch-up means no line, so the most severely afflicted individuals might show no lines at all, and lines are resorbed over about ten years, and so are uncommon in older adults (Garn *et al* 1968; Gindhart 1969). The correlation of Harris lines with other indicators of physiological stress is not yet well understood, so, for this report, all skeletons with hypoplasia and *cribra orbitalia* were also x-radiographed for Harris lines, and the various stress indicators tabulated together.

In Table 4.10, sex is given as 'not applicable' for juveniles, except for those who were sexed by grave goods: these sexes are shown in parentheses. *Cribra orbitalia* has been scored by the Stuart-Macadam (1982) descriptive method, although I suggest below a rearrangement of the developmental stages. The presence of hypoplastic enamel on a tooth is shown as the tooth number (from 1, central incisor to 8, third molar, with upper teeth underlined), location is the distance of the defect from the cemento-enamel junction – where the tooth enamel joins the root – and hypoplastic spots are shown with an 's'. Radiographs for Harris lines were taken of the ankle (distal tibia and/or fibula), as favoured in modern clinical practice, except in two cases where only the knee (distal femur) was available; 'n/av' signifies no long bones available, 'n/d' that bone condition rendered presence of lines indeterminable.

Although there are 148 individuals in the sample, the prevalence of each stress indicator has been calculated as the percentage affected of the number

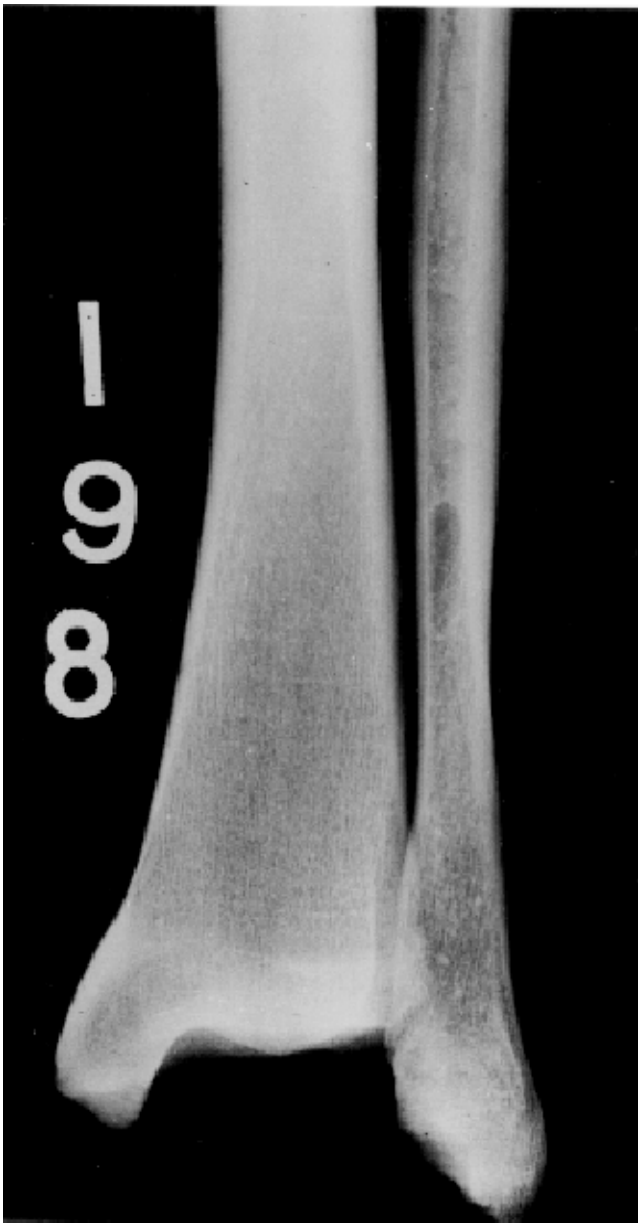


Figure 4.16 Several Harris lines shown by x-radiograph in the tibia of Sk198 (grave 63)

of appropriate skeletal parts recovered. Thus, there are 29 affected skulls out of 124 skulls recovered (23%), with two, Sk198 (grave 63) and Sk576 (grave 99), having both *cribra orbitalia* and hypoplasia. Porotic hyperostosis was suspected in the vault of Sk198, which exhibited porosity on the lower parietals and upper occipital bone. Radiographically, only the eye of faith could perceive a 'hair-on-end' appearance, so I choose caution and discount the case. Porotic hyperostosis appears to be have been infrequent in the Old World.

Hypoplasia is present in sixteen out of 115 dentitions (14%), of which only one (Sk632, grave 107) was a deciduous dentition. There are 81 affected teeth (4%). Absolute rates vary considerably between populations – with a tendency to increase from hunter-gatherers to agriculturalists, even up to 80% prevalence (Lukacs 1994, 281) – and Barrington is

Table 4.10 Indicators of 'stress indicators'

Skeleton number	Grave	Sex	Cribra PSM stage	Porotic hyperostosis	Hypoplasia tooth (mm from CEJ)	Harris lines
9	5	F	–	–	8 (s3.8)	3
16B	10	N/A	2	–	–	1
19	12	M	4	–	–	3
31	15	(F)	3	–	–	0
45	20	F	–	–	1, 2, 3	5
48	23	M	–	–	3 (4.3 and covering), 6 (1.8), 7 (1.6, 2.4), 3 (covering), 4 (5.2), 6 (1.8, s3.4), 7 (s4.3), 8 (2.0, s3.3),	0
112	33	M	–	–	3 (5.3)	5
125	36	M	–	–	6 (2.9), 7 (2.4), 8 (2.0)	0
128	39	(F)	–	–	all (including s)	0
133	41	N/A	3	–	–	n/av
156	53	F	2	–	–	10
172	56	N/A	4	–	–	0
188	62	(M)	4	–	–	7
198	63	M	4	see discussion	all, but marked in 1, 2, 3, 4 (covering)*	11
372	73	M	–	–	3 (6.2, 1.4), 4 (2.1), 8 (1.2)	0
428	79	F	–	–	1, 2, 3 (covering)	0
430A	80	M	–	–	2 (5.6), 3 (5.8–5.5)	n/av
436	83	F	4	–	–	0
447A	85	M	4	–	–	0
451B	87	N/A	–	–	8 (s3.0, s4.0)	n/av
453A	88	M	–	–	3, 3 (covering), 4 (3.3), 4 (4.3)	0
455	89	N/A	–	–	5 (s3.7)	4
576	99	M	1	–	1, 2, 3 (covering)	3
584	101	(F)	3	–	–	4
586	102	N/A	2	–	–	14
592	105	F	1	–	–	2
632	107	(M)	–	–	1 (4.8, 3.2), 2 (6.7), 3 (6.4), 6 (2.9)	n/d
683B	109	F	1	–	–	0
725A	113	F	–	–	2, 3, 1, 2, 3 (s covering)	0

* patch of deeply-indented enamel on upper left 1, 2.5mm × 1mm

not exceptional by general standards. Few other Anglo-Saxon site reports give comprehensible hypoplasia prevalences, but the rate is low compared to the 9% of affected teeth at Castledyke or the 13% at Addingham (Wiggins *et al* in prep), but high compared to the Spong Hill inhumations (less than 5% affected individuals, calculated from Putnam in Hills *et al* 1984, 16). They are all, however, within the same order of magnitude. Of the hypoplastic individuals nine were male and five female (and two unsexed), which findings are similar to Anderson's (1993, 261) that adults and males were more affected by hypoplasia at Caister; she suggests that children were killed by acute disease episodes such as infections but that the hypoplasias developed in chronic stress states. Unlike Caister, however, the Barrington males also had the more severe examples of hypoplasia, suggesting that they were exposed to greater physiological stress in childhood or, probably, were more susceptible to those stresses (Molleson 1993, 168).

Cribra orbitalia is found in fifteen of 82 eye orbits (18%), seven cases in children and eight in adults. The prevalence is the same as that at Caister (Anderson 1993), similar to Castledyke's 20% (Wiggins *et al* in prep), but greater than several other comparable sites (eg Morning Thorpe 10%: McKinley 1987; Great Chesterford and Tadworth 6%: Waldron 1994b and nd; Portway 3%: Wells 1985). By contrast, the prevalence at Romano-British Poundbury was 28% (Molleson 1993, 185) and maize-agriculturalist American sites have prevalences between 31% and 52% (Lallo *et al* 1977). Females and males had half each of the adult cases, which conforms with Stuart-Macadam's (1989b, 189) finding that there was no sexual differentiation at Poundbury. The evidence of hypoplasia and *cribra orbitalia* at Barrington suggests that local conditions did not cause particularly

severe physiological stresses on the population, or any segment of it, and were unexceptional for the Anglo-Saxon period.

Harris lines were found in thirteen of the 25 individuals who were x-radiographed (52%). Lines were clearest on tibiae, even when fibular lines were also present, so the absence of Harris lines in the three specimens for which femur or fibula were used (Sk48 (grave 23) and Sk128 (grave 39) femur; Sk447A (grave 85) fibula) is not necessarily meaningful. Unfortunately, whole-cemetery prevalence cannot be calculated because it was not practicable to x-radiograph control specimens, although the left tibia of Sk151 (grave 51), x-radiographed for another reason, displays twelve sharply-marked Harris lines! Our population distribution seems unsurprising, with males, females, and immatures affected at the same rate as their representation in the whole population, about 30% each. In a modern sample, however, nearly all children and 24% of adults exhibited lines, with twice as many women as men being affected, probably because of increased bone remodelling in males (Steinbock 1976, 49 (quoting Garn and Schwager 1967)), so our pattern is probably distorted by selectivity for other stress indicators.

Particularly interesting is the poor correlation of the various stress indicators. While 60% of the specimens with *cribra orbitalia* also had Harris lines, only 37% of those with hypoplasia did, and only two individuals had hypoplasia and *cribra orbitalia* together (both had Harris lines). This is counter-intuitive, because both hypoplasia and Harris lines are known to be caused by a number of stressors of which dietary deficiency is only one, whereas *cribra orbitalia* is specific for iron-deficiency anaemia, whether caused by dietary deficiency or, more likely, parasitism. The Barrington results suggest that we should reconsider the aetiology of Harris lines and perhaps give greater prominence to the role of dietary and parasite factors in their production, whilst favouring other factors in the production of hypoplastic defects. Wiggins has been considering all these factors, in ancient and modern populations, and has also found no correlation (R Wiggins pers comm).

Härke (1992a, 154) examined the relationship of weapon burial to stress indicators, in order to determine whether absence of weapons indicated low status with its assumed concommitant inferior diet. His findings showed no significant correlation. At Barrington, ten adult males had at least one stress indicator, four being buried with weapons and six without: obviously, the difference is insignificant and conforms to Härke's findings. The two juveniles identified as males who appear in Table 4.10 are identified by the weapons but were excluded because other juveniles could not be sexed.

4.6.4 Infection

Infections are poorly represented in skeletal samples compared with recent ethnographic examples with apparently comparable lifestyles. Although this is mainly due to the loss of soft-tissue evidence, low population densities in much of prehistory probably prevented the transmission, and maintenance in the population, of many of the recent world scourges such as smallpox, plague, typhoid, and cholera. The major specific infections that can be identified in bone are tuberculosis, poliomyelitis, leprosy, the treponemal diseases (the syphilis family), and several fungal infections mostly of the New World; non-specific infections include periostitis – changes on the bone surface, very commonly the 'tropical ulcer' type extended from a skin ulcer in the lower leg – and osteomyelitis, in which infection has penetrated to the marrow (based on Kelley 1989, 192). In a community such as supplied the Barrington cemetery the main infectious diseases are likely to have been diarrhoea and those transmitted from domesticated animals, such as anthrax, cowpox, and bovine tuberculosis, only the latter of which could be demonstrable in the bones.

A total of 23 probable or possible examples of infection have been found in 22 individuals, a population prevalence of 15.5%, of which all but two appear to be non-specific. These two cases and eleven others of particular interest are discussed below, while the remaining ten examples (in skeletons Sk103 (grave 31), Sk137 (grave 44), Sk177 (grave 58), Sk198 (grave 63), Sk300B (grave 65), Sk322A (grave 66), Sk367A (grave 71), Sk447B (grave 85), Sk529 (grave 94), and Sk530 (grave 95)) consist simply of small areas of extra-cortical new bone: unstructured surface bone formed by its surrounding membrane in response to infection, inflammation or trauma, the cause usually impossible to determine.

4.6.4.1 Leprosy

This is one of the two specific infections identified: the causative organisms can be identified with reasonable certainty from the distinctive pattern of the bone changes. Leprosy is first found in Europe in the 2nd century AD and cases have been reported from the Anglo-Saxon cemeteries of Beckford (Wells 1962) and Burwell (Møller-Christensen and Hughes 1962) and 7th-century Tean (mentioned in Møller-Christensen and Hughes 1962, 177); Manchester (1981) has reported another 7th-century example from Eccles and Anderson (1993, 266) another probable example from Caister.

Sk42B (grave 18) is that of a woman with pathological changes to her skull conforming to the '*facies leprosa*' of Møller-Christensen (1961) and its refinement by Andersen and Manchester (1992) as the 'rhinomaxillary syndrome' of leprosy. In addition, both lower legs were affected, as commonly found in leprosy (Ortner and Putschar 1985, 177), but there are no changes in the hands or feet. These changes are shown in Figure 4.17. The disease was not advanced in skeletal terms, and is not likely to have been the cause

Table 4.11 Possible cases of leprosy

Sk42B	G18	F 17–25	skull: smooth resorption of prosthion, some pitting of adjacent alveolus; resorption of anterior nasal spine and slight cortical bone capping; resorption and rounding of inferior nasal margin and lower edge of lateral margins, again with capping; pitting of the oral and nasal surfaces of palate, mostly near midline; striation and pitting of the inner surfaces of the nasal processes of the maxilla; loss of nasal conchae (perhaps postmortem breakage) postcranial: marked vascular channels at femoral epicondyles; tibial and fibular shafts have striated new bone anteriorly
Sk526	G93	F 35–45	skull: loss of anterior nasal spine and labial alveolus at L 3/4 (perhaps postmortem erosion) postcranial: R hand dps (×2) short and triangular in outline; L capitate and scaphoid enlarged foramina; R cuneiform 1 cystic, eroded with some new bone

Table 4.12 Possible case of tuberculosis

Sk322A	G66	M adult	L5 body collapsed, mainly anteriorly; signs of cavitation of anterior body (pm erosion masks); smooth bony bridging between L5 and S1 antero-laterally, complete on R, narrow separation of L5 and S1 portions on L; cavity in R inferior surface of L5 with cloaca opening below pedicle; cavity in superior surface of S1 with cloaca opening on anterior body; other cloacae between and through bridges; cavities in anterior aspects of lower S1 and upper S2; no changes in arches

of death, but this woman would probably have had, at least, lepromatous nodules over her face and a profuse discharge from the nose, and the fact that she had been given a bed-burial casts an interesting light on the attitude of the Anglo-Saxons to disfigurement and obvious disease (see Table 4.11).

Another skeleton, Sk526 (grave 93), has some changes which are suggestive of leprosy but they do not satisfy the criteria of Andersen and Manchester (1992) for the skull or Andersen *et al* (1992) for the post-cranial skeleton (see Table 4.11).

4.6.4.2 Tuberculosis (Fig. 4.18)

In SK322A tuberculosis is suggested by the pattern of vertebral body collapse, the location of the paradiscal cavities (adjacent to the intervertebral discs), tuberculous caries (scalloped erosions) and cloacae (holes for discharging pus), the absence of new bone formation, and the non-involvement of the arches (Manchester nd; Roberts and Manchester 1995, 138; Ortner and Putschar 1985, 145–8). The lumbar spine is the commonest skeletal site for tuberculous change, usually one to four vertebrae are involved and the paradiscal area is the commonest one for the initial lumbar focus. Trauma can only account for the vertebral collapse. Osteomyelitis was considered because cloacae are formed, but new bone production is usually profuse because of blood vessel proliferation and severe necrotic destruction is common (Steinbock 1976, 13); the lumbar spine is an uncommon area for osteomyelitis (Steinbock 1976, Fig 25); infection would have to be through the bloodstream because direct introduction of infectious agents is unlikely (a wound into this area would damage major organs or pierce the abdominal aorta).

Single cases of tuberculosis are known from the Neolithic onwards, and it was established in Britain in the Romano-British period (Roberts and Manchester 1995, 141). Brothwell (1961) found two in late Saxon sites and at least two cases have recently been found at 7th century St Peter's, Broadstairs (Duhig in prep b). Although high prevalence occurs with human-to-human transmission in dense urban settlements, in an early Anglo-Saxon rural community the infection is as likely to be the less virulent bovine form caught from domestic cattle (Roberts and Manchester 1995, 136–7). Certainly, there are no changes on the ribs although these are common in the pulmonary form (Roberts and Manchester 1995, 139).

4.6.4.3 Endocranial extra-cortical new bone and vascularity

This type of bone change has been described in the past as *cribra cranii*, associating it with the external vault changes of porotic hyperostosis and *cribra orbitalia*, but this is not borne out by any correlation between these conditions (Brothwell and Browne 1994, 465). It is also referred to as a stress indicator, showing the presence of infection in the body, but if this is so the disease must have been acute, as infection in or around the brain and its membranes would have caused rapid death. Meningitis, for example, has recently caused several deaths in Britain.

All that can be said for certain in our cases (see Table 4.13), is that hypervascularity has been pre-

Figure 4.17 (above and top right) Leprosy in Sk42B (grave 18): (a) resorption of prosthion (between the sockets of the central incisors) and resorption and rounding of the inferior nasal margin; (b) lateral view showing 'dishing' of the face at the level of the lower edge of the nose; (c) striated new bone on a tibial shaft

Figure 4.18 (lower right) Tuberculosis in Sk322A (grave 66). Anterior view of fifth lumbar vertebra partially fused to sacrum by bony bridges, showing cavities in vertebral bodies, rounded pus holes (cloacae) and pits of tuberculous caries

Table 4.13 Endocranial extra-cortical new bone and vascularity

Sk9	G5	F	25–29	inner surfaces of parietals and occipital: dense network of vascular channels bordering sagittal suture and R lateral sinus (Fig 4.19)
Sk128	G39	N/A	16–17	inner surface of L frontal: small areas of very fine-grained extra-cortical new bone, largest 10 × 20mm

sent: Sk9's (grave 5) changes resemble Brothwell and Browne's (1994, 464, Fig 148b) 'severe frosting', and those of Sk128 (grave 39), their Figure 149, 'pitted subperiosteal new bone', but these descriptive terms shed no light on the aetiology. Ortner and Putschar (1985, 294) describe 'pregnancy osteophyte': a thin layer of periosteal bone within the vault, especially the frontal bone. Sk128 has female grave goods and could have had a pregnancy before she died at sixteen or seventeen years of age. At Jewbury, however, 53% of persons with endocranial new bone were children and 40% young females (leaving only one other case), so conditions relevant to the young should be the first to be considered.

Figure 4.19 Endocranial new bone and vascularity close to the sagittal suture in a skull fragment from Sk9 (grave 5)

4.6.4.4 Osteomyelitis

Osteomyelitis is an invasion of the bone by bacteria (*Staphylococcus aureus* in 90% of cases; Ortner and Putschar 1985, 106), directly through a wound or blood-borne from elsewhere in the body. One atypical case is present at Barrington, together with another possible case (1.4% of all individuals; see Table 4.14).

A case from Abington similar to that of Sk29 (grave 14) has been described as the result of an open crush fracture of the foot (Lisfranc's fracture: P Hacking pers comm). Perhaps caution should limit the description to 'osteitis/periostitis' as there are no cloacae or sequestra (fragments of dead bone within the shaft), but Ortner and Putschar (1985, 121) suggest that genuine ancient cases of osteomyelitis can be missed in the absence of these features and Steinbock (1976, 60) groups all three conditions as osteomyelitis. A tibia from Alton is similarly described as osteomyelitic despite the absence of cloacae or sequestra (Powers and Brothwell 1988, 62), and it resembles the non-suppurative osteomyelitis known as sclerosing osteomyelitis of Garré, but the necrotic change in our specimen's ankle excludes this diagnosis. A possible differential diagnosis is tertiary syphilis, but this did not arrive in Britain for several centuries. That the disorder was of long standing is shown by the remodelled nature of the new bone; this woman was buried with her left leg flexed at the hip and knee, although the right leg is almost straight, so the diseased knee might have been fixed in flexion by bony fusion, soft tissue inflammation and engorgement, or both.

The new bone on the pelvis of Sk130 (grave 40) appears to contain areas of recent development, where the pattern is spiculated, to those of longer-standing with reparative reorganisation. The florid new bone excludes any type of metastatic carcinoma other than that extended from the prostate (see *neoplasia*, below), which is unlikely in a younger male, and this appears to be another case of osteomyelitis without cloacae or sequestrae (K West pers comm).

4.6.4.5 Other non-specific infections

These kinds of infection are extremely common archaeologically and today, but the Barrington cases are very few (Table 4.15). The oval areas of vascular new bone on the shins of the young woman Sk119 (grave 35), with their central pits, resemble the effects of chronic leg ulcers (see especially Ortner and Putschar 1985, 131 and 135–7, Figs 182 and 192–3). Were they lower their symmetry would suggest shackles. The leg swellings of Sk151 (grave 51) and Sk300A (grave 65), however, are smooth-surfaced, apparently-cortical bone – confirmed by the radiograph of Sk151. They are not in muscle insertion areas, nor does their location and form suggest

Table 4.14 Possible cases of osteomyelitis

Sk29	G14	F	35–45	1. L tibia/fibula covered with dense, vascular new bone, original surfaces are obscured, marrow cavities are narrowed, fibular shaft double normal thickness (Fig 4.20a) 2. L foot consists of one metatarsal and two shapeless, porous lumps of bone from which the other metatarsals emerge; absence of part of the ankle on grave plan: probably at least calcaneum and talus gone, lumps representing some or all of the other tarsals (Fig 4.20b) 3. L knee absent, some ECNB on lower femoral shaft.
Sk130	G40	N/A	15–16	1. R innominate, dense new bone over whole cortex apart from articular surfaces (Fig 4.20c), form varying from a spiculated 'sunburst' to smoother 'melted wax'; radiographically intact cortex throughout 2. R sacrum and both femoral necks, fine-grained new bone on cortex.

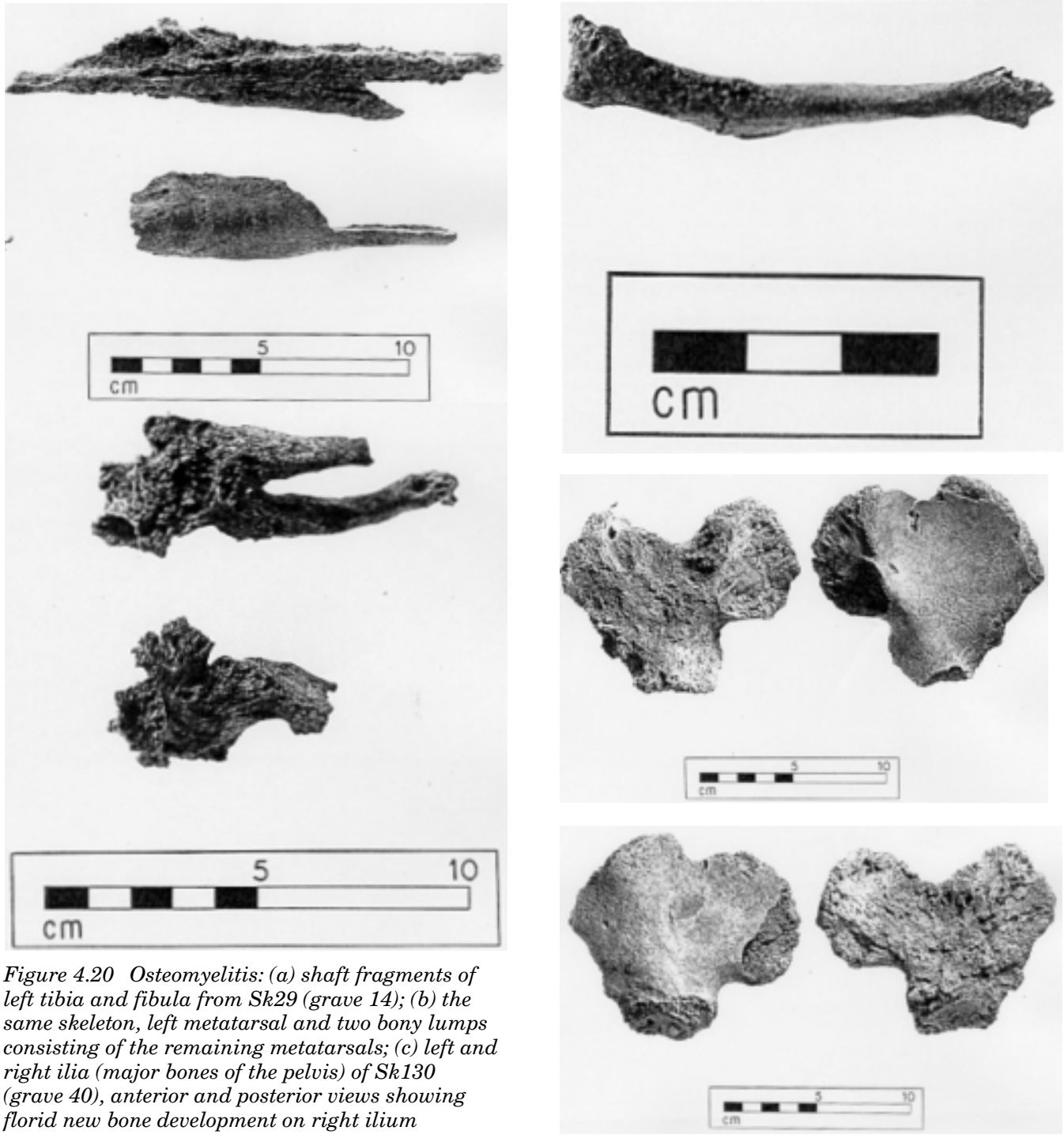


Figure 4.20 Osteomyelitis: (a) shaft fragments of left tibia and fibula from Sk29 (grave 14); (b) the same skeleton, left metatarsal and two bony lumps consisting of the remaining metatarsals; (c) left and right ilia (major bones of the pelvis) of Sk130 (grave 40), anterior and posterior views showing florid new bone development on right ilium

Table 4.15 Other non-specific infections

Sk119	G35	F	19–35	L tibia, cnemial crest 0.1m distal to nutrient foramen, ECNB *c.* 40 × 20mm with vascular channels and one large central pit ; R tibia, 6 0mm distal to n.f., coarse ECNB similar size and central indentation enclosing two pits; L fibula some ECNB (Fig 4.21)
Sk151	G51	M	19–25	L tibia, lateral shaft distal third, two smooth raised areas without ECNB, x-radiograph shows slight thickening of normal cortex and no medullary change
Sk171	G55	F	21–25	fine-grained new bone overlying cortex in right sphenoid sinus
Sk300A	G65	M	35	L tibia, posterior to interosseous crest midshaft, smooth raised area 12 × 4mm without ECNB; R tibia, cnemial crest midshaft, smooth raised area 7 × 4mm without ECNB, more necked than on L
Sk592	G10	F	52–59	oral surface of palatal process of maxilla, pitting

developmental exostoses. They might represent the remodelled remains of new bone formed after injury, with or without infection (if the latter, trauma without infection, they should be included with *ossifying haematoma*, below), in which case considerable time must have elapsed before death for the coarse woven bone to completely remodel. Skeleton 47 from Caister (Anderson 1993, 267) seems to have a similar lesion, diagnosed as neoplasm or ossifying haematoma.

Sk171 (grave 55) had an infection within the sphenoid sinus, the only one in 124 skulls (0.8%), although we are dependent on breakage to reveal the evidence of this condition and cases will be missed in intact skulls. Sinusitis has been found to be higher in urban than in rural populations (Lewis 1994), so one would not expect many cases from Barrington. The pitting of the palate of Sk592 (grave 105) suggests a soft-tissue infection.

Figure 4.21 Non-specific infection, probably chronic leg ulcers, in the lower legs of Sk119 (grave 35), shown by new bone, vascular channels and central pits

4.6.5 Trauma and surgery

4.6.5.1 Head wounds/trepanations

A total of four cases have been found of holes in the skull vault, all in males (see Table 4.16). The radiating or depressed fractures which tend to accompany injury from a heavy, edged weapon such as an axe are not present, so slashing injuries suggest themselves. Anglo-Saxon injuries of this type are known from six sites, a total of fourteen cases, all but one of which are male (Anderson 1996, table 1; includes two new cases). They are referred to as 'sword cuts', though they might also have been made by a spear used in a slashing action. Trepanation, which might itself be used to remove bone fragments produced by cutting injuries, should also be considered, and is attested in Anglo-Saxon material (listed in Parker *et al* 1986; two additional cases in Wakely and Duhig 1991 and McKinley 1992). All four cases from Barrington are well healed, showing that the individuals survived their injuries or surgery for considerable time, although they might have had damage to the brain that we cannot identify (Wenham 1989).

Table 4.16 Head wounds/trepanations

Sk148	G48	M	25–35	1. on L parietal, extending across sagittal suture to R parietal, almost-circular ring of erosion maximum 20mm and minimum 15mm diameter; loss of outer table and no reparative changes 2. within ring, oval indentation 19mm medio-laterally and 12mm antero-posteriorly; shallowly-bevelled anterior edge, more steep posterior edge, sloping down to defect 10mm × 09mm; defect has remodelled borders and obliterated diploë (Fig 4.22a)
Sk447A	G85	M	25–35	on R parietal eminence, 45mm lateral to sagittal suture and 60mm posterior to coronal, oval indentation at least 63mm front-to-back and 26m wide; shallowly-bevelled medial (ie L) edge and more steeply-bevelled lateral edge with shallow extension laterally, sloping down to an oval defect approximately 28mm front-to-back and 10mm wide; defect has remodelled borders and obliterated diploë, well resorbed reactive bone on lateral edge (Fig 4.22b)
Sk451A	G87	M	50–59	1. on L parietal, 18mm lateral to sagittal suture and 11mm posterior to coronal, small sub-circular indentation; lateral edge shallowly bevelled, anterior edge more steeply bevelled, medial edge convex; contains triangular defect not measurable because of breakage; defect has obliterated diploë on medial edge 2. immediately posterior to 1. a circular indentation 38–39mm in diameter; anterior edge shallowly bevelled, remainder concave (ie saucer shaped), containing diamond-shaped defect not measurable because of breakage; some obliterated diploë on antero-medial edge but breakage and erosion obscures remainder (Fig 4.22c)
Sk553	G98	M	45 +	immediately behind bregma – and directly over the superior sagittal sinus – oval indentation approximately (some breakage) 48mm front-to-back and 30mm wide; shallowly bevelled edges sloping down to a circular defect approximately 14mm front-to-back and 17mm wide; defect has remodelled borders and obliterated diploë but no reactive bone; marked middle meningeal vessel impression on R leading into defect (Fig 4.22d)

The dramatic ring of erosion on the skull vault of Sk148 (grave 48) is an intriguing example of pseudopathology which coincidentally is found with a genuine skull wound, and had I not seen the skeleton in its grave it would be difficult to reconcile the two sets of changes. When *in situ*, however, the left parietal was uppermost and the ring of erosion was horizontal, showing that it was almost certainly produced by water pooled at this level in the grave. The indentation within the ring is oval from side-to-side, shallowly bevelled at the front edge and centred on an oval defect with healed edges. It might be the result of a glancing sword-cut from in front which had removed a small portion of bone – which would account for the steeper posterior edge – the lost area having then been partially filled by reparative bone. On the other hand, it might represent a trepanation, either to clean up a weapon injury or for some other cause. The scraping technique of trepanation, which produces a very shallowly-bevelled edge, is the safest: if the meninges surrounding the brain are cut through, fatal haemorrhage will ensue, so slow scraping at a very shallow angle to the surface allows the operator more control (Wakely and Duhig 1991). Shallow parallel grooves around the lesion, only identifiable by touch or when seen against the light, could be due to this scraping having been extended widely around the operation centre (although rodent gnawing is also possible, especially as the head was so high in the grave). Healing has been of such long standing that no trace of the original cut marks, however caused, have remained to assist us further, a problem we find also with the following cases.

The case of individual Sk451A (grave 87) is more likely to represent a trepanation, as the saucer-shaped profile of the larger depression in the vault could not have been produced by a single cut by a straight-edged object. Two consecutive trepanations could well have been carried out, one small and one larger, in which the cautious operator scraped ever more shallowly towards the operation centre. This latter operation area overlaps the sagittal suture, which is the most dangerous place to deliberately open the vault because it overlies the superior sagittal sinus (a venous channel draining blood from the brain and its membranes), but the defect itself lies lateral to the sinus by approximately 13mm. Another possibility is that the small lesion is a cut, secondary to the effects of which the large trepanation was undertaken.

The long-oval form of the injury to Sk447A (grave 85), with its shallowly-sloping medial border and steeply-sloping, uneven lateral border, suggests a sword-cut delivered from directly in front or behind, cutting smoothly into the bone from the medial side and producing irregular breakage at the lateral edge

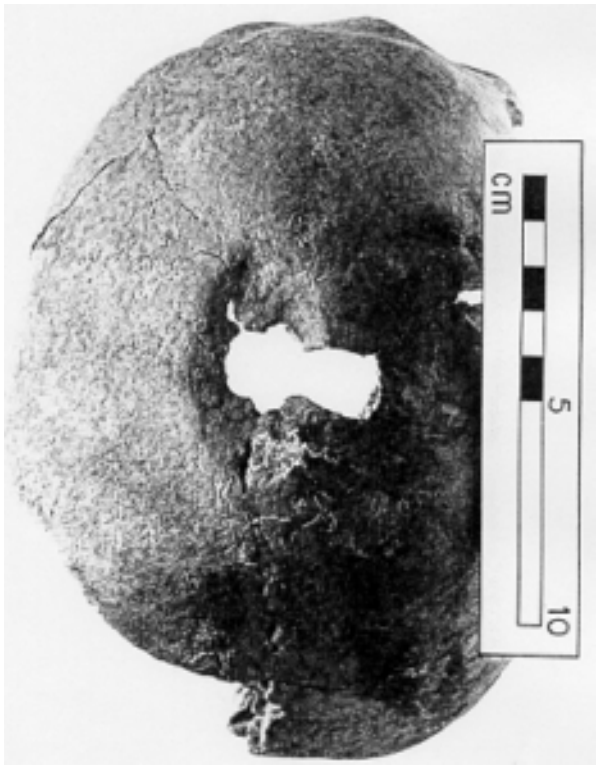


Figure 4.22 Skull wounds / trepanations, all skulls in same position with frontal bones to the top of the picture: (a) Sk148 (grave 48), the defect adjoined by shallow grooves and surrounded by a ring of water erosion; (b) Sk447A (grave 85), with shallowly-sloped left edge and more steep right edge, and small crest to the right of the defect; (c) Sk451A (grave 87), double defect, posterior one in saucer-shaped depression; (d) Sk553 (grave 98), circular defect within shallowly-sloped depression

by the impact of the blow. The maximum extent of the indentation laterally is marked by a minute crest, perhaps indicating the edge of an area where part of the outer table of the skull vault was torn away. Wells (1974) reports similar ridges of bone beside all five skull lesions, which he has interpreted as trepanations, from Swaffham Anglo-Saxon cemetery. Sk553's (grave 98) injury has a similar shape but is more circular, and both sides are equally shallowly-bevelled and smooth, suggesting that in this case the weapon cut straight through and removed a roundel of bone. It seems unlikely that a trepanation had been carried out, because the defect

Table 4.17 Fractures of the post-cranial skeleton

Sk13A	G9	M	45 +	R scapula: blade at level immediately below glenoid fossa traversed horizontally by crack, with overlap of lower part and consequent loss of length of blade; minor cracking adjacent; perforation in mid-blade; grossly and radiographically, well-organized bone around cracks and smooth edge to perforation (Fig 4.23)
Sk52	G27	M	45 +	L1: antero-posterior wedging, point anteriorly(Fig 4.24)
Sk57	G28	M	35–45	L fibula: distal third of shaft, 109mm below nutrient foramen, thickened shaft; radiographically, thickened cortex, apparent trabecular continuity
Sk127A	G38	F	35–45	L radius: distal shaft, dorso-lateral displacement and thickening; radiographically, slight displacement laterally but little backwards displacement or impaction, trabecular continuity
Sk148	G48	M	25–35	R mt5: absence of base, porosity of proximal end (Fig 4.25)
Sk300A	G65	M	35	L clavicle: lateral quarter of shaft, antero-medial displacement with thickening; radiographically, traces of fracture line and non-continuity of cortex at posterior edge
Sk369A	G72	N/D	adult	L clavicle fused to acromion process of L scapula; acromion shows venous markings and cloacae in smooth bone; radiographically dense
Sk719A	G112	M	25–35	L clavicle: lateral half of shaft shortened with antero-medial displacement, radiographically cortical continuity obscured by erosion; rib fragment thickened, radiographically displacement observable

is located directly over the dangerous area of the sagittal suture.

Härke (1992a, 153) has shown that there is no correlation between weapon burial and skeletal evidence for the individual having participated in warfare, and his findings are not contradicted by our four examples, two of which (Sk148 (grave 48) and Sk553 (grave 98)) were buried with weaponry and two of which were not. Skeletons Sk447A (grave 85) and Sk553 are more likely to be exhibiting sword-cuts as opposed to trepanations – and are therefore almost certain to have been in at least one battle each – and only Sk553 had a weapon in his grave. It should be borne in mind, however, that graves 85 and 87 (of skeletons Sk447A and Sk451A respectively) were severely disturbed and might have been robbed of their weapons. Neither did Härke find a correlation between fitness for combat and presence of weapons, and we can imagine, although we cannot confirm, that any one of these men with head wounds might have also suffered neurological damage that rendered him unfit to continue as a warrior (see Table 4.16 and also below 8.2.2).

4.6.5.2 Fractures of the post-cranial skeleton

A total of eight post-cranial fractures have been found in seven persons from Barrington, a prevalence of 5.4% (see Table 4.17). All these injuries except for the Colles' fracture are in the skeletons of men, like those of the skull (prevalence of all trauma/surgery is 8.8%). All but two of the cases are common in all populations and can derive from everyday accidents.

The fractured scapula of Sk13A (grave 9) is probably the result of a penetrating injury of the upper back, a projectile piercing the superficial muscle (*infraspinatus*) and shattering the scapular blade. Had it penetrated further it would have passed through the muscle beneath the scapular blade (*subscapularis*) and could have punctured the lung, producing an incapacitating lung collapse. The small size of the perforation and the undamaged ribs suggest, however, that the wound was not deep. The shortening of the scapular blade is surprising because the fragments are usually held in place by the surrounding muscles (Adams 1969, 113), but it might have been produced by contraction of *infraspinatus*. A similar example is shown by Zivanovič (1982, 163, pl 40; from Roman-period Serbia) and interpreted as an injury from a heavy blunt implement which forced the edges of the fragments over each other.

A wedged vertebra in the lower spine of Sk52 (grave 27) could be congenital, but this tends to be medio-lateral (side-to-side). This example is antero-posterior and is therefore more likely to be a stress fracture. Wedge compression fractures are usually produced by one event – commonly, a vertical force passing down the spine from an impact from above or a fall on to the feet. The Schmorl's nodes on the next vertebra are the most severe ever observed by the author, and as Schmorl's nodes are caused by pressure on the discs they might have developed after the collapse as the direction of weight transmission changed. As the arch and posterior part of the vertebral body are intact, the injury is unlikly to have been dangerous although it was probably painful (Adams 1969, 94–6).

'Pott's fracture' describes a group of fractures and fracture-dislocations of the lower ends of the tibia

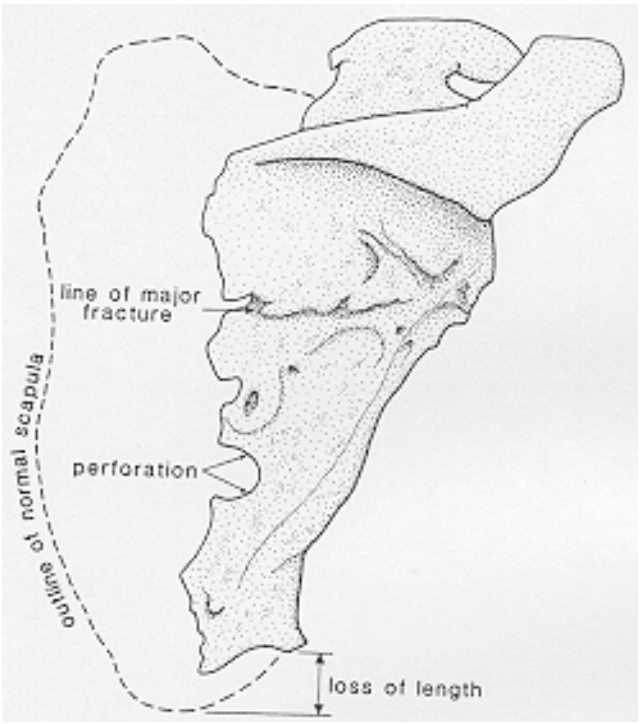


Figure 4.23 Fractured right scapula of Sk13A (grave 9) (drawing by Barry Kemp)

Figure 4.25 Fracture and evulsion of base of right fifth metatarsal in Sk148 (grave 48), with normal left bone for comparison

Figure 4.24 Spinal fracture in Sk52 (grave 27): (a) lateral view of wedge compression fracture of first lumbar vertebra; (b) adjoining surfaces of first and second lumbar vertebrae showing Schmorl's nodes

and fibula which form the ankle joint. In the case of Sk57 (grave 28) the fibula is affected, a trace of the reparative process remaining in the thickened cortex, but the break would have been higher up the shaft than a classic case, above the tibio-fibular ligament.

Injuries of this kind are usually caused by a direct blow, such as a falling stone, and as our case shows no arthritic change in the ankle, and radiography shows perfect healing with minimal displacement, it is probably of the simplest kind with no disruption of the ankle joint (Adams 1969, 251–7). The Colles' fracture is currently the most common for which treatment is sought: it is a cracking, tilting, and impaction of the lowest part of the radius, about 20mm above the wrist joint, caused by falling on to an outstretched hand (Adams 1969, 155–8). Sk127A (grave 38) has a classic example with evidence of complete healing and little displacement so she probably recovered good wrist function with minimal deformity (Adams 1969, 162).

The absence of the base of a fifth (outermost) metatarsal in individual 148 might be a fracture-evulsion caused when the foot is abruptly turned downwards and inwards – such as slipping over the edge of a kerb – and the bone fragment breaks off and is then pulled away by the tightening of the *peroneus brevis* muscle (Adams 1969, 277). That the condition is unilateral and that the fragment is missing excludes the possibility that this is a case of *os Vesalianum*, a congenital separate epiphysis. Sk300A (grave 65) has a fractured clavicle, slightly lateral to the commonest site, with the expected shortening (compare Alton skeleton 25: Powers and Brothwell 1988, 62); even today, the broken collarbone is often left untreated and heals with only slight deformity. Radiographic signs that the cortex had not been completely restored indicate that the fracture was probably sustained less than a year before death (Roberts nd). Sk719A (grave 112) had a fractured clavicle and rib, apparently well-healed. The case of Sk369A (grave 72) probably represents an injury to the shoulder which produced an open wound and broke off the acromion process which is superficial at its extremity: violence is not unlikely, although accidents producing such an injury can be imagined. Infection followed and pus escaped through the bone cloacae and, presumably, through the wound or a fistula; that fusion took place between acromion and clavicle implies that displacement did not occur because the ligaments were not torn (Adams 1969, 115).

4.6.5.3 Myositis ossificans/ossifying haematoma

Damage to tissues often produces bleeding – a haematoma – which can become ossified. Mann (1993) has recently described five cases. It is arguable that most cases should be described as ossifying haematomas, because there is not necessarily inflammation as implied by the term 'myositis ossificans' (Adams 1969, 68–9; the terms are used interchangably in palaeopathology), although sometimes development is directly in muscle adjacent to the haematoma itself (Ortner and Putschar 1985, 69); new bone at the entheses can also be of similar cause, but can have other causes such as DISH, described above. Sk16A (grave 10), that of a woman in her early 30s, has a spur of bone below the deltoid tuberosity of the left humerus, at the insertion of the deltoid muscle and the origina of *brachialis*: the cause is almost certainly trauma caused during the use of these muscles, which, respectively, contribute to many movements of the shoulder and upper arm, and flex the elbow.

4.6.6 Changes due to activity and gait ('occupational changes')

4.6.6.1 Third trochanters

Additional (third) trochanters on the femur used to be recorded as epigenetic traits. Their location, at the site of the insertion of the *gluteus maximus* muscle (which straightens the body on the thigh after bending and contributes to maintenance of upright posture) and the observation of traumatic enthesopathies as described above, suggest that muscular activity is responsible for the development of third trochanters (Stirland 1992, 202). There were two skeletons from the site, numbers Sk137 (grave 44) and Sk148 (grave 48) (1.8% of 113 individuals with at least one proximal femur), which showed changes in this area, and, as both are particularly robust males of early middle age, overuse of *gluteus maximus* is suggested.

4.6.6.2 Squatting facets, platymeria, pilasterism and platycnemia

Squatting facets are small flattened areas on the distal articulation of the tibia and the corresponding area of the talus, thought to be produced by extreme dorsiflexion of the foot in habitual squatting. Platymeria is front-to-back flattening of the femoral shaft, pilasterism is over-development of the linea aspera at the back of the femur and platycnemia is side-to-side flattening of the tibial shaft. The recent discussion by Kennedy (1989, 131 and 146–51) shows that although a habitual squatting posture does appear to be implicated in producing these changes, the aetiologies are still poorly understood and most of the literature is no later than the 1930s.

The frequency of each condition out of the number of relevant bones or bone-parts recovered is: squatting facets 7.1% (7/99), platymeria 2.7% (3/113), pilasterism 1.8% (2/113), and platycnemia 3.6% (4/111), and there is little correlation between the features despite their postulated production by habitual squatting. There are two individuals who have

Table 4.18 Squatting facets, platymeria, pilasterism and platycnemia

Sk11	G7	M	25–35	squatting facets
Sk19	G12	M	20–24	squatting facets
Sk45	G20	F	19	squatting facets
Sk112	G33	M	18–25	squatting facets
Sk137	G44	M	35	platymeria
Sk148	G48	M	25–35	platycnemia
Sk151	G51	M	19–25	pilasterism
Sk300A	G65	M	35	squatting facets and platycnemia
Sk405	G76	N/A (M)	15	platymeria
Sk432A	G82	F	adult	squatting facets and platycnemia
Sk440A	G84	F	25–35	hyperplatymeria
Sk451A	G87	M	50–59	platycnemia
Sk453A	G88	M	18–25	pilasterism
Sk458	G90	F	60+	squatting facets

both platycnemia and squatting facets. One man has platycnemia and third trochanters and one has platymeria and third trochanters; one woman, Sk440A (grave 84), has hyperplatymeria and slight gluteal tuberosity over-development, which I have suggested above is connected with the appearance of third trochanters.

4.6.6.3 *Os acromiale*

The occasional non-fusion of the epiphysis of the acromion process of the scapula produces a small separate bone, the *os acromiale*. Its development has a minor heritable element but Stirland has shown that it is produced by severe shearing stresses on the shoulder in her study of longbowmen from the *Mary Rose*. Normal prevalence is about 2–6% (Stirland 1991, 44–5) but the prevalence at Barrington is higher than this range at 10.3% (seven out of 68 adults with scapulae sufficiently preserved to potentially demonstrate the trait). Half the affected individuals are females: were they doing particularly heavy work of an unusual kind, or were their skeletons more gracile and therefore less able to take the stresses of a usual activity? Sk135 (grave 42) is slight and has severe osteoarthritic change throughout her skeleton, including the shoulder; Sk440A (grave 84) is extremely slight and her constellation of skeletal changes is discussed below; Sk687A (grave 110) is the shortest woman in the cemetery. Sk148 (grave 48), Sk551 (grave 97), and Sk727 (grave 115), by contrast, are those of robust men. All cases are scattered around the excavated area.

The scanty remains of Sk369A (grave 72), an unsexed adult, had a probable shoulder fracture, described above. It is unclear, due to bone condition, whether the acromion epiphysis had fused to the scapula, but if it had not, then another example of trauma producing *os acromiale* is present.

Table 4.19 Incidences of *os acromiale*

Sk33	G16	M 25–35	os acromiale
Sk135	G42	F 50	os acromiale
Sk146	G46	M 25–35	os acromiale
Sk440A	G84	F 25–35	os acromiale
Sk551	G97	M 20–30	os acromiale
Sk687A	G110	F 25	os acromiale
Sk727	G115	M 20–24	os acromiale

4.6.6.4 Osteochondritis dissecans

Stirland (1991, 43–4) has found this condition, pits produced by loss of small necrotic fragments from convex articular areas, to be common in the *Mary Rose* crew, and attributes it to activity-related stresses on growing bones. The sixteen-year-old male, Sk188 (grave 62), has a well-bounded, round pit in the distal articulation of the right humerus, approximately 9mm in diameter and with many porosities in the pit base. Ortner and Putschar (1985, 242) state that fragments are triangular in profile (ours would be semi-circular on the inner surface) and that 90% occur in the knee, but this does not completely exclude a case in the elbow, and Stirland found 69% of her cases in the distal humerus; adolescents and young adults, especially males, are usually affected, as here.

Table 4.20 Dental parafunctional wear

Sk198	G63	M 22–25	maxillary central incisors non-contact facets
Sk367A	G71	M 25–35	maxillary right central incisor non-contact facet
Sk530	G95	F 52–59	maxillary left canine crown traversed labio-lingually by v-shaped indentation with central crack; loss of enamel on lingual (non-contact) surfaces of anterior mandibular teeth (Fig 4.26)

Figure 4.26 Dental parafunctional wear in Sk530 (grave 95): (a) indentation across crown of left canine; (b) loss of enamel from non-biting surfaces of lower incisors

4.6.6.5 Dental parafunctional wear

Any dental wear other than that produced by biting and chewing is referred to as parafunctional wear, and such wear can be caused by methods of tooth cleaning, use of the teeth as a 'third hand' to hold objects, pipe smoking and so on. Two men from the cemetery exhibit wear-facets on the upper central incisors which do not appear to represent normal attrition, even given this population's edge-to-edge bite (in most ancient populations, and some modern ones, the biting surfaces of the incisors meet together; this causes considerable wear and loss of crown-length during life). I assume that the facets were produced by some habitual activity, but the cause is indeterminable. In the case of the female Sk530 (grave 95), however, the narrow, smooth indentation across one canine crown suggests wear from either a fibre or a small object such as a pin. Ethnographic examples of threads being pulled between the teeth in spinning are known (flax in modern Egypt: Barber 1991, 46; wool in recent Lycia: Duhig in press (quoting unpublished correspondence of Angel); nettle bast in Nepal: Dunsmore nd, 11), but, as spinning practices tend to be common to a group, the absence of other examples weakens the likelihood of this explanation, unless this woman had a unique method of her own or that of her natal group. She might, of course, just have had a 'third-hand' habit.

Intriguingly, dental enamel is also missing from the inner surfaces of her lower incisors, in a location where no possible normal biting action could have worn it away, and this can be associated with erosion by unusually acidic foods or stomach acids in chronic regurgitation syndromes (Cruwys and Duhig 1993). Unfortunately, the precise causes in ancient material elude us.

4.6.7 Epigenetic (non-metric) traits and congenital and developmental disorders

Epigenetic traits are usually minor skeletal variants or anomalies – for example, small extra bones in the skull vault. They are also called 'non-metric traits' or 'discontinuous traits' because many of them manifest in a simple presence/absence dichotomy. These traits

Table 4.21 Metopism and Wormian bones

Sk19	G12	M 20–24	metopic
Sk31	G15	(F) 11–12	loose Wormian (1) location not-determinable
Sk103	G31	M 45 +	bregmatic ossicle
Sk112	G33	M 18–25	metopic
Sk117	G34	M 17–25	Wormians (25 +) in lambdoid and posterior sagittal sutures
Sk130	G40	N/A 15–16	Wormians (2) in lambdoid suture
Sk133	G41	N/A 6–7	Wormians (3, 4) in lambdoid and posterior sagittal sutures
Sk146	G46	M 23–59	metopic
Sk148	G48	M 25–45	metopic and Wormians in lambdoid suture
Sk171	G55	F 21–25	Wormians (4 +) in lambdoid suture
Sk188	G62	(M) 16	Wormians (10) in lambdoid suture
Sk372	G73	M 17–25	ossicle at asterion
Sk458	G90	F 60 +	metopic, Wormians (4) in lambdoid suture
Sk578	G100	M 20–24	metopic
Sk592	G105	F 52–59	metopic
Sk687A	G110	F 25	metopic, Wormian (1) in lambdoid suture
Sk726	G114	F 17–25	metopic

do not show a simple Mendelian inheritance pattern, but are produced by the interaction of genetic predisposition with the environment before and after birth (thus 'epigenetic', ie 'in addition to genetic'); pioneering studies demonstrating this were carried out by Grüneberg (1952). The heritable element can be quantified to some extent, as by Hauser and De Stefano (1989) for the cranial traits, and can assist determination of family relationships in cemeteries or inter-group relatedness or distance, but interpretation must include the potential contributions of shared genetic factors, common environment or life experiences or all of these. The contribution of the various contributing factors is discussed by Hauser and De Stefano (1989, 4–8 and 12) and Saunders (1989, 96–8 and 102–6); the intra-group distribution of traits is probably more informative because many environmental factors are likely to be common. Generally, sex and age effects, laterality and side preferences tend to be negligible or absent (Hauser and De Stefano 1989, 16; Saunders 1989, 98–102).

Congenital or developmental diseases often have a simple inheritance pattern but sometimes the relationship between them and epigenetic traits is merely one of clinical severity, and certain syndromes produce pathological changes identical to harmless epigenetic effects (for example, a number of genetic disorders produce additional bones in the skull sutures in addition to other deformities).

4.6.7.1 Metopism and Wormian bones

These two traits have been grouped together because they have been found by some researchers to have significant correlations (eg Ossenberg 1969).

The frontal bone is in two halves until about the age of two years, when the suture closes. In some cases this metopic suture does not close and the individual is said to be metopic. Prevalence can be up to 16% in modern Indians, is about 3% in modern British, nearly 5% in a 6th to 8th century Alamannic population (Hauser and De Stefano 1989, table 5) and 8.3% in a number of Anglo-Saxon groups (Brothwell 1972, table 3). Recent Anglo-Saxon cemetery reports give similar prevalences (6.3% at Alton: Powers and Brothwell 1988, 64; 8.2% at Buckland: Powers and Cullen 1987, 198; 4.6% at Burgh Castle: Anderson and Birkett 1993, 257).

Additional centres of ossification can appear in any of the embryonic skull sutures or fontanelles, producing Wormian (extra-sutural) bones which remain separate. Prevalence varies between location of the ossicles: those in the lambdoid suture, at the back of the skull, are the most common: between 23% and 84%, with modern British having the lowest prevalence, Alamanni having 58% (Hauser and De Stefano 1989, table 19), and Anglo-Saxons 55% (Brothwell 1972, table 3). Recently, Alton has had 38% (Powers and Brothwell 1988, 64) and Burgh Castle 47.4% (Anderson and Birkett 1993, 257).

The Barrington population has 7.3% (9/124) prevalence of metopic suture, 8% (10/124) Wormian bones and 13.7% (17/124) both combined. There are three individuals in Table 4.21 who share both traits. Metopism is more than double that of modern Britain and similar to that found in Anglo-Saxons and Alamanni, but prevalence of lambdoid Wormian

bones (8/124, 6.5%) is by any standards very low. The ossicle at asterion has a significant correlation with lambdoid ossicles – unsurprisingly as asterion is merely a point on the lambdoid suture. We have one example, that is 0.8% of the population, which is also an extremely low percentage: studies have given the prevalence as between 5% and 41%; the one example of bregmatic ossicle is not unusual as it is absent in many populations and rarely presents at more than 2.5% (Hauser and De Stefano 1989, table 47 and 20).

Within the cemetery, certain groupings of these cranial traits stand out: in the centre of the excavated area, the metopic male skeletons Sk112 (grave 33), Sk146 (grave 46), and Sk148 (grave 48) are adjacent to each other, as are the four with Wormian bones, Sk103 (grave 31), Sk117 (grave 34), Sk188 (grave 62), and Sk148 (grave 48); two youngsters, Sk31 (grave 15) and Sk130 (grave 40) to the south-east, also have Wormian bones. Sk133 (grave 41) and Sk171 (grave 55), with Wormian bones, lie close to each other, as do the metopic adults Sk578 (grave 100) and Sk592 (grave 105). The strong resemblance of the skulls of Sk146 and Sk148 has recently been demonstrated by superimposed outlines, supporting the suggestion that these individuals were related (cf Chapter 8, 8.3.2). Similar clustering has been observed for metopism at other Anglo-Saxon sites, for example Burgh Castle (Anderson and Birkett 1993, 257). This is discussed in Chapter 8 (8.3.2).

4.6.7.2 Premature cranial synostosis

Occasionally, sutures of the skull are absent. It used to be thought that they had fused before adulthood, hence 'premature' synostosis, but Barnes (1994, 152–9) has shown that the sutures are absent even in newborns. To make room for the developing brain, compensatory growth must take place at the other sutures, which produces distinctive skull forms, each with a descriptive name, depending on which suture has fused prematurely. Scaphocephaly (a lengthened, 'boat-shaped' skull) occurs if the front-to-back sagittal suture is absent and additional growth has taken place at the side-to-side sutures, and this appears to be the case with Sk423 (grave 77). The vault is broken and warped, but measurement was possible: the skull is extremely long in comparison to its breadth, with a cranial index (a length/width ratio) of 61.3. Normal cranial indexes fall between approximately 65 and 90, of which the dolichocephalic ('long-headed') group have indices less than 75 and abnormal skulls less than 70 (Brothwell 1972, 88, 169), so this specimen is clearly out of the normal range. If skull growth is insufficient to allow room for the brain, the sutures are forced apart or pressure makes deep 'silverbeaten' impressions on the inside of the vault (Ortner and Putschar 1985, 346, 348 and 355, Figs 564–6; but for more likely causes see Hawkins 1983, 78–80). Neither of these indicators is present, however, and Sk423 was probably unaffected by her condition.

4.6.7.3 Vertebral errors of segmentation and cranio-caudal border shifting

The vertebrae are formed in the embryo from cartilaginous models which have developed from a sequence of precursors. Most deformed, additional, absent or transitional vertebrae are produced by errors or delays in the development or fusion of these precursors (Barnes 1994, 14–34). The most common anomalies are called cranio-caudal border shifting because the border between one area of the spine and another appears to be moved up or down: for example, a lumbar vertebra resembles a sacral (apparently moving the border up); an additional or absent vertebra is referred to as a numerical error of segmentation. There is a strong heritable element in this type of condition.

We have no developmentally-deformed vertebrae at Barrington, but nine examples of transitional and additional vertebrae (nine of 98 spines with sufficient preservation to reveal this condition: 9.2%) (Table 4.22). The close proximity of the graves of the children Sk584 (grave101) and Sk587 (grave 103), both with thirteen thoracic vertebrae, is intriguing. The grave of Sk44A (grave 19), again with thirteen thoracics, is cut by that of Sk45 (grave 20), who has six lumbars, and although it seems unlikely that the first grave would be deliberately cut into and damaged by that of a close relative, it is suggested above (see Chapter 3) that this 'family plot' might have been reused with imprecise knowledge of the earlier orientation, so there must have been time-lapse sufficient for the orientation to be forgotten.

4.6.7.4 Neural arch deficit (Fig 4. 27)

This term refers to a group of congenital conditions affecting any vertebral arch but particularly the lower lumbar and sacral. The early neural tube defect commonly known as spina bifida (correctly *spina bifida cystica*) is an open vertebral, usually sacral, arch with exposed spinal cord, frequently crippling today and usually lethal in the absence of modern medicine. Cases are likely to be rare in the archaeological record. *Spina bifida occulta*, also produced by a neural tube defect and producing less severe or no symptoms, and the clinically insignficant 'cleft neural arch', resulting from delayed meeting of the two sides of the arch at a later stage of development, can be distinguished: in the former the arch edges are turned outwards (by pressure of the herniated spinal cord membranes) whilst in the latter the arch is unfused but not open, or open but without outward-turned edges (Barnes 1994, 119). Clearly, a cleft neural arch, probably asymptomatic,

Table 4.22 Examples of transitional and additional vertebrae

Sk9	G5	F 25–29	T13
Sk20B	G13	F 25	lumbarisation of T12 (cranial shift)
Sk29	G14	F 35–45	T13 or L6 (only eroded arches present)
Sk44A	G19	F 18	T13
Sk45	G20	F 19	L6
Sk184A	G61	F 25–35	partial lumbarisation of S1 (caudal shift) and altered articulations with L5
Sk300A	G65	M 35	only 4 sacral segments (also neural arch deficit, below)
Sk584	G101	(F) 3	T13
Sk587	G103	N/A 8	T13

Table 4.23 Neural arch deficit

Sk100	G30	N/A 17	unfused S1 arch with R caudal displacement and altered articulation with L5
Sk148	G48	M 25–35	unfused S1 arch with deviation to R, L5 spine also deviated to R
Sk300A	G65	M 35	open S1 and S2 arches; absence of L half of S1 spine, L caudal displacement and lateral deviation of facet; additional 'facets' on L5 and S1 and deviation of L5 spine to meet S1 R half of spine; (also vertebral error of segmentation, above)
Sk440A	G84	F 25–35	S1 arch open, S2 and S3 arches unfused in midline (S4 and S5 show sacral hiatus)
Sk687B	G110	F 25–29	S3 arch open (S4 and S5 show sacral hiatus)

will tell us nothing about ancient attitudes to disability.

Neural arch deficit is relatively common. Brothwell and Powers (1968) found an average prevalence of 17% in archaeological British populations and up to 25% in the modern world, although they did not distinguish types of defect; their findings conform to Barnes's (1994, 119) maximum 25% for cleft neural arch in the Americas. Turkel (1989, 119) states that an affected arch can continue to close up to mid-adulthood and prevalence does not stabilise until about age 35; he must be describing cleft arch, as closure would be prevented in the other conditions by pressure of the cerebro-spinal fluid.

The case of Sk300A (grave 65) appears to be that of *spina bifida occulta*, because of the gaping nature of the left side of the opening. The other four Barrington cases are of cleft neural arch, skeletons Sk148 (grave 48) and Sk440A (grave 84) exhibiting minimal forms. Prevalence is low, at 6.7% (five out of the 75 sacra which had undamaged or restorable arches), and if we follow Turkel only three cases should be included as aged 35 years or thereabouts at death: this gives a very low prevalence of 4.0%. None of the cases have contextual relationships as they are about as widely spread around the excavated area as they could be, but the cases of Sk100 (grave 30) and Sk300A have some resemblance in the uncommon displacement between the sides.

4.6.7.5 Spondylolysis (Fig 4.28)

This disorder illustrates the inter-relationship between genetic tendency and trauma. The vertebral arch is found to be separated from the body of the vertebra at the area called the *pars interarticularis* (the area between the upper and lower articular facets). It is most common in the lumbar vertebrae, particularly the lowest lumbar. In life fibrous tissue would fill the defect and the condition would be asymptomatic unless the unstable vertebral body slipped forwards, producing the condition called spondylolysthesis which can cause slowly-increasing sciatic pain (Adams 1961, 196–7).

There has been argument about the causative factor, which has been seen as an inherited weakness of the lumbar spine – and therefore a marker of familial relationships – or acute or chronic trauma of the spine. It almost certainly results from the stresses of strenuous work because it appears to be a uniquely human condition, is never found at birth, predilects males, is scarcely ever found in the immobile and occurs most frequently in people doing manual labour or sports involving heavy lifting (Merbs 1994, 170). On the other hand, the predispo-

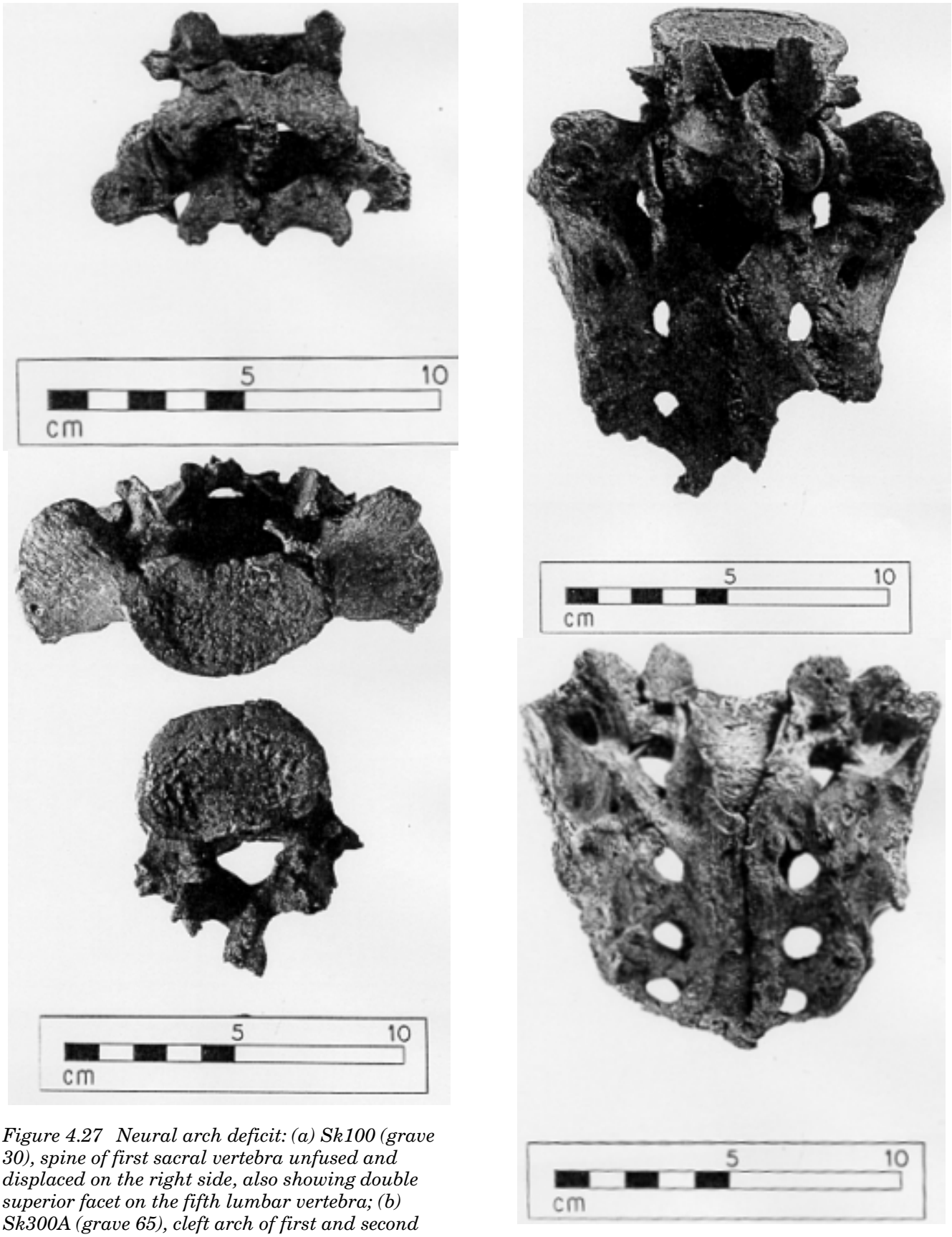


*Figure 4.27 Neural arch deficit: (a) Sk100 (grave 30), spine of first sacral vertebra unfused and displaced on the right side, also showing double superior facet on the fifth lumbar vertebra; (b) Sk300A (grave 65), cleft arch of first and second sacral segments (*spina bifida occulta*) with deviated facets and spine of fifth lumbar vertebra; (c) the same vertebrae separated to show absence of left sacral arch and altered articulations; (d) Sk440A (grave 84), spines of second and third sacral segments unfused*

Table 4.24 Spondylolysis

Sk146	G46	M 23–59	bilateral spondylolysis L5
Sk148	G48	M 25–45	bilateral spondylolysis L5
Sk428	G79	F 30–34	bilateral spondylolysis L4 unilateral spondylolysis L5: half arch separated with false joint and altered articulation with S1
Sk436	G83	F 25	bilateral spondylolysis L5

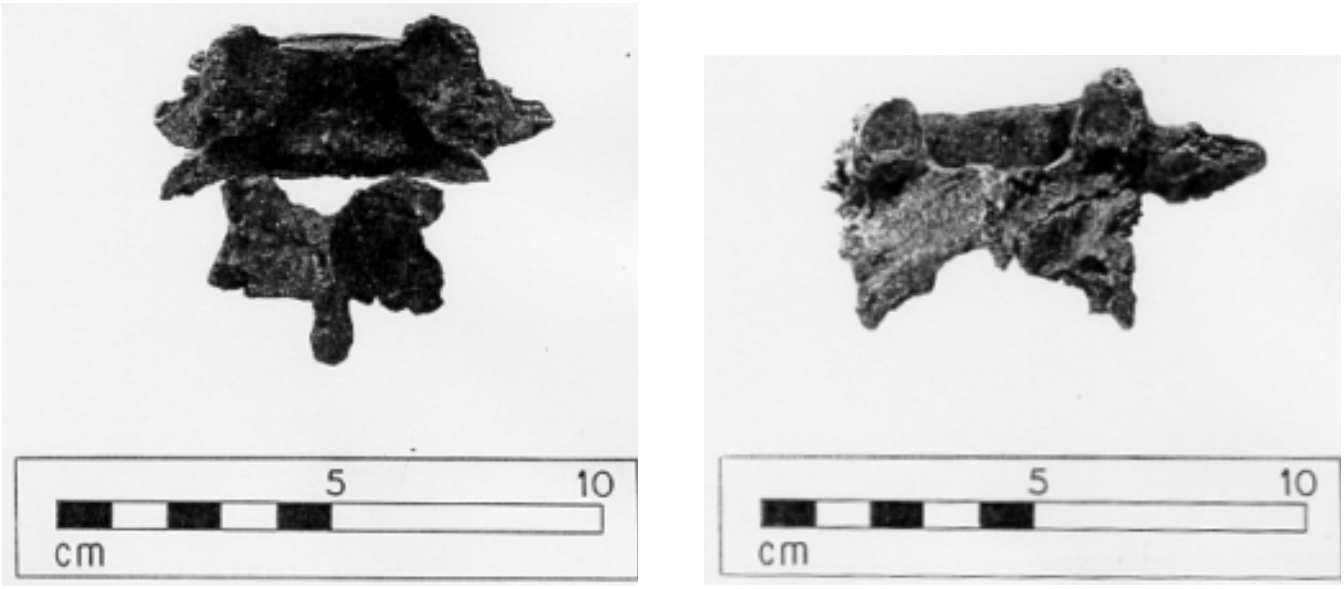


Figure 4.28 Spondylolysis in Sk428 (grave 79): (a) bilateral spondylolysis of fourth lumbar and (b) unilateral spondylolysis of fifth lumbar vertebrae

sition to this fracture appears to be inherited (Merbs 1994, 171). Waldron (1991, 64) states:

> There is no doubt that genetic influence is important and there are families in which a quarter of the members have spondylolysis, frequently associated with other congenital anomalies of the spine, such as transitional vertebrae or spina bifida. Clinical and experimental evidence, however, tends to support the view that these lesions are acquired as the result of trauma sustained between infancy and early adult life.

Thus, an inherited tendency to fracture in this region produces no skeletal changes unless trauma places insupportable stresses on the spine.

The four cases found at Barrington represent 4.1% prevalence in the 98 reasonably-preserved spines (Table 4.24). They are too few to suggest any patterns of heritability on their own, but the two women are buried close to each other: they could have shared a common genetic heritage with a tendency to develop this condition, but, equally, they might be the only two people whose lifestyles traumatised the lower spine out of a larger group with this shared heritage. The two males, on the other hand, have already been mentioned as possibly related ('Epigenetic traits', above), so this additional evidence supports the suggestion. There is known to be some connection between spondylolysis and neural arch deficit, and this is shown in the case of Sk148 (grave 48).

4.6.7.6 Other 'epigenetic traits'

Septal aperture – a hole through the olecranon fossa of the humerus – is related to gracility in the skeleton, and is thus more common in females or populations of slight build (a hypostotic trait: Saunders 1989, 96 and 100; in gracile ancient Nubians: J Filer pers comm). The female Sk440A (grave 84) has already been commented on as being extremely gracile, but none of the others are perceptibly light in build. Our prevalence is 4.8% (five out of 104 skeletons with at least one humerus), but no comparable prevalence data are available. When plotted on the site plan, the distribution of septal aperture shows no patterning, unlike the cranial traits and spinal anomalies discussed above, but resembles the

Table 4.25 Other 'epigenetic traits'

Sk4	G3	F 25–35	septal aperture
Sk147B	G47	F 26–70	septal aperture
Sk161	G54	F 17–25	sternal aperture
Sk431	G81	M 45–49	septal aperture
Sk440A	G84	F 25–35	septal aperture
Sk530	G95	F 52–59	septal aperture and scapular foramen
Sk727	G115	M 20–24	bipartite trapezoids

apparent randomness of the trauma or activity-related conditions: certainly, if there is a heritable element in its expression, this seems to be subsumed in the environmental effects. Sternal aperture is a disorder of delayed development with a prevalence of approximately 4% in Europeans (Barnes 1994, 223). It is found in only one Barrington individual, which is 2.2% prevalence out of 45 sternums with at least one unbroken segment. Scapular foramen is also present in one individual, and is scored as an epigenetic trait by Berry and Berry (1967) although its significance as a heritable trait is not known.

One case has been included here for convenience because I assume it derives from a minor disorder of development: Sk727 (grave 115) has both trapezoids divided at the same point and represented by small, intriguingly-shaped bones which would not have been identifiable had they not been painstakingly excavated and bagged for me with their companion carpals.

4.6.8 Neoplasia

4.6.8.1 Button osteoma

These small, dense, rounded lumps on the skull vault are harmless and asymptomatic overgrowths of cortical bone and are found in at least 1% of all autopsies (Ortner and Putschar 1985, 368). One is present on the occipital of Sk148 (grave 48).

4.6.8.2 Metastatic carcinoma

When cancer cells from one site in the body are 'seeded' to another site, the cancer is said to have metastasised. In the skeleton it usually produces widespread destructive (osteolytic or osteoclastic) changes with distinctive distribution patterns depending on the site of the original lesion, but a few carcinomas, notably that of the prostate, cause productive (osteoblastic) changes. Ortner and Putschar (1985, 392) report the frequency of carcinomas metastasising to the skeleton as up to 76%, and they would expect high frequencies in archaeological material in which the disease would have to take its natural, and often protracted, course. Steinbock listed ten known archaeological cases (Steinbock 1976, table XVI) and now, two decades later, Strouhal has recorded several hundred examples, showing the increase in both palaeopathological studies and diagnostic accuracy. One case, 0.7% of the population, has been found at Barrington, and will only be outlined here because it has been extensively described elsewhere (Duhig *et al* 1997).

The mature male Sk146 (grave 46) has characteristic destructive lesions in his entire axial skeleton and some parts of the long bones (Fig 4.29). These can be demonstrated macroscopically, radiographically, histologically, and by scanning electron microscope. The source is indeterminable but most lytic metastases in male skeletons derive from the kidney, thyroid, lung, and gastro-intestinal tract (Steinbock 1976, 387). This man's skeleton was accompanied by a spear, and although he would probably have become incapacitated by his disease as it advanced, he was a tall and robust man and there is no evidence to suggest that he could not have been an effective warrior when younger.

4.6.9 Other conditions

4.6.9.1 'Scars of parturition'

Amongst other changes, indentations, pits and grooves on the dorsal aspect of the pubic symphysis, accompanied at times by new bone growth, have been called scars of parturition, because of their association with pregnancy stresses on the tendinous and ligamentous attachments to this area. Some authors have used these changes to estimate the number of pregnancies in individual skeletons. There is, however, poor correlation between the presence of 'scars' and known pregnancies: they exist in some females who have never borne children and increase with age independent of pregnancies (Suchey *et al* 1979). Sk440A (grave 84) might have borne at least one child, the neonate found with her in the grave, and

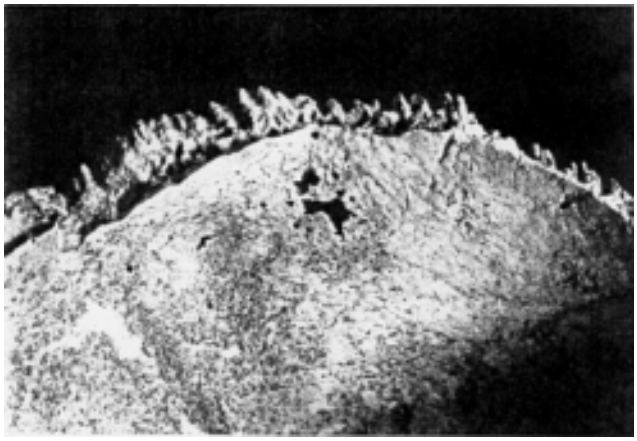
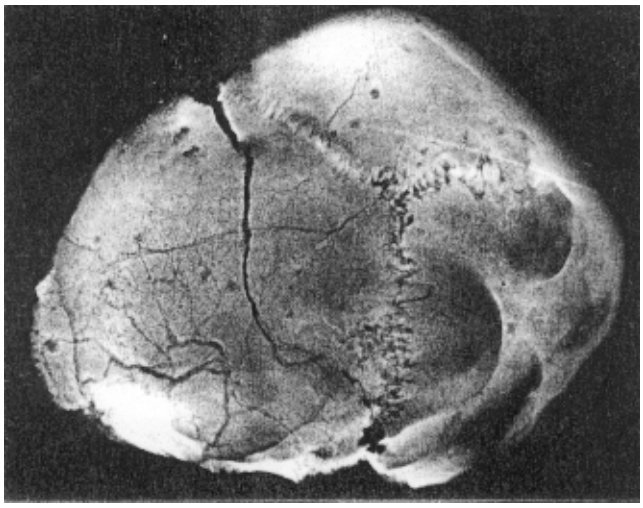


Figure 4.29 Metastatic carcinoma in Sk146 (grave 46): (a) characteristic ragged lesions in the skull vault; (b) similar lesions in the neck vertebrae; (c) lesions shown radiographically. (Photographs by Alison Taylor)



Sk161 (grave 54) is also a female, but a considerably greater prevalence would be needed to approach the number of parous females to be expected in a normal cemetery such as Barrington A (Table 4.26).

Table 4.26 'Scars of parturition'

Sk161	G54	F 23–35	'scars of parturition'
Sk440A	G84	F 25–35	'scars of parturition'

4.6.9.2 Osteoporosis

Osteoporosis – loss of bone mass and consequent fragility – is caused by a range of metabolic disorders, but most commonly by increasing age. This is due to the processes of bone formation gradually falling behind those of bone resorption, especially in women, whose hormonal environment alters dramatically after menopause. Modern comparative studies show that the condition is most prevalent in affluent, industrialised countries while active older persons in undeveloped countries show comparatively slight bone-mass loss (Ortner and Putschar 1985, 289). Thus, a low prevalence should be expected in past populations except when some individuals were prevented from or avoided physical exertion.

There is only one case from Barrington, the prevalence is thus 0.7%, or 0.9% of the adults. Sk458 (grave 90) is a woman probably over 60, whose spine x-radiograph clearly shows loss of trabecular bone, mostly horizontally, which gives a vertical columnar effect to the interior of the vertebrae. In the femora, loss of the trabecular system which passes from the lesser to the greater trochanter (one of three groups of bone-columns which transmit weight-bearing and walking stresses from body to legs) is marked, producing a Ward's triangle of weakened bone at the femoral neck, the preliminary to the common hip fracture of the elderly (Ortner and Putschar 1985, 290). Is it her ageing physiology which has produced this condition (she is the oldest person in

Table 4.27 Dense endocranial new bone

Sk2	G1	F 35–39	dense nodules of endocranial new bone, postorbital and close to frontal midline
Sk367A	G71	M 25–35	dense nodules of endocranial new bone, in frontal and anterior R parietal
Sk526	G93	F 35–45	dense nodules of endocranial new bone, close to frontal midline
Sk626A	G106	F 18–20	dense nodules of endocranial new bone, in frontal

the cemetery, at least according to methods currently available), lack of activity, or both? Advanced age often necessitates a decreased workload, and so she could have been on 'light duties' and thus hastened her metabolic bone loss by lack of muscle activity.

4.6.9.3 Dense endocranial new bone (Fig 4.30)

In these individuals (Table 4.27 above), small nodules of apparently-cortical bone are found within the vault, behind the orbits and close to the midline of the frontal. They have a linear composition, resembling blobs of paint applied with a coarse brush. The changes do not correspond to the endocranial new bone described above: they are dense and, in their central portions, contiguous with the normal cortex, with no vascular channels. The diagnosis of an early stage of *hyperostosis frontalis interna* (HFI) is suggested (D Brothwell pers comm) but this condition predilects females against males in a ratio of 100:1 and is associated with hormonal change after menopause (Ortner and Putschar 1985, 294). The sexing of Sk367A (grave 71) is as definite as any skeletal sexing can be – there were no associated goods – although this might be one of the few males affected by HFI, but finding the condition in the young female Sk626A (grave 106) makes the HFI diagnosis even less likely.

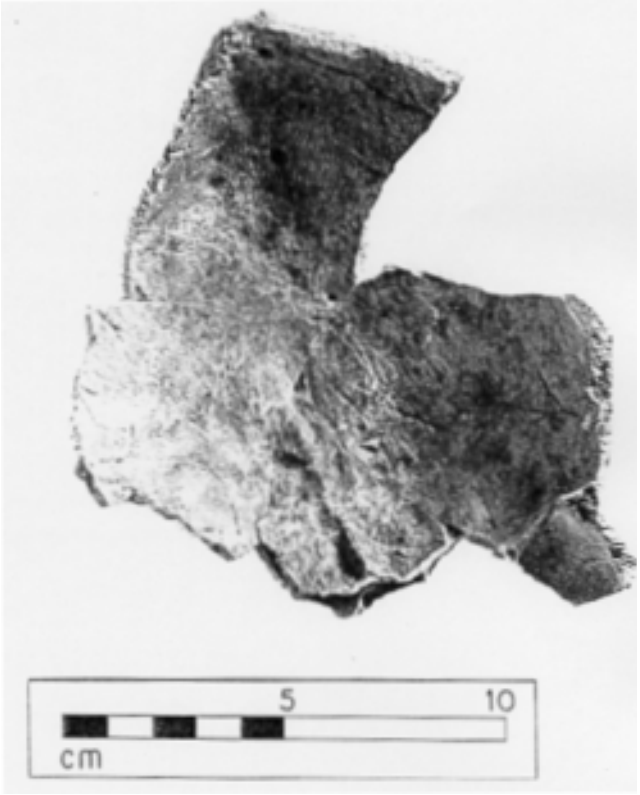


Figure 4.30 Endocranial nodules of new bone ('paint blobs') in the skull vault of Sk367A (grave 71), close to the midline of the frontal

4.6.9.4 Aneurysm of the internal carotid (Fig 4.31)

In the female Sk135 (grave 42), approximately 50 years of age at death, a smooth-sided indentation in the middle fossa of the skull was probably produced by the pressure of an aneurysm (a 'ballooning' weakness of a blood-vessel wall) of the internal carotid artery (D Hawkins pers comm).

4.6.10 Sk440A (grave 84), a case study in multiple pathological changes (Fig 4.32)

Sk440A has been mentioned under *arthropathies* and in several succeeding sections, in which most references will be found, but her multiple skeletal changes are discussed here, and in Table 4.28 below, as a single case study.

It is stretching credibility rather far to suggest that all of these skeletal changes are independent, but how are we to relate them? Even before the effects of outrageous fortune, this woman had some unusual skeletal features: she was short and extremely gracile; she had a marked disproportion between left and right femoral lengths; both her forearms were angulated outwards even more than the female norm (women's elbows are angulated outwards slightly more than men's, this is thought to facilitate the forearms clearing the wider female pelvis); she had septal apertures which probably simply indicate her slight build; the arch of her sacrum was unfused, perhaps an inherited defect – although we cannot relate her to the three other individuals with this condition in the cemetery – perhaps a result of maternal malnutrition or disease during pregnancy.

In the course of her life, both femora became extremely flattened from front to back (hyperplatymeric) and large gluteal tuberosities developed, as a result of extreme or unusual muscular activity, and

Table 4.28 A case study in multiple pathological changes

Sk440A	G84	F 25–35	1. vertebrae: Schmorl's nodes T5–12, L1–4; T1 and T2 fused in body and arch, slight wedging to R and deepened costal facets on bodies, especially R; T spines slightly laterally deviated, roughly alternately L and R 2. innominates: deep vertical grooves on dorsal aspect of pubic symphysis ('scars of parturition') 3. sacrum: neural arch deficit (cleft neural arch) 4. L and R scapulae: *os acromiale* 5. L elbow: septal aperture; lipping around joint surfaces of distal humerus, trochlear notch, olecranon process and radial head; carrying angle of extended elbow *c* 196° 6. R elbow: septal aperture; coarse new bone on joint surfaces and massive lipping of distal humerus, trochlear notch and olecranon process; olecranon process pierced by cloacae; superior radio-ulnar joint lipped; radio-humeral joint cystic and eburnated, mass of new bone on postero-lateral aspect of radial head (posterio-medial if anatomical position were possible), location and form of new bone suggests forearm necessarily fixed in pronation; radial tuberosity pitted and with new bone; carrying angle of extended elbow *c* 204° 7. legs: massive lipping around joint surfaces of distal L femur, patella and proximal tibia; L femur bone spur at insertion of *vastus lateralis*, raised gluteal tuberosity; L femur length 420mm, R femur 404mm (not all due to new bone as head-epicondyle length also unequal); both femora hyperplatymeric 8. extremities: L scaphoid, lunate, triquetral, trapezoid, capitate, enlarged nutrient foramina; R mt1, lateral side of base, small hole; R mt3 enlarged nutrient foramen on head; calcanea, rounded erosions of tuberosities, enlarged nutrient foramina on R; R navicular, large smooth-sided perforation distally, plantar to articular facets, emerging as small hole in proximal articular surface

Figure 4.31 Aneurysm of the internal carotid in Sk135 (grave 42): the skull base viewed from above, centred on the medial part of the right middle fossa and the pituitary fossa. The erosion lies in the middle fossa between the foramen ovale and foramen rotundum

bilateral *ossa acromiale* were produced by the stresses of heavy work on her shoulder joint. At some time an infection entered her right elbow, the pus from which produced cloacae as it escaped, and it is probably this or another infection which caused the perforation of the navicular bone, the erosions of the calcanea, and the enlarged nutrient foramina of the other hand and foot bones. The two fused and wedged vertebrae might have been damaged in a fall, although wedging tends to be antero-posterior in these cases (Adams 1969, 94) and a developmental disorder should also be considered.

A scenario has been suggested for some of the changes (G Mann pers comm): a fall as one knee gave way, damaging knee, elbow, and spine, admitting infection through a wound to the elbow and producing severe arthritis of the affected elbow and knee and bone changes on the femora due to altered movement. The form of the vertebral wedging and the signs of infection away from the elbow present problems, however. There seems to be reasonable evidence that, even before this postulated accident, this woman either undertook very hard work or suffered damage from an unexceptional workload because of her delicate build.

She was buried with an infant child, aged between eight to nine foetal months and two months, beneath her head. We think first of death in childbirth, and certainly the baby's age is in the correct range, but both might have died from another cause – infection seems the most likely – after a successful delivery. I have shown, above, that 'scars of parturition' are not reliable indicators of previous pregnancies, so we cannot even be sure that the child was that of the woman it was buried with. Anderson (1993, 267) mentions a report that 19th-century infants and children were sometimes buried with unrelated

Figure 4.32 The case of Sk440A (grave 84): (a) fusion of first and second thoracic vertebrae; (b) right elbow in its natural position, fixed in pronation (with the hand turned palm downwards) with massive new bone growth, cysts, and eburnation; (c) left knee with new bone development

women 'for company', and Crawford (1991) describes the practice for the Anglo-Saxon period, so perhaps this tiny baby died at the same time as an aunt or neighbour and shared her grave for company or convenience, although subjectively a mother-and-child grouping seems more likely.

The unusual case of Sk440A contrasts with that of Sk148 (grave 48), a man of similar age who had a number of common and explicable pathological conditions, all of which have been mentioned in the appropriate sections above. He was metopic, had Wormian bones and a small ivory osteoma on the back of his skull, all clinically insignificant and unnoticeable in life. There are third trochanters on his femora, the fifth lumbar vertebra demonstrates spondylolysis, and part of one fifth metatarsal has been broken and pulled away: these are signs of strenuous activity and one everyday sort of accident. More dramatically, he had a well-healed skull wound or trepanation, showing that he had suffered

weapon-injury or surgery or both. He was of average height and robust build, and we can regard him as a good example of a sturdy, healthy Anglo-Saxon man whose life had included hard physical work and, probably, some warfare.

Chapter 5 The finds

(Finds information is summarised in Table 3.3)

5.1 Introduction

The artefactual finds are a key component in several aspects of the analysis of the cemetery and attempts to reconstruct its original cultural-historical context which are presented in Chapters 7 and 8. The following survey of the finds is intended first and foremost to cover certain issues, especially concerning classification, essential to those further studies rather than to be an exhaustive descriptive survey. As well as an explanation of the typological schemes used in this report, notes will be found here, where appropriate, on the dating of certain artefact-types and their distribution both within this cemetery and generally, in anticipation of the fuller discussions that follow.

It is recognised, however, that a general survey of the finds can be a helpful and informative way of characterising the site, and that such a survey should serve as an annotated index to the site for other researchers. In certain cases, particular finds can be recognised as being of especial importance in terms of the known history of a particular artefact-type, and such points are also discussed in this chapter. Moreover, as the overwhelming majority of the 19th century finds attributed to Barrington A are loose finds with no more precise context, it is only through a general survey of the finds that a comparison of these early and the more recently obtained data can be undertaken.

The finds are grouped here into five major categories reflecting their function – dress accessories; tools and personal equipment; weaponry; vessels; grave furniture – with a small final miscellaneous group. Each of these categories is internally subdivided.

5.2 Dress accessories

5.2.1 Brooches

5.2.1.1 Cruciform and small long brooches (Graves 3, 13, 19, 39, 53, 66, 93, 96, and unstratified)

These closely related classes of brooches have enjoyed very different levels of scholarly attention. For the cruciform brooches, a classification involving five basic types (Groups I–V) introduced by Nils Åberg in 1926 and still widely used (Åberg 1926; Leeds and Pocock 1971) can now be superseded by an essentially very similar but fundamentally reassessed and more thoroughly presented system developed by Catherine Mortimer (1990). This again has five basic types, A–D and Z, which correspond closely to Åberg's Groups I–V, with a varying number of subtypes defined within each main type.

It is also not difficult to reconcile this system of classification with Joachim Reichstein's far more internationally oriented scheme (1975), which identified a relatively large number of *Typen*, ie groups of very similar brooches, which in turn he grouped into strata in a typological-chronological series. Mortimer's Type A brooches (defined by a full round top knob and separate side knobs on the headplate) correspond closely to Reichstein's *ältere* and *jüngere* types; Type B (defined by half-round headplate knobs, larger headplates but 'unelaborated' terminals) to Reichstein's *späte* types; Types C and D (defined by 'expanded terminals, without or with lappets below the bow respectively') to Reichstein's *späteste* types. Reichstein did not include the 'florid' cruciform brooches (Type Z) in his survey. Mortimer, conversely, limited her study and classification to cruciform brooches with animal-head terminals, thus excluding brooches with a cruciform type of headplate and a spatulate foot. Such brooches are, however, relatively numerous, and are assigned by Reichstein to several *Typen* (Types: Barrington, Bradwell-on-Sea, Feering, Ferwerd, and Foldvik-Empingham: see Reichstein 1975, 37–46 and Tafn 68–9, 98, 100–1 and 107). This type of brooch is also well represented in South Cambridgeshire, and has been included in the further analyses in this book under the designation of Type Bb.

Detailed assessment and testing of the relative chronology of cruciform brooches implied in Åberg's typology and Reichstein's phasing have shown these to be realistic in principle in so far as they represent the general trend of development for this brooch-type, but of rather limited practical applicability in the close dating of the contexts in which they appear. Mortimer's chronological study, involving combinations between different types of cruciform brooch, apparent punchmark links between cruciform brooches, other find-associations for cruciform brooches, and general typology, substantiates Hines's earlier observation (1984, 26–9) that the *späte*, *späteste*, and florid types (Types B, C–D, and Z respectively) indeed appear to have been introduced in that order, but that they overlap considerably so that all three stadia are eventually in concurrent use.

The only substantial published study of Anglo-Saxon small long brooches is that of E T Leeds (1945). The late M D Howe's comprehensive research on this brooch-type unfortunately never reached completion. The classification of small long brooches employed here is a new scheme, albeit one that

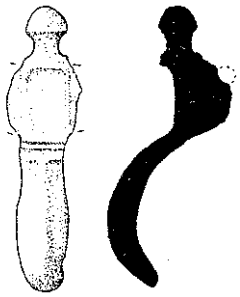


Figure 5.1 Early cruciform brooch, metal-detected fragment, Barrington A or B (Scale 1:1)

harmonises closely with Leeds's scheme. As Leeds observed, the major variables in the form of small long brooches are the shape of the headplate and the shape of the footplate. These are in many respects independent of one another. Helpful recent publications of continental finds have now given us a much clearer understanding of the history and significance of various forms. In respect of the shape of the footplate, it is now apparent that variation here tends to have strongly regional associations. The rhomboidal or 'lozenge-shaped' footplate is a feature of Saxon areas on the continent, while this form and what appear to be elaborate developments of it are appropriately markedly more common in southern England than in the midlands or the north; the spatulate foot, conversely, is a continental Anglian and southern Scandinavian feature (Böhme 1986, 554–8; Leeds 1945, Figs 24 and 35).

The headplates are a clearer guide to typological development. It is impossible to explain the development of small long brooches in northern Germany in the 5th century other than as an offshoot of the cruciform brooch. Most similar to the headplate of the cruciform brooch in appearance are the trefoil-head small long brooches, but these are still unattested alongside the mass of cross-headed small long brooches of Schleswig-Holstein and Niedersachsen (Hines 1984, 12). In respect of the latter types, we have abandoned in this classification the distinction Leeds drew between cross pattee types (with trapezoid arms) and cross potent types (with more rectangular arms), as in its clearest form the former type seems to be a minor variant of the latter, and a distinction between the two is often difficult and sometimes impossible to make in practice.

The fourth basic type of headplate Leeds distinguished was the square head. As with the trefoil types, continental sources or even parallels for this seem extremely scarce. There are, however, now some good examples amongst metal-detector finds from Stenhøjgård, Gudme, on the island of Fyn in southern Scandinavia (eg National Museum, Copenhagen jnr 999 × 1458, 1479 and 1482).

The Anglo-Saxon small long brooch series also includes elaborate 'derivatives' of the trefoil, cross and square types of headplates. It is proposed here that these can satisfactorily be divided into two principle types. The cross-head derivative types are defined as those with headplates of rectangular outline decorated by notching or perforation, these breaks in the outline being interpreted as residual traces of the space between the arms of the headplate. Square-head derivative types are those with basically rectangular headplates elaborated with ornamental excrescences in the corners. That these derivative types represent a later stage in the development of small long brooches than the simple trefoil, cross-, and square-head types seems to be confirmed by a strong correlation between derivative headplates and the provision of lappets below the bow – which can be assumed to follow the same trend as cruciform brooch design. Again, however, we must reckon with a long period of concurrent use of both the earlier and derivative types.

There are two cruciform brooches from grave contexts from the recent excavations, grave 13 (Type D) and grave 93 (Type C). A further three fragments are amongst the recent unstratified finds, one of them apparently a burnt(!) fragment of the headplate of a Type Z brooch, the others not certainly classifiable except that they are not of Type A. A metal-detector find reported and drawn in 1991 is of the headplate and bow of a Type-A brooch (Fig 5.1). Unfortunately it is unclear whether this fragment was found in Hooper's Field (the site of the Barrington B cemetery) or at Edix Hill. There are a further seven brooches amongst the 19th century finds attributed to Barrington A (hereafter abbreviated to BA), three of Type B, one of Type C, and three of Type D.

Of the large number of small long brooches from the site, all except one have the spatulate foot. The exception is a square-headed specimen found in the 19th century that has a triangular footplate, at its broadest below the bow and tapering towards the terminal – a type that can be regarded as an elaboration of the rhomboidal type. Eleven brooches derive from eight of the recently excavated graves, three graves containing pairs of brooches: five cross-headed (grave 3, grave 19, and grave 66), three trefoil (grave 53 and grave 96), one square-headed (grave 39) and two square-head derivatives (grave 13 and grave 93). There are five further unstratified fragments from the recent excavations, three square-headed headplate and bow fragments, one spatulate foot and one complete cross-head derivative brooch. Amongst the extant 19th century finds are 29 more brooches. Of these four are from grave groups, a pair of trefoil brooches from grave BA2, a square-headed small long brooch from grave BA15, and a square-head derivative specimen from the grave group reported by Charles Babington in 1860, where it was associated with a cross-head derivative brooch no longer identifiable. The remaining 25 brooches include seven pairs of brooches and eleven single specimens. Altogether, the simpler headplate-types are much more common that the derivatives: ten trefoil, twelve cross, and twelve square-headed types against four square-head derivatives and 6 cross-head derivatives. There is no significant variation in

the range of types collected at different times or by different methods.

5.2.1.2 Applied disc or saucer brooches and cast saucer brooches (Graves 29, 68, 79, 95, 106, and unstratified)
(Incorporating a report by Tania Dickinson)

As is well known, these are brooch-types of continental Saxon origin. In the case of the applied brooches, it can be impossible to determine whether a brooch with no surviving rim ever had one, hence the common designation of these as disc or saucer brooches.

The earlier types of applied brooch in Anglo-Saxon England have been quite extensively studied; regrettably, little detailed attention has been paid to the later types such as are represented at Edix Hill. Two pairs of brooches were found in grave contexts in the recent excavations (grave 29 and grave 95). All are of the type with zoomorphic, Style I ornament. Those from grave 29 are a matched pair with a drop of blue glass inset in the centre (Fig 3.45); the pair from grave 95 is unmatched though of similar design to one another (Fig 3.61). The pair from grave 29 bear a strong similarity in design to an applied brooch from Barrington B grave 108 and a cast saucer brooch from Upton, Cambs (Leeds 1912, pl XXVII 2; Dickinson 1993a, fig 39). Slightly loose but nonetheless real parallels to the designs of the grave 95 brooches can be cited both locally, from Little Wilbraham grave 158, and from the Upper Thames region, ie from Abingdon I grave B119 and Frilford, Oxfordshire (Hines 1997, pl 116f–g; MacGregor and Bolick 1993, nos 1.2 and 1.3).

Once again, there is a larger number of brooches of this type amongst the 19th century collections. None is from a known grave group. One has an inner panel of Style I ornament surrounded by a wide border filled with chevrons that may derive from earlier star designs and has lost a (presumably glass) inset from the centre. A very close parallel is known from the site of Duston, Northants (Central Museum, Northampton D181a/1956–7). There are four of a familiar type known as the Kempston Type, with four *en face* masks set in a cross around the centre and Style I in the remaining panels; two of these form a matched pair. Other examples of this design are again found in an area between northern Suffolk and Wiltshire, but are concentrated mostly around the Cambridge region. Kennett (1971) notes that these brooches are particularly frequent from the two Barrington cemeteries, listing thirteen specimens from here, with a pair from Haslingfield in addition. A different specimen has a plain applied disc with punched decoration and a small raised central boss. There are again parallels to this plain type of decoration to the west, from Wheatley, Oxon, and Beckford B, Worcs, grave 74 (MacGregor and Bolick 1993, 1.20; Hines 1997, fig 117c), though the closest parallel to the actual layout of the stamps and the central boss is found on a disc that may have served as a disc brooch on its own, from Searby, Lincs (BM 93, 6–18, 16).

Cast saucer brooches occurred in matching pairs in three of the recently excavated graves (grave 68, grave 79, and grave 106). The grave 68 brooches are identified by Dickinson as the 'marigold' type, belonging to a small but distinctive group distributed in the southern Midlands (Dickinson 1993a, 23). Dickinson (archive report) notes that the designs within this group tend to become plainer and larger further west, suggesting that this may be a type originating in this eastern locality and spreading in that direction. The other two pairs are both of the spiral-decorated types, 5-spiral in grave 106 and 6-spiral in grave 79. Dickinson attributes the former to subgroup IIB5.3 of the 5-spiral type (cf Dickinson 1991). Brooches of 6-spiral type are less numerous, and it is noted that the grave 79 brooches are unique in the form of the central boss (without a ring) and in their wide, panelled outer field. Most 6-spiral brooches are found in the Upper Thames and Warwickshire Avon regions, or further south.

Tania Dickinson suggests that the recently found unstratified fragment of a cast saucer brooch from Edix Hill reconstructs most comfortably as a hitherto unparalleled version of the 5-spiral design (Fig 3.65), although the apparent diameter of the original brooch (*c* 41mm), and a calculation of the arc filled by one spiral, suggests that 6 spirals could have fitted in. A pair of 6-spiral cast saucer brooches was found in grave BA11 in the last century (Smith 1868, pl XXXIII.1). There are finally three unstratified specimens of the 5-pointed star type of cast saucer brooch in the 19th century collections, one pair and one singleton (MacGregor and Bolick 1993, 2.25; Smith 1868, pl XXXIII.2).

5.2.1.3 Great and small square-headed brooches (unstratified)

An up-to-date and comprehensive classification of the great square-headed brooches of Anglian and Saxon England (ie excluding the distinct Kentish series) has been published by Hines (1984, 110–98, and 1997). The small square-headed brooches of the same areas of England have regrettably been neglected, although in several cases they can be shown to be related to either the Kentish or the Anglo-Saxon great square-headed brooch series.

No brooch of either of these classes comes from a grave context from the recent excavations. There are, however, two unstratified fragments in this collection. One of these (Fig 3.65 18) is of considerable interest as it is clearly identifiable as the footplate terminal lobe of a Group II brooch. The known members of this group have a unique and wide distribution. The two members of the group of earliest form are 'Kentish' brooches, one from Sarre, Kent, grave 159 and one from the highly Kentish-influenced cemetery assemblage at Herpes, Charente,

western France. All the other known members of this group, of apparently derived form, are from north of the Thames (Duston and Newnham, Northants; Mucking, Essex; Linton Heath, Cambs; West Stow, Suffolk; Tuxford, Notts) except for one truly curious lead piece from Geneva in Switzerland.

The new Edix Hill specimen is of especial importance as it has a red garnet inlay, a feature which is otherwise only known on the two 'Kentish' specimens. The form of the Style I limbs around the inlay is slightly coarser on this fragment compared to those brooches, though the transformation has gone much further on all of the other brooches from the southern Midlands. The brooch from Linton Heath grave 21 has red enamel in place of the garnet inlay; the other Anglian brooches have no inlay at all. The Edix Hill fragment is, therefore, in effect the missing link between the Kentish and Anglian stages of this group. There is a distinct possibility that it was made in and imported from Kent, but there can be no certainty over this.

The other unstratified fragment from the recent excavations is small and worn, and unclassifiable. It certainly appears, however, to be the footplate side lobe of a square-headed brooch.

Three great square-headed brooches derive from the 19th century collections. BA11 contained a Group XV brooch, a member of a relatively large and homogeneous group found in cemeteries in Cambridgeshire and neighbouring parts of East Anglia and Northamptonshire (Hines 1997, pls 46–50; BA11: pl 47b). The other two brooches have no grave associations. Neither of them belongs to a formally established group like the grave BA11 brooch or the Group II specimen, though in both cases specific parallels with other brooches can be identified. One (Hines 1997, pl 90c) can be grouped with three other brooches that are distributed across the southern Midlands and East Anglia on the basis of the form of its footplate lobes. It also has a rather crude but recognisable version of the animal ornament found in the headplate of Group XV brooches, with which it can therefore be regarded as broadly contemporary. These two brooches, then, were presumably manufactured quite locally.

The third brooch is in two pieces, one in the Cambridge University Museum of Archaeology and Anthropology (CUMAA), and one in the British Museum (Hines 1997, pl 101a). It has only very recently been recognised that these fit together to form a single brooch. This brooch has one distinctive feature that also occurs on other great square-headed brooches in southern England in the form of capstan-shaped studs riveted into the footplate side lobes. This is an insufficient basis, however, for any inferences to be drawn as to the origins of this brooch.

The one small square-headed brooch from this site is a fragment that is a recent unstratified find (Fig 3.65 2). This too can be related to the known Anglo-Saxon great square-headed brooch series. Around the headplate of this brooch is a panel of symmetrical Style I animal ornament which is evidently closely related to the design in the headplate second panel of a brooch from Broughton Lodge, Willoughby-on-the-Wolds, Notts grave 16 (Hines 1997, pl 35a). This is a Group X brooch; indeed the brooch of apparently earliest form within that group. Although found at some distance from southern Cambridgeshire, Group X generally is strongly linked to the local area. There are three Group X brooches from Little Wilbraham, two from along the Icknield Way in Buckinghamshire (Farley and Hines 1997), and, amongst others, a further example from Lackford, Suffolk. The case for local manufacture of this small square-headed brooch is, therefore, strong.

All of these brooches can be attributed to various phases of the typological relative chronology of Anglo-Saxon great square-headed brooches although this does not imply any great range in their dates of manufacture in absolute terms. The early Group II brooches belong to the earlier stage of Hines Phase 2, estimated to begin perhaps as early as *c* 510 and to continue to about the 530s. Group X belongs to the second stage of Phase 2 which can be roughly be attributed to the second quarter of the 6th century. Although formally later developments, a high proportion of the Hines Phase 3 brooches have to be regarded as broadly contemporary with later Hines Phase 2 brooches. The Group II fragment is therefore likely to be the earliest specimen identified on this site, and most of the other examples to be from a slightly later phase.

5.2.1.4 Disc and openwork disc brooches (Graves 13, 19, 39, 96, and unstratified)

There may be no very good archaeological or historical reason to place these two classes of brooches under a single heading, but since the typological relationships of both classes are so emphatically obscure, doing so here is unlikely to seriously mislead.

Anglo-Saxon disc brooches have been the subject of a thorough study by Tania Dickinson (1979). This did not offer a definite subclassification of types within this class, although variability in decoration and size were described and discussed. Geographically, Anglo-Saxon disc brooches closely mirror the distribution of cast saucer brooches, and it is reasonable to conclude that functionally they constitute a formally simpler (though not necessarily humbler) counterpart to those saucer brooches. It would not be difficult for this cast form to have evolved from the base plates of Saxon applied disc brooches or even tutulus brooches. The issue is complicated, however, by the existence of Romano-British disc brooches, while a couple of Late Roman or Migration period specimens are even known from Jutland (Østre Tørslev, Randers amt: National Museum, Copenhagen C10077; Fruering, Skanderborg amt: same museum C22889). That the Anglo-Saxon disc brooch emerged from the convergence of these different sources seems a

reasonable possibility. Several Anglo-Saxon disc brooches are from contexts datable to the second half of the 5th century.

The recent excavations produced three single brooches in grave contexts (grave 13 Fig 3.36, grave 39 Fig 3.48, and grave 96 Fig 3.62) and one unstratified example (Fig 3.66 no 21). All are decorated with a central bull's-eye motif, either alone or with a varying number of further bull's-eyes ringed around it. Three further examples are in the 19th century collections, none from a grave group. The two now in the British Museum form a matched pair. All three of these brooches are decorated only by a lightly notched rim.

Openwork disc brooches are often referred to as 'swastika brooches', this being the most common form of motif created by the openwork in the brooch. Leeds collected and published some basic data on the brooch-type (1945, 51–3) and supplementary information was collected by the author in the early 1980s. The major variation within this brooch-class is in the form of the arms of the cross left by the openwork. By far the most common cross type is a swastika with arms of three sections/two angles (see Fig 3.42), and these can be divided into clockwise and anticlockwise swastikas. Anticlockwise swastikas are twice as common as clockwise ones (here I take the direction of the outermost angle on the arm as definitive), with 28 recorded examples to thirteen. A regular cross, with rhomboidal arms formed by symmetrical T-shaped perforations, is rather less common, with just eight recorded examples. It can be difficult to draw the line between the regular cross and an indistinct swastika. There is also a small number of other types of openwork disc brooch, such as examples with curved arms. The figures given here include 19th century finds from Barrington A.

From the recent excavations, grave 19 produced a pair of brooches of the regular cross type, while two unstratified specimens have an anticlockwise swastika and may well form a pair. A further two specimens are known from the 19th century collections. One from a grave context is of the anticlockwise swastika type (BA8; Smith 1868, pl XXXIII.4). The other, an unassociated piece, is of the regular cross type. The relative frequency of the regular cross type here is therefore noteworthy. It is not, however, especially surprising, as of the remaining known examples four are from Woodston, Cambs (formerly Hunts), one from Fleam Dyke, Fen Ditton, Cambs, and two from Baginton, Warks.

5.2.1.5 Annular brooches (Graves 10, 39, 78, 83, and unstratified)

Annular brooches are found profusely in Anglo-Saxon grave groups, especially in the Anglian areas. Simple as this brooch-type is, the range and apparent freedom of variability in several regular details of its composition has defied any attempts at thorough subclassification. Brief general surveys have been published by Leeds (1945, 46–9) and Hines (1984, 260–9), and it has also proved possible to isolate and study some individual details profitably (Ager 1985; Palm and Pind 1992; cf Hines 1992, 89; see also below, 8.4). In general terms, the most significant variables to observe on an annular brooch appear to be the form of the ring – whether it is flat and thin, or thicker, usually rounded in cross-section; whole or jointed; its decoration; how the pin is attached and any slot or flange to receive the pointed end of the pin; and the material of both ring and pin.

Annular brooches have been identified in four of the recently excavated graves. That in grave 39 is only a small fragment. Grave 10 contained two annular brooches, grave 78 and grave 83 one each. The brooch in grave 83 has a shale ring. This unusual type may find parallels in other 'iron' brooches from Holywell Row, Suffolk, grave 61, Morning Thorpe, Norfolk, grave 303, and Sleaford, Lincs, grave 196 (Lethbridge 1931, 32; Green *et al* 1987, 119 and Fig 394). The brooches from grave 10, the fragment from grave 39, and a recently found unstratified piece, have a flat thin ring, in the case of grave 10 jointed where the pin is attached. The single brooch from grave 78 has a thicker, cast and moulded ring.

From the 19th century collections we know of only one annular brooch, a cast moulded specimen from grave BA5 (Smith 1868, pl XXXIII.5). This particularly low level of representation is likely to be due in part to these humble and simple artefacts having been ignored or discarded by the Victorian collectors.

5.2.1.6 Penannular brooches (Grave 20 and unstratified)

Despite the availability of a relatively large body of literature on the subject, the situation with respect to the classification and understanding of penannular brooches found in early Anglo-Saxon contexts is quite unsatisfactory. It is conventional to classify these brooches according to a scheme described in detail in two publications by Elizabeth Fowler (1960; 1963) which attaches primary importance to the form of the terminals of the incomplete ring of these brooches. The most immediate practical problem with this scheme is that it can be far from easy to classify individual brooches by it: see the comments on an unstratified 19th century find below. This is partly attributable to the fact that the scheme was not designed for the Anglo-Saxon finds but rather for a long series of brooch-types from the Iron Age, Roman Period and post-Roman Celtic West. This in turn has created an exaggerated view of the 'Celticity' of such brooches, and their intrusiveness in Anglo-Saxon contexts (eg Longley 1975; it is not clear exactly where White, 1988, 22–5, wishes to stand on this question). In fact the type most commonly found in Anglo-Saxon graves also occurs widely in late Roman-period continental Germanic contexts.

The latter is the type with rolled terminals, Fowler's Type C (White 1988, 9–15). To Fowler's list

of three examples of Type C brooches from continental Germanic contexts (1963, 150) we can add specimens from Bordesholm, Schleswig-Holstein, urn 2873 (Saggau 1981/85) and Fraugde, Odense *amt*, Fyn, grave 60 (National Museum, Copenhagen C8605). One brooch of this type was found in a grave context in the recent excavations (grave 20 Fig 3.43), and two further specimens are amongst the unstratified 19th century finds (MacGregor and Bolick 1993, nos 11.8–9).

Two recent unstratified finds have a slightly expanding, block-like terminal with a collar and constriction where this joins the ring (Fig 3.66 nos 3 and 39). The most similar examples to this are classified by Fowler (1963) as Type F, and, besides a considerable number of specimens from Ireland, she notes what she identifies as the pin of such a brooch from the Anglo-Saxon cemetery at Nassington, Northants, plus one specimen each from Frisia and Niedersachsen on the continent. A third unstratified 19th century find (MacGregor and Bolick 1993, no 11.5) is classified by Fowler as of Type E (1963, 149), a 'small zoomorphic brooch in which all the features of an animal's head, ears, eyes and snout, are recognisable' (Fowler 1960, 153). What can be seen on this brooch is a rhomboidal block – such as is definitive of Type G, but which can also be paralleled in Type F – and a pair of small knobs on the outer edge which can also be paralleled with brooches assigned to Type F. It seems most reasonable to regard this brooch as an intermediary form between the forms assigned to Types F and G, the latter again being quite well represented in Anglo-Saxon contexts (Dickinson 1982). Altogether it seems that Leeds's rough and ready classification of Anglo-Saxon penannular brooches into types with coiled terminals, types with splayed faceted terminals, and types with rounded knobs, is considerably more appropriate in the Anglo-Saxon context (Leeds 1945, 44–6).

5.2.1.7 Continental types of bow brooch (unstratified)

There are three fragments of bow brooches of essentially continental type from this site, all of them unstratified. Of these two are fragments of a radiate-head brooch, a headplate and foot respectively, the former a 19th century find and the latter a recent find. The headplate fragment has cross-hatching in low relief in the centre and five lantern-shaped knobs. Continental examples of the latter most often have inset glass or garnet, although examples with the incised bull's-eye motif of this specimen are common enough there. The foot has a plain central panel and chevron ornament in low relief in framing panels to the sides and at the terminal (Fig 3.66 no 17). Formally it is perfectly possible that these are fragments of a single brooch; indeed this footplate-type, with a small panel of relief ornament at the terminal, seems, from Hans Kühn's illustrated collection of these brooches (1965, Tafn 83–6), only to occur with the cross-hatched type of headplate. This brooch-type belongs to Kühn's Type 21, a type now dated on the continent to phases running from the late 5th century (Siegmund, and Roth and Theune's Phases 3) to about the middle of the 6th (Ament's phase AMII: Kühn 1965, 200–9; Ament 1976; Koch 1977, 48–9; Roth and Theune 1988; Siegmund 1989). The question of whether or not there may have been some local Anglo-Saxon close copying of radiate-head brooches is one that wants thorough investigation, but for the moment we have to conclude that these fragments probably represent a brooch or brooches imported from the continent.

Another unstratified 19th century find is the footplate and bow fragment of a bow brooch with an oval footplate (BM 76,2–12,72), another familiar continental type. It is not clear what shape of headplate this would have had. No exact parallels have yet been identified, but the linear decoration found on the footplate of this fragment is well paralleled by brooches from the middle Rhineland and southern Germany (Kühn 1965, 240–303, Tafn 94–101). In this case there is absolutely no reason to doubt that the brooch is an import that originated on the continent, probably in the Rhineland.

5.2.1.8 Garnet-inlaid disc brooch (Grave 37, Fig 3.48)

This type of brooch is classifiable by reference to Richard Avent's comprehensive scheme (1975). This allows not only the brooch as a whole to be assigned to a group but also the various compositional elements of its design to be classified. There is one specimen from this site, from grave 37. The two sets of quadruple glass or garnet settings around the central boss of this brooch direct us immediately to Avent's Classes 5 and 6, and it transpires that the design of the grave 37 brooch is particularly closely related to that of a Class 6.1 brooch from Faversham, Kent (Avent 1975, no 118). The brooches have identical rim and central boss-types, and highly similar keystone and small round garnet settings in the field around the boss. The major difference in design between them is that the Edix Hill brooch has lost the reduced zoomorphic interlace motifs in the ring field that are characteristic of the Kentish brooches.

It is consequently quite likely that the grave 37 brooch is a simplified local copy of a Kentish model best now represented for us by the Faversham brooch. There are a number of apparent copies of Kentish brooches concentrated in eastern England (Avent 1975, 64–5). Since the Kentish Class 6 garnet-inlaid disc brooches are quite helpfully datable around the late 6th and early 7th century, this has significant implications for the chronology of the Edix Hill cemetery which are discussed further in Chapter 7, below.

5.2.1.9 Bell brooch (19th century find)

'Bell brooch' is the term coined here for an unusual but not unparalleled brooch found in the 19th century (MacGregor and Bolick 1993, no 25.7). In form, the downward-biting profile animal heads at the sides of this brooch are clearly related to the decoration and layout common in the footplate upper borders of great square-headed brooches. Objects that are equivalent in shape and undoubtedly related though never especially similar in design to this piece are known from a number of sites. Some of these were used as brooches, others as pendants. Most clearly also used as brooches are a pair from Lechlade, Glos, grave 136. Apparently used as pendants were examples from Clayhithe (near Waterbeach), Cambs (University Museum, Cambridge 1980.382), Baginton, Warks (Herbert Museum, Coventry A/1013/67), an unknown site in Suffolk, and a plain piece from Brighthampton, Oxon (MacGregor and Bolick 1993, nos 25.6 and 25.8). Of unknown function is a metal-detector find from Fulmodeston, Norfolk, reported to and photographed at the Castle Museum, Norwich, in 1994. Although definitely fitted as a brooch, the Barrington A specimen has a cast knob at the top apparently designed for perforation to form a pendant.

5.2.1.10 Unidentified brooch (unstratified)

One recently found unstratified copper-alloy brooch is too fragmentary and misshapen to be identified. It appears highly probable that it is the remains of a bow brooch, perhaps a small long or a relatively small cruciform brooch. It might, however, have been a Roman brooch. The principal reason for drawing attention to this fragment and the difficulty of its identification in a separate section here is that it appears to be deformed because it has been burnt, like an uncertainly identified fragment of a florid cruciform brooch (see above, 5.2.1.1). Together with a fragment of a buckle (below, 5.2.4.1), these are the only evidence we yet have for possible Anglo-Saxon cremation on this site.

5.2.2 Pins (Graves 38, 53, 60, 62, 66, 94, and 105)

A detailed and extensive scheme for classifying and comparing Anglo-Saxon pins now exists (Ross 1991) but, as the material to be discussed here shows, it can still be difficult to identify all the pins in a site collection, let alone to classify them comprehensively. Pins – or items like pins – often survive in a fragmentary state. Seamus Ross (1991, 15–17) suggests that iron pins were probably more common than we can now attest, and this is borne out by the recently excavated grave groups. The most credible specimen of an iron pin here is the 50mm long shaft associated with grave 62 – though this would also be unusual as a pin in what appears to be a male grave assemblage, along with a spearhead and a knife (see below, 5.4.3). The excavation notebook, in fact, records that the pin was found in the upper fill of the grave and suggests it is 'probably not associated' with the grave group. Even more dubious candidates are the fragments of iron rod, possibly pin shafts, from graves 38 and 53. The former is round in cross-section and the latter square, which may render the former a more likely pin fragment and the latter a nail (see below, 5.7.4), but we lack the comparative material to test this adequately.

Ross concentrated his study on metal pins, which are predominantly copper-alloy, and subclassified them largely on the basis of the form of the pin-head, though also taking account of size. It must be noted that, though using a very large database, Ross did not attempt to provide an exhaustive corpus of Anglo-Saxon pins. In respect of the early Anglo-Saxon period his material appears to derive predominantly from southern England, including Cambridgeshire and the southern Midlands.

The recent excavations produced three copper-alloy pins in grave contexts, one in each grave. The specimens from grave 60 and grave 66 have a flat, round head, in the former case with a short shaft slightly thickened in the centre. These are examples of Ross's Kingston disc-head type (Ross 1991, 224–31), a widespread type firmly associated with grave contexts datable mostly to the 7th century. The shaft of the pin from grave 66 is incomplete and its full length therefore unknown. The Kingston disc-head type is well represented on the settlement site of West Stow, Suffolk (ie West's 'cheese-headed type': 1985, 123). The third specimen is an unclassifiable shaft fragment from grave 105.

There are records of four unstratified pins in the 19th century collections, but details of only three can be retrieved. One is of Ross's multiple-knob-head type, datable to the 6th century (MacGregor and Bolick 1993, no 31.3; Ross 1991, 165–7). Another can be attributed to the pierced disc-head type, with parallels at the nearby site of Melbourn and dated largely to the 7th century, in some cases to the late 6th (MacGregor and Bolick 1993, no 31.13; Ross 1991, 231–6). The third extant specimen is only a shaft fragment with a collar for the head (MacGregor and Bolick 1993, no 31.7) and is unclassifiable.

There is also one bone pin from an excavated grave. This specimen, from grave 94, is of considerable interest for having a turned, moulded head with three raised and quite prominent ribs. As a type of collar, similar moulding in a much more restrained form is familiar on copper-alloy pins (Ross 1991, 90–4). Perhaps the difference in scale is simply a function of the material. There is, however, a very tempting comparison to be drawn with late Roman bone pins (Crummy 1979; 1983, 23–5; Greep 1983, 313–69, esp. Type B2II; Greep 1995: 1113–21). Taking a general view, Ross concluded that there was virtually no continuity in respect of pin-making from Roman Britain to Anglo-Saxon England (1991,

Table 5.1a Summary of monochrome glass bead forms

Form	No	%
A2 Annular	43	45
A1 Disc	21	22
G1/G2 Cylinder	12	13
B2 Coiled globular	3	3
K1 Long square section	3	3
D1 Barrel	2	2
F1 Sub-melon	2	2
K2 Long pentagonal section	2	2
A3 Double annular	1	1
C1 Biconical	1	1
E1 Irregular coiled	1	1
L1 Drawn cylinder	1	1
?	3	3
Total	95	

Table 5.1b Summary of polychrome glass bead forms

Form	No	%
A1 Disc	62	78
A2 Annular	6	8
C1 Bicone	4	3
D1 Barrel	1	1
F3 Ribbed	1	1
G1 Cylinder	5	6
K1 Long square section	1	1
? type	1	1
Total	80	

34). We do not yet have the full comparative material from which to draw firm conclusions, but for future research it is worth posing the question of whether or not we have an exception to that situation here. We may, however, note a close parallel to the grave 94 bone pin in a pin from Girton College, Cambs, grave 41, which also had a looped head.

5.2.3 Bead strings and chatelaines

Bead strings and chatelaines are placed together here as alternative forms of primarily decorative festoons, which seem to be readily adaptable for symbolic and amuletic purposes, and occasionally to be put to more practical use for the suspension of utilitarian items too (see below, 5.3.4). A more detailed discussion of chatelaines is provided below by Audrey Meaney (see 6.10).

Necklaces or festoons composed of beads, pendants, and, occasionally, wire rings, are a predictably common feature amongst the dress accessories from this cemetery. At least 65% of the women's graves contained some such artefacts, usually in the form of beads. More than a thousand beads were recovered from the grave groups in the recent excavations. A high proportion of these, nearly 80%, are amber. The majority of the remainder are translucent or opaque glass beads, with a small number of bone, shell, and mineral beads too. A survey of beads of various materials in Anglo-Saxon graves, and of their likely amuletic significance, is provided by Audrey Meaney (1981, 66–82 and 96–8).

As beads are so small, it is impossible to assign every single bead to a specific grave context, especially in the case of multiple or disturbed burials. Nevertheless the great majority of beads do have secure contexts, and indeed the form and attachment of these 'necklaces' can often be reconstructed. Thus certain reliable general observations can be made. The majority of bead assemblages (nineteen) contain both glass and amber beads; there are, however, at least four sets with only glass beads, against ten sets of amber beads with no glass beads. This agrees with the 19th century records of the Barrington A grave groups (Babington 1860; Smith 1868), where there were at least four grave groups with glass and amber beads (BA1, BA2, BA11, and BA15), two with amber alone (BA0 and BA6) and two uncertain assemblages (BA5 and BA8). Beads of other materials are discussed briefly below.

5.2.3.1 Glass beads
(Incorporating a report by Sue Hirst; the full analysis can be found in Appendix II, see also 6.7)

The total number of glass beads recorded by Sue Hirst is 201, constituting 20% of the whole bead collection. These beads have been classified and assessed in terms of a scheme of analysis devised in connection with the much larger collection of glass beads from the Mucking cemeteries (Hirst and Clark forthcoming), taking account of the shape of the beads, their construction (ie monochrome, polychrome or 'gold-in-glass'), and their colour or colours (Fig 5.2).

The 'gold-in-glass' beads (see below) have their own distinctive, segmented shape. The range and frequency of shapes of the monochrome and polychrome glass beads are summarised in Table 5.1a–b, showing a high preponderance of the disc and annular forms – albeit in very different proportions between the two structural categories. This is because the disc form is simply better suited to carry and display polychrome decoration.

There are five basic colours found amongst the monochrome beads and the same range recurs as the colour of the body of the bead in the polychrome set – blue, red, yellow, green, and white. There were also two colourless glass beads from grave 106. Only one monochrome opaque white bead has been recorded, in grave 78; all of the other colours are represented in several different graves. A finer division of the colours into shades of dark and pale, and grades of

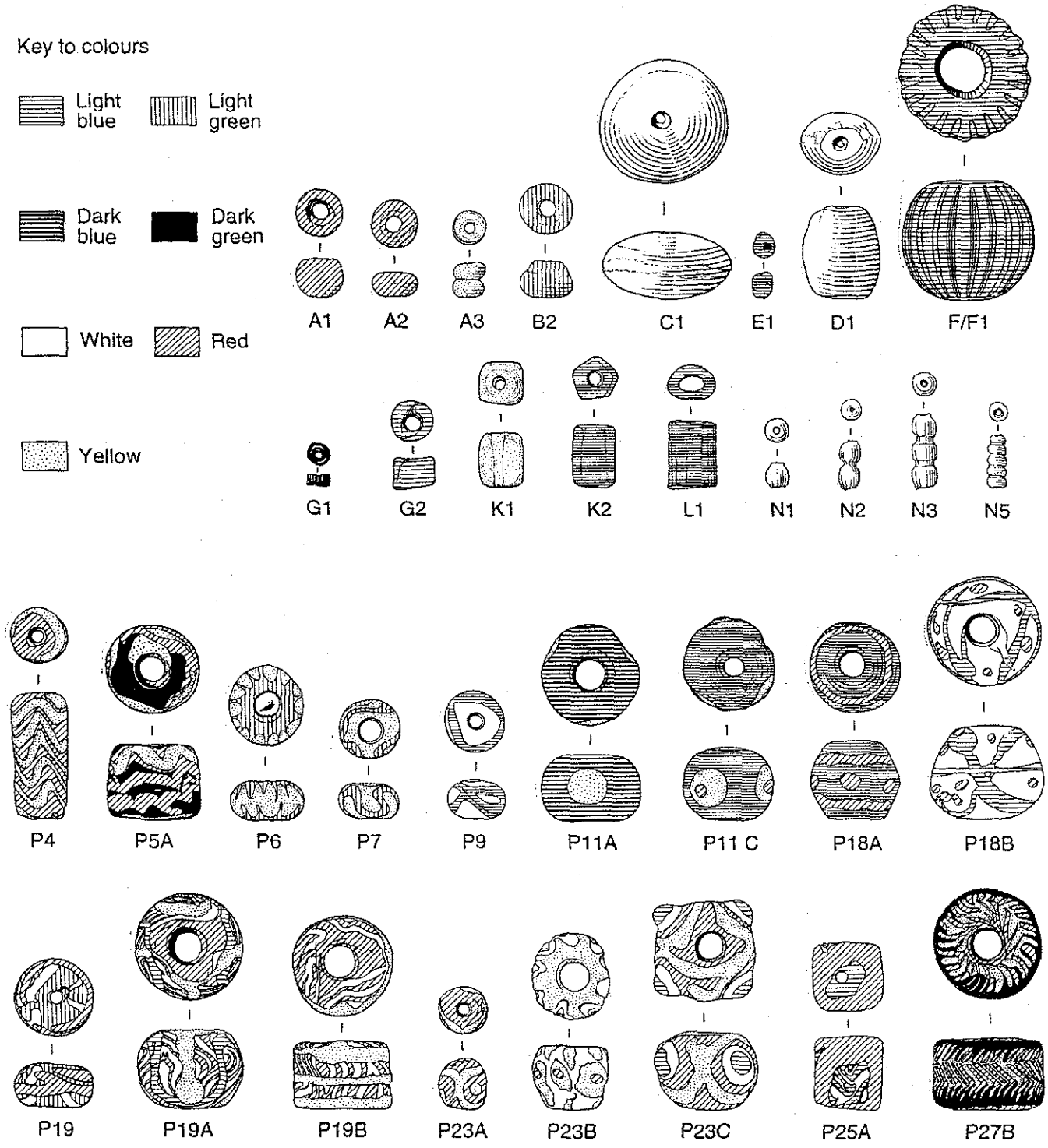


Figure 5.2 Range of non-amber bead forms: all beads shown are glass except C1 and D1 – crystal and G1 – jet; (Scale 1:1) (J Richards) (Full descriptions can be found in Appendix II)

opaque and translucent, can be undertaken, while certain beads are also attributed to a transitional green-blue colour. The results are summarised in Table 5.2. For a summary of the results of laboratory analysis of the colorants of glass beads see section 6.7 (below).

Also monochrome are the 'gold-in-glass' beads made of thin, practically colourless glass in layers enclosing gold or silver foil. The type is familiar from both late Roman Britain and early Anglo-Saxon England. A total of 25 or 26 beads of this type have been identified from three of the recently excavated graves (19, 95, and 106); it is difficult to make a precise count because of the fragility of the items and the impossibility of knowing how many original beads loose segments may represent. Laboratory

Table 5.2 Summary of monochrome bead colours

Colour	No	%
7.7/7.8 blue/dk blue	32	34
2.1 opaque red	13	14
5.1 opaque yellow	11	12
6.2/6.2a pale/v pale green	9	9
7.5a pale blue	8	8
7.4 green blue	5	5
5.2 yellow	4	4
6.1 semi-opaque green	4	4
7.2 semi-opaque green blue	2	2
7.6 opaque pale blue	2	2
9.1 colourless	2	2
6.5 pale blue green	1	1
7.1 pale green blue	1	1
8.1 opaque white	1	1
Total	95	

Table 5.3 Summary of polychrome glass bead colours

Colour	No	%
2.1 opaque red	37	46
5.1 opaque yellow	23	29
8.1 opaque white	8	10
7.7 blue	4	5
5.3 green yellow	2	3
6.2 pale green	2	3
6.3 dark green	2	3
7.5a pale blue	2	3
Total	80	

examination by Catherine Mortimer (see 6.7, below) has succeeded in confirming the presence of silver foil only in the case of one bead from grave 106.

The ratio of polychrome to monochrome glass beads amongst the recently excavated graves (nearly 46%) is noted by Hirst (archive report) as being high. Although represented in thirteen different grave groups altogether, 57.5% of the polychrome beads are from a single context, grave 5. The base colours of the bodies of the polychrome beads are summarised in Table 5.3. Striking, in comparison with the colour range of monochrome beads, is the elevation of red to the most frequent colour (47%), the relatively high proportion of white and yellow beads (39–42% together), and the paucity of polychrome beads with a blue body. The range of designs of the polychrome beads is summarised in Table 5.4. This is dominated by waves, spots and stripes, and particularly by Type P9, with crossing waves. The special frequency of this type is due primarily to the large number of beads of this type (32) in grave 5, although there were also six in grave 83. Grave 5 is also responsible for the prominence of the type with a single wave, P7. There are four examples of type P23 in grave 5; otherwise

Table 5.4 Summary of polychrome glass bead types

Type	No	%
P9 Crossing waves	43	54
P23a/b Waves and spots	11	14
P7 Wave	10	13
P18 Stripe & waves/spots	3	4
P19 Spiral & waves or stripes	3	4
P11 Spots or eyes	2	3
P27b Herringbone	2	3
P4 Drawn spiral	1	1
P5 Drawn double spiral	1	1
P6 Zigzag	1	1
P25a Waves & warts	1	1
P?	2	3
Total	80	

polychrome bead-types occur only in ones or twos in individual contexts.

Beads were treated casually in the 19th century excavations, and while there are records of glass beads from at least four of the graves published by Smith (1868; see above), only for one bead do we have any idea of its appearance: a 'white glass' bead from grave BA15. There were at least four glass beads in grave BA1, three in grave BA2 and some amongst the 'several' beads in grave BA11. The 19th century collections, however, do contain quite a large number of glass beads (161). Of these, a much higher proportion than amongst the recently excavated graves is monochrome (over 80%), but this figure is heavily influenced by a single collection of 98 plain blue annular beads in the Ashmolean Museum. The majority of the polychrome beads, unfortunately, can only be identified as such in the Ashmolean catalogue and could not be examined for details of design and colour. The British Museum collection includes three 'gold-in-glass' beads.

5.2.3.2 Amber beads (Fig 5.3)

Amber beads are extremely plentiful in Anglo-Saxon cemeteries, especially in the Anglian area in the 6th century. Sheer familiarity seems to have led to these beads' archaeological importance being overlooked or neglected. Their distribution must reflect trading or distributional systems within 6th century England, though it is not certain that we shall ever be able to reveal much in the way of the details of this system. It seems that all of the amber concerned is Baltic amber, which can be collected on the east coast of England although it is doubtful that such local provision alone could have supported the huge and sudden consumption of amber seen in Anglo-Saxon graves (Huggett 1988, esp. 64–6; Hines 1994, 15–16).

Any attempt to probe this phenomenon further self-evidently requires detailed quantitative data. Since amber beads vary considerably in size – with

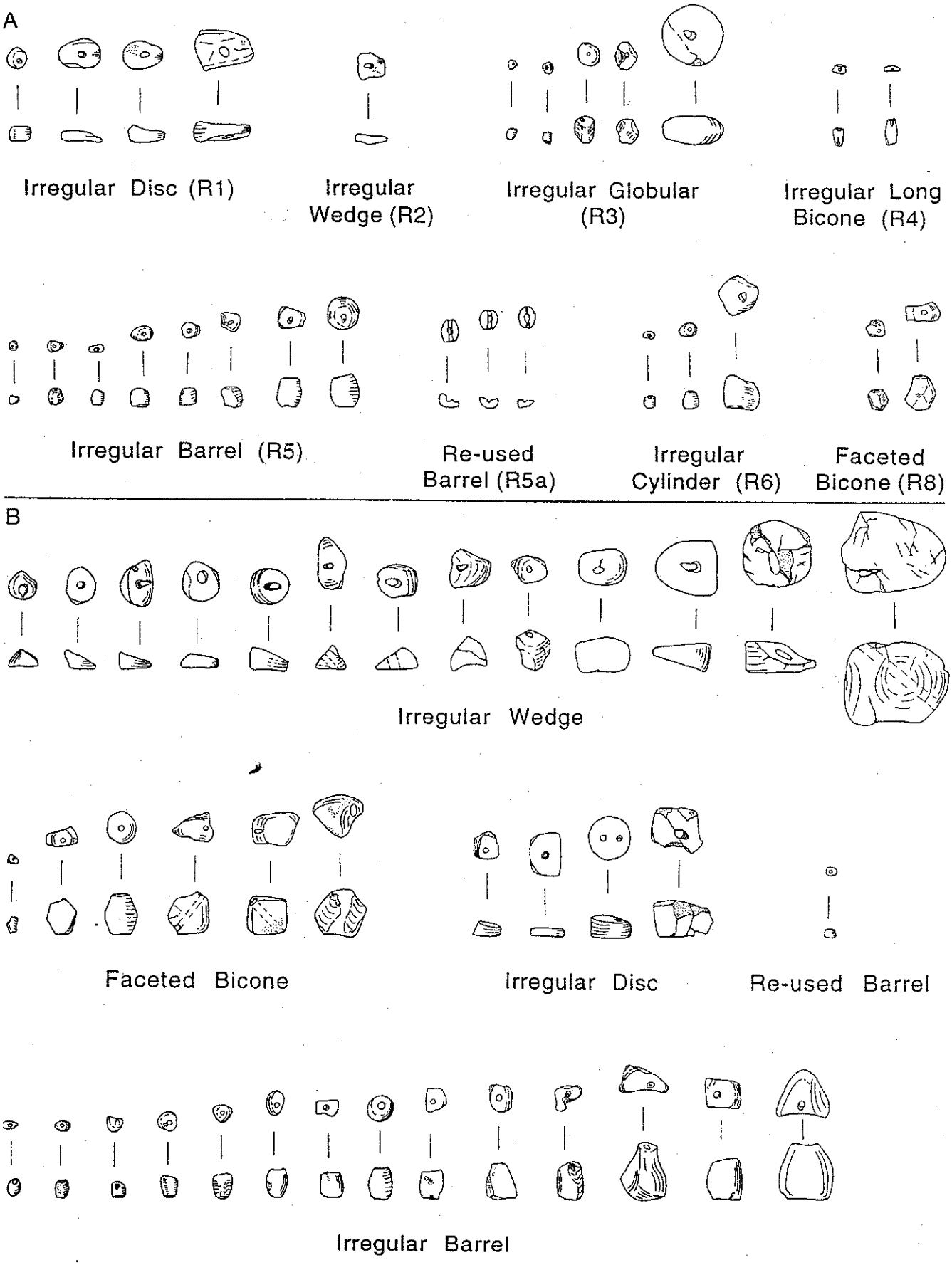
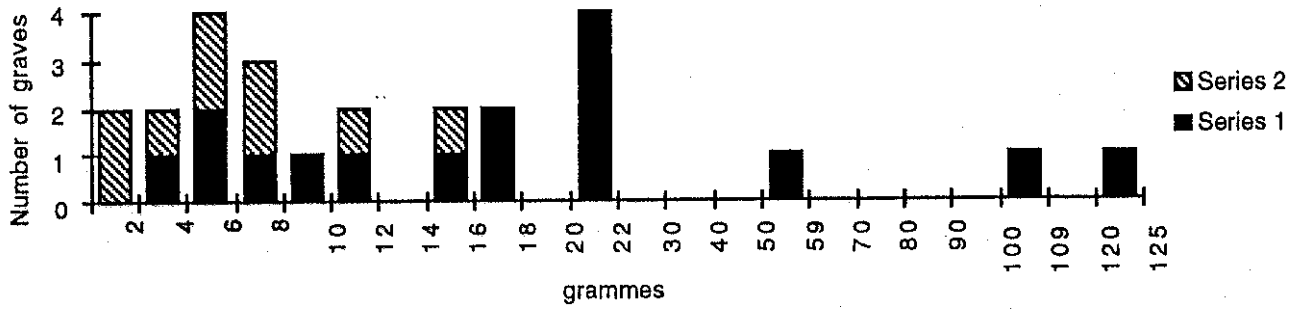


Figure 5.3 Amber bead size and type range (Scale 1:1) (Full descriptions can be found in Appendix II)



Series 1: Amber beads found in graves with glass beads
Series 2: Amber beads found in graves without glass beads

Figure 5.4 Sets of amber beads: distribution by weight

the usual range running from about 0.1g to 3.0g, although there is one outlandish specimen of some 23g from Edix Hill (grave 79) – it is evident that weight should be afforded at least as much importance as the number of beads. There are, however, major practical problems in collecting such data (Arnold 1980, 96–9). Even with the new Edix Hill finds, with a large number of small and often fragile items, it was only practical to weigh the amber in bags and then to calculate the net weight of amber present. The results are presented in the catalogue as approximate weights to the nearest gramme. This is not a high-precision method, but, having run some checks, we are confident that the margin of error is small, and that the relative weights per grave are accurate.

The results are certainly interesting. Plotted at two-gramme intervals (Fig 5.4), the weights seem to form a neat, and reasonably normal distribution in the range up to 10–12g: a considerably more regular pattern than can be obtained by any groupings of the numbers of beads per grave. There is another distinct cluster (four sets of beads) at 21–22g, with a number of sets roughly half-way between, in the 15–18g range. There are three larger sets, one at 59g (nearly 12 × 5), one at 109g (nearly 12 × 9), and one at 125g (nearly 12 × 12). Finally let us note the one large block of amber made into a bead from grave 79 which weighs about 23g.

This is without question too small a survey on which to base even the most tentative of conclusions. The pattern within these data is nevertheless striking enough to pose the question of whether there might have been some reason why amber should circulate in quantities of approximately 10–12g, or 21–24g. The data are presented here as a point of reference for further studies.

It should also be noted that the presence of other types of bead has no clear effect on the volume of amber in a bead set. The range of weights of amber in bead sets without glass beads is in fact a little low compared with those associated with glass beads (see Fig 5.4). A simple inference is that either higher quantities of amber or the presence of glass beads are broadly correlated as indices of the relative richness of the necklace. However the one female grave recorded in some detail by Babington (1860) is reported to have contained about 100 beads, all of them amber. A further 166 amber beads are included amongst the 19th century collections.

5.2.3.3 Other beads

There is a small selection of other beads made of shell, bone, and various minerals. Cristobalite, calcite (chalk), crystal, and a hard black mineral, probably jet, are represented in the recently excavated grave finds. Such beads are only found in ones or twos, and are predominantly found with mixed sets of glass and amber beads (ie graves 5, 13, 15, 19, 84, 95, and 106; cf grave 68, the largest collection of amber beads without glass beads, but with two crystal beads, and grave 23, a poorly preserved burial in which only a single 'jet' bead was found). The 19th century collections include a few examples of crystal and 'chalk' beads, together with single specimens identified as shale, steatite, and simply stone.

5.2.3.4 The composition of bead strings

The composition of bead strings in individual graves in terms of the colour, type, and material of the beads was examined by correspondence analysis. It is recognised that there is occasionally reason to question whether all the beads from an individual grave were part of the dress jewellery – a few from grave 79, for instance, may have been in a bag collection – but for the purposes of this analysis all of the beads from one grave have been treated as a single collection. The results showed a clear patterning. As already noted, some graves can be separated off for containing amber beads alone. There is also a clear division of the graves with glass beads between those

predominantly containing glass beads with red or yellow body coloration and those with basically blue or green glass beads. Amber beads are frequently associated with both these groups but the numbers of amber beads associated with the red/yellow group are relatively low (see particularly graves 5, 14, 15, 61, 83, and 108). Larger quantities of amber are found with blue and green glass beads (eg graves 66, 78, and 84) and the grave groups with gold-in-glass beads can be treated as a subgroup of the blue/green group (see graves 19, 29, and 106). The only collection of beads that does not fit this scheme particularly well is that of grave 79, with 145 amber beads and twelve glass beads, a mixture of monochrome and polychrome, red, blue, yellow, and green beads. In the case of two polychrome beads in this grave, Sue Hirst (archive report) was unable to determine whether the base colour was yellow or green.

5.2.3.5 Wire necklace rings (Graves 3, 13, 18, 60, 66, 91, and 95)

The placement of wire rings in or by the necklace is a persistent feature of Anglo-Saxon dress jewellery though not an especially common one. It is widely recognised that the use of silver necklace rings is a characteristic feature of the style of costume represented in the 'Final Phase' cemeteries, primarily of the 7th century; only limited attention, however, has been paid to the copper-alloy rings which are undoubtedly used in this way at an earlier date (Hyslop 1963; Meaney 1981, 170–8).

Of the recently excavated grave groups five contained copper-alloy slip-knot rings with the necklace. One had a single copper-alloy ring alongside a number of silver rings (grave 91). The wire slip-knot ring is a simple attachment device that need not be found with the necklace, as for instance in Holywell Row grave 50, where such a ring with toilet equipment was found at the right hip, having presumably been attached to the belt (Lethbridge 1931, 28–9). Nonetheless, the frequency with which these rings seem to be associated with the necklace in cemeteries neighbouring Edix Hill is distinctly high. There were four rings in grave 3 clearly forming part of the necklace (Fig 3.31). There were likewise seven copper-alloy slip-knot necklace rings in grave 13; three of these had attached decorative copper-alloy plates ('spangles') and one the shaft of some broken item looped around it. A large copper-alloy slip-knot ring (see Bracelets, 5.2.5.2, below) and two looped spangles were found in grave 95. The attached shaft in grave 13 is likely to be from an item of toilet equipment. Clear evidence for the inclusion of these in the necklace area is found in the report of Barrington B grave 85, and probably also Barrington B graves 40 and 80, as well as Holywell Row grave 70 (Foster 1883; Lethbridge 1931). Edix Hill grave 66 contained a single ring in the necklace area alongside one of the small long brooches.

A set of toilet implements on a copper-alloy ring was found in BA5 in the 19th century (Smith 1868, pl XXXIV.3) but its position in the grave is not recorded. There is one further unstratified copper-alloy slip-knot ring in these collections (see below, 5.2.5.3).

Silver necklace rings occur in three of the recently excavated grave groups, graves 18, 60, and 91. The specimen from grave 60, found close to the neck, has a spiral knot or bezel that can be paralleled with necklace rings from Burwell, Cambs, grave 121, and Chamberlain's Barn II, Leighton Buzzard, Beds, grave 39 (Lethbridge 1931, fig 36.3; Meaney 1981, fig V.p). The inner diameter of the ring (17mm) suggests that it could have been made as a finger ring (cf MacGregor and Bolick 1993, nos 27.18–19) but a general study of finger rings by Genevieve Fisher indicates that spiral-knot rings are very much more frequently found as necklace rings than finger rings (Fisher 1979, 5–9). The other examples are fragmentary, but the pieces in grave 18 seem to represent two rings, with no form of knot visible. Slip-knots are found on the ring fragments from grave 91 which, from the grave plan, are reconstructable as nine rings in the necklace. Two of these may have had a drop pendant and a composite scutiform (shield-shaped) pendant attached respectively, although the pendants could have been suspended from the necklace string (see Fig 3.60). No such rings are found in the 19th century collections.

5.2.3.6 Pendants (Graves 13, 19, 91, 95, 96, and unstratified)

The range of pendants associated with the necklaces is quite heterogeneous. The occurrence of spangles with copper-alloy slip-knot rings in two graves has been noted above. Two grave groups also contained a small number of copper-alloy 'bead tubes' (graves 19 and 96): rolled sheet-metal tubes, with a perforation, presumably for suspension, at one end. A fragmentary item in grave 19 might have been a 'bucket pendant' (Meaney 1981, 166–8) but its identification cannot be certain.

A more substantial and important type is the scutiform pendant, a class which has been the subject of a thorough study (Hines 1984, 221–35). Amongst various details that can be observed, the most important division within this artefact-type is between simple and composite scutiform pendants, a difference that is chronologically significant. Three specimens of the simple type derive from the recent excavations: one from a grave group (grave 96) in copper alloy, and two unstratified, one copper-alloy and one silver. All of these have the domed central boss typical of the Anglo-Saxon series.

Of considerable importance are the gold and glass compound scutiform pendant and the crystal drop pendant in gold bands from grave 91. Both types – along with the silver wire necklace rings (above) – are characteristic of the late costume phase of Anglo-Saxon furnished cemeteries (see Chapter 7, below). The gold contents of these artefacts have

been analysed by Catherine Mortimer (below, 6.5.2) who found the wire on the compound scutiform pendant to be mostly around 84–89% pure, except for two wires which have 73.8% and 76.8% gold respectively. The readings from the drop pendant are lower, closer to 70%. These figures can be used to estimate the date of the items more closely, and are discussed in Chapter 7. Mortimer also notes that the scutiform pendant appears to have cross-hatched gold foil beneath the central glass setting. Although this technique is strongly associated with Kent, where garnet-inlaid jewellery flourished early in the Anglo-Saxon context, there is no reason, by the 7th century, to regard this as conclusive evidence of Kentish manufacture.

The final type of pendant to note is the familiar use of 'found' Roman coins as pendants, perforated for suspension. One example is from the top fill of grave 19 but is not certainly attributable to a specific burial. There is also one unstratified example from the recent collections and two from the 19th century collections. These should be viewed in the context of nine unstratified Roman coins from the site (three recently collected, six from the 19th century) and four from recently excavated contexts, that had not been perforated for suspension (see below, 5.7.2).

5.2.3.7 Chatelaines (Graves 20, 60, 91, and 109) (see also below, 6.10)

Chatelaines are ornamental chains that were a regular though not a common feature of early Anglo-Saxon female dress. There is one well-preserved specimen from grave 109 (Fig 3.64): a long iron chain made of twisted figure-of-eight loops that was found extended down the left-hand side of the body, and which had a loop-headed pin suspended from a ring attached to it. Similar chain links from graves 20, 60, and 91 can tentatively be identified as fragments of three further possible chatelaines. There are no such finds in the 19th century collections.

5.2.4 Belt fittings

5.2.4.1 Buckles (see Table 5.5)

Buckles are frequent finds in the graves of this cemetery. Nearly half of the identifiable adult graves from the recent excavations, both male and female, produced buckles, and they were also present in some children's graves. A majority of the buckles had iron loops, which are, of course, vulnerable to corrosion, so that the identification of fragments, or the determination of the size and shape of buckles, cannot always be certain. The material is nevertheless rich enough to support a number of significant observations, especially with the benefit of careful laboratory examination of the ironwork and radiography of every item.

That the buckles were usually fasteners for a belt or girdle is shown by the fact that they are often found *in situ* at the waist or shoulders. A number of graves – again both male and female – contained more than one buckle. It is virtually impossible to tell if these graves originally contained more than one belt or some other item with a buckled carrying strap (see below, 6.10). Many of the iron buckles, however, have

Table 5.5 Classification of buckles from Edix Hill graves

		Grave	Skeleton No	Small Find No
1	Iron, oval			
		2	3A	1
		7	11	3
		9	13A	6
		9	13B	7
		12	19	7
		19	44A	31
		34	117	9
		36	125	7
		46	146	2
		62	188	5
		63	198	2
		66	322	10
		79	428	13
		79	428	143
		83	436	2
		84	440	14
		88	453	11
		98	553	2
		106	626A	154
		111	688	2
	[Possibly also	29	58B	17]
2	Iron, D-shaped			
		2	3C	3
		3	4	18
		13	20B	44
		36	125	4
		82	432	2
		107	632	2
		150	727	2
3	Copper-alloy, small oval			
		27	52	1
		54	161	4
		77	423	11
		109	683B	12
4	Copper-alloy, oval			
		95	530	54
5	Copper-alloy, D-shaped			
		9	13B	1
		23	48	3
		53	156	2
		78	424	4

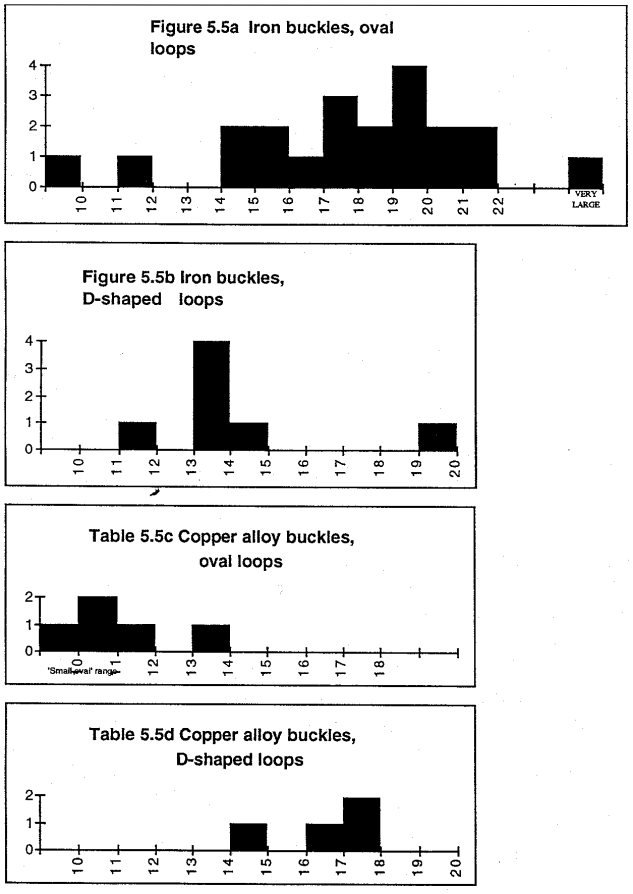


Figure 5.5 Bar graphs showing the size-ranges of the different buckle types. Vertical axis = number of buckles, horizontal axis = width in mm.

traces of a mineral-preserved leather belt, as well as textile impressions on the front and/or the back, and two were mounted on antler (see 6.3.8).

A small number of distinctive types of buckle can be identified. There are two examples of buckles with substantial iron loops carrying thin, inlaid silver ribbons, both from the recent excavations: one from grave 13 and one unstratified (Fig 3.65 no 5). The former has a D-shaped loop. The latter has a kidney-shaped loop and appears to have been burnt. Such buckles, the latter type in particular, are strongly associated with the 5th century (Evison 1955; Evison 1965, esp 18–20), although there is no very clearly defined *terminus ad quem* for them. The inlay technique flourishes again, on buckles with oval loops, around the beginning of the 7th century, and Zeller's recent study of material from northern Rheinhessen seems to hold open the possibility of some minor continuity of the technique through Böhner's Stufe III in the 6th century (1992, 186–9). Böhner (1958, 179) places copper-alloy kidney-shaped buckles, his Type A1, into Stufe II (*ad c* 525), perhaps overrunning into the following phase. The silver-inlaid iron kidney-shaped buckle is of considerable importance as the most likely example there is of a 5th century artefact on the site, and for this reason the problems inherent in its dating must be stressed.

Grave 39 contained a tinned copper-alloy buckle of a familiar shield-on-tongue type (Fig 3.48), Böhner's Type A6, another type richly represented in the Rhineland and firmly dated there (Böhner 1958, 181–3). These are dated predominantly to Böhner's Stufe III, generally earlier rather than later in that phase with some specimens falling on the threshold between Stufen II and III. Siegmund (1989) assigns this buckle-type primarily to his Phase 4, *c* 530–555.

An unusual type – tentatively identified as a buckle – is an iron loop of crescent shape decorated with applied silver foil in grave 28. This was recently found by metal-detector (Fig 3.44, 1988.231).

The loops of the large number of remaining buckles were assessed as a set in terms of their material (copper alloy or iron), the shape of the loop (D-shaped or oval), and the internal width of the loop: ie the maximum interior dimension across the loop at right angles to the tongue, which will also be the maximum width of the strap that could be fastened. The distinction between D-shaped buckles and oval buckles is occasionally a hard one to draw and it should be noted that all copper-alloy buckles have been counted here as D-shaped when they have a distinct, straight bar on which the tongue is hinged, even though the rest of the loop is oval (ie graves 23 and 53). The suggested classification of the buckles from the recently excavated graves, is tabulated in Table 5.5.

This classification produces a set of remarkably distinct groups of buckles. Oval iron buckle loops – the most common type – are predominantly 15–22mm wide (Fig 5.5); six of the seven D-shaped iron buckle loops are between 12mm and 15mm wide (Fig 5.5). Oval copper-alloy buckle loops are usually small, mostly 10–12mm wide, with just one larger example at 14mm; the widths of the D-shaped copper-alloy loops range from 15–18mm. Unfortunately it is impossible to compare these data properly with other cemeteries as even recent publications (eg Evison 1994) do not provide all the necessary radiographic evidence. There is, all the same, a clear enough pattern here for wider investigation in future research.

Grave 60 contained two copper-alloy fasteners with round loops and a tongue/pin that were found on either thigh of the skeleton. These are classified as buckles here, although both formally and functionally they are enigmatic.

The buckle plates, where preserved, are usually simple constructions of sheet copper alloy or iron. A finer cast type is found in grave 78, while some sheet copper-alloy examples have simple incised or punched decoration, and rivets which can be large and silver plated (grave 36), or small and fine (graves 27 and 109).

It is likely that buckles were overlooked by the 19th century collectors and are consequently underrepresented in the old Barrington A collections. In fact, three of the 25 recently excavated graves for which 19th century disturbance and grave-robbing is suspected yielded buckles. Only one 19th century find, with a D-shaped loop, is illustrated (Smith

1868, pl XXXVI.8); the material of this buckle is not given, but a very similar looking piece – possibly the same item – is in the University Museum, Cambridge, accessioned as D.1961.8A. There are otherwise only vague and careless records of (possible) buckles in BA13, BA17, and BA25. The small remaining number of unstratified buckles can all be assigned amongst the material and shape types described above.

5.2.4.2 Strap-ends (Graves 13, 19, and 29)

Items identifiable as copper-alloy strap-ends are rather few: they occur in three of the recently excavated grave groups (graves 13, 19, and 29), in multiple quantities (two and four respectively) in the former two assemblages, despite the fact that grave 13 produced a single identified buckle and grave 19 only two. The finds also include, however, a large number of essentially similar 'strap mounts' which it is most appropriate to consider together with all of the complex assemblages that make up the 'girdle groups' (see below, 5.3.2 and 6.10). There is just one, unstratified, strap-end in the 19th century collections.

5.2.4.3 Shoe-shaped rivets (Grave 39)

As is typical, a pair of these was found with the shield-on-tongue buckle in grave 39. There is a further specimen, found in the 19th century (MacGregor and Bolick 1993, no 36.24).

5.2.4.4 Belt rings (Graves 3, 8, 19, 20, 38, 50, 51, 54, 60, 66, 68, 69, 78, 79, 80, 83, and 96)

Plain iron or copper-alloy rings of varying sizes are often found around the belt area. Their function is rarely clear, and may well have been various (see below, 6.10). Some examples could be buckles that have lost their tongues, although the majority of the examples identified here were found alongside and in addition to identifiable buckles. It seems likely that these rings served most often as suspension rings (as with the keys and latch lifter complex in grave 83; Fig 3.58), although, especially where up to six or seven rings are found in a single complex (graves 19, 60, and 83), some decorative and symbolic function may be surmised too. No clear guidance is given by observed traces of mineral-preserved textile on a couple of iron belt rings.

Iron belt rings feature in at least seventeen of the recently excavated graves, predominantly in female burials. There are no unstratified examples, and none at all from the 19th century collections; it is likely that these humble objects were simply overlooked at the time. One, in fact, was recently found in a grave believed to have been robbed in the 19th century, grave 80. Most graves contain only one, occasionally two, rings, although there are up to seven in the three graves noted immediately above. The size of the rings varies considerably, from just 15mm to 60mm in diameter. There is no observable correlation between the size of rings, the number in a single assemblage, and their position. The iron rings in grave 60 include at least one specimen (Fig 3.51 no 5) with two bundles of wound wire that may have been of adjustable diameter like a slip-knot ring. Comparison with finds reported from graves 42 and 121 at Burwell, Cambs (Lethbridge 1931) suggests that these rings may have formed part of the chatelaine in this complex (see above, 5.2.3.7).

Copper-alloy rings can appear in the same positions, and be of the same sizes, as the iron ones (graves 20 and 79). The copper-alloy ring found by the right shoulder in the man's grave, grave 51, probably had some distinct function but we can only guess at what it was. Copper-alloy rings were found in only four of the recently excavated graves (the fourth example is attributed to grave 106). There are none in the grave groups recorded in the 19th century, nor any amongst the recent unstratified finds, but several amongst the older unstratified finds (see catalogue). One of these (MacGregor and Bolick 1993, no 54.7) has the suspension loop of an iron shaft still attached to it.

5.2.5 Wrist-clasps, bracelets, and finger rings

5.2.5.1 Wrist-clasps (Graves 3, 10, 13, 19A and B, 66, 68, 69, 74, 93, and 106)

Wrist-clasps are a common item of female costume, peculiar to the Anglian area in early Anglo-Saxon England. The clasps can be classified according to a scheme devised by Hines (1984, 35–109; 1993) which identifies three classes according to the distinctive elements of which the clasps are constructed; these can be further subdivided into particular forms. The finds from this site are quite numerous but contain nothing especially unexpected.

Wrist-clasps were found with ten of the recently excavated burials. There is one pair of Class A clasps in silver wire (grave 68). The remaining examples are all of Class B. These represent four different forms. Form B 7, the simple plate, is the most common here as it is generally in England. The remaining examples are of Form B 13a (a plate with a decorative applied bar) and the closely related Forms B 13c and B 14b: plates with a decorative applied plate, respectively without and with projecting perforated lugs for sewing to the garment. Forms B 13c and B 14b are distinctly numerous here, occurring in four or five graves, although examples of both were already known from the nearby Barrington B and Haslingfield cemeteries. The occurrence of these forms in several grave groups at one site is also observed at Wakerley, Northants, and Sleaford, Lincs. The border of the applied plate of the B 13c clasps from grave 93 is similar to those from

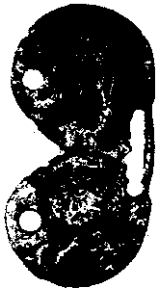


Figure 5.6 Form B15 clasp-half. Scale 1:1.

Barrington B grave 82, and the local connection hints strongly at local manufacture.

There are two other finds of particular interest, being hitherto unparalleled. The single Form B 7 clasp-half found, unusually, in a child's grave (grave 74) carries only incised ornament, here imitating the decorative bar of Form B 13a clasps. The two pairs of Form B 13a clasps in grave 13 are unique in having bars formed of sheet copper-alloy with repoussé decoration. Typologically they actually occupy an intermediary position between the normal Form B 13a forms and Form B 13b, which has a hollow rolled sheet-metal tube in place of the bar.

As one would predict, there are most often two matched pairs of wrist-clasps per grave. The examples with only one pair include grave 68, where only 10% of the skeleton survived, and grave 74, a much-disturbed child's grave with which a single clasp-half was associated. There are, however, clear examples of unmatched pairs or mixed sets of clasps in graves 3, 10, and 69, and unusual numbers of clasp-halves in grave 3 and grave 19.

Altogether three pairs of Form B 7 clasps were recovered from grave 3, one pair at either wrist and a third pair apparently part of a purse group found between the legs of the skeleton. Fascinatingly, the clasp-halves in this purse group are both the broken counterparts of unmatched halves still worn by the woman on her arms. This strongly supports the view that the purse group contained hoarded material possessions of the deceased woman or her household, which were presumably collected for recycling (see also 5.7.2, below). It is noticeable that a number of wrist-clasps at Edix Hill have been repaired and show signs of considerable wear.

The situation in grave 19 may have been much the same as in grave 3, but unfortunately the finds from the intercutting burials (Sk44A and Sk44B) are irretrievably confused. The remains of at least five pairs of clasps are recorded from these two burials, with each skeleton having a pair of clasps by either wrist. The position in which one clasp-half associated with Sk44A was found is not known (Δ9, Form B 13c). The clasps found by the wrists in this grave were both pairs of Form B 7 clasps. However one clasp-half (of Form B 7) (Δ60) was found over the pelvis of the skeleton Sk44B, and might have come from a purse collection.

The recent unstratified finds include just one fragmentary Form B 7 clasp-half (Fig 3.67 no 48). This is, however, of immense interest as it matches the single pair of clasps in a grave recorded in the 19th century (BA5: Smith 1868, pl XXXIV.4) so closely that it seems highly likely they came from the same grave. Besides the single row of repoussé bosses, the decoration includes an unusual and distinctive punchmark comprising a circle within a triangle. Unfortunately the punchmarks on these items have not yet been compared under the scanning electron microscope (see below, 6.8). We should also note that the bossed and stamped pair of Form B 7 clasps from grave 69 are distinctly similar to these in layout, and in the use of unusually elaborate punches.

Altogether, the 19th century wrist-clasp finds from Barrington A are similar both in quantity and range to those from the recent excavations, the exception being the absence of examples of Forms B 13c or B 14b from the older collections. The majority of the 19th century finds are of Form B 7 with two examples of Form B 13a. Meriting special attention are two pairs of ornate Form B 19 clasps divided between the Ashmolean and British Museums but undoubtedly from a single grave and probably associated with a decorative gusset plate too (MacGregor and Bolick 1993, no 29.33). A complete oddity is the plain epsilon-shaped plate (Fig 5.6), technically classified as Form B 15.

5.2.5.2 Bracelets (Grave 65)

Early Anglo-Saxon bracelets are a class of artefacts that would repay more thorough study than they have yet enjoyed. Although they are not especially common, there are several familiar types of bracelet, but no comprehensive scheme to classify them by. Furthermore, bracelets seem to have had a much stronger Romano-British than Germanic ancestry, rendering their general history as an artefact-type of considerable significance.

There is only one sure example of a bracelet amongst the recently excavated grave groups, a copper-alloy slip-knot ring in grave 65 that had, on the evidence of a bone still *in situ*, been worn by a child (see further 9.4, below). A similar slip-knot ring was found in grave 95 but seems in this case to have formed part of the necklace. This does not rule out the item having originally been made as a bracelet. As has been noted, wire slip-knot rings were extensively used in Anglo-Saxon dress. It is nonetheless relevant to note that 'expanding bracelets' of this kind were common in 4th century Roman Britain, according to a comprehensive survey by Hilary Cool, where they are classified as Group 3 (1983, 130–5).

Of the 19th century grave groups, BA1 contained a cast copper-alloy bracelet with a crenellated edge around about half of its circumference (Smith 1868, pl XXXIV.6). The Romano-British ancestry of this form is beyond question. There are various 'battlement' patterns amongst bracelets of Cool's 'light bangle' types (Cool 1983, 152–83; Crummy 1983,

38–41). The type we have here, which is notched in the 'lower' sections of the crenellation, is the most common type, Group XIII in Cool's scheme; her catalogue of this group (1983, 782–96) has 107 entries, including several examples from Great Chesterford, Essex, and one from Cambridge, although not this Barrington A find.

Another remarkable feature of the 19th century collections is the extraordinary number of specimens of a particular type of silver bracelet. This type has a penannular band of sheet silver, usually quite broad, decorated with elaborate punchmarks, and sometimes longitudinally fluted. One example is from a grave group (BA11; Smith 1868, pl XXXIV.1). There may be as many as eight further specimens represented in the 19th century collections, although some apparent punchmark links between fragments, ie between BM 76,2–12,32 and UM Z21330 fragments, and BM 76,2–12,33 and UM Z21322, may mean that the number of original bracelets represented was a little lower. The concentration here is unusual nonetheless. Silver bracelets like this have been found elsewhere, especially in Suffolk, at Holywell Row, Icklingham, Lackford, Tuddenham, and Boss Hall, Ipswich (Hines 1997, fig 115; see also Sherlock and Welch 1992, 47–9). This type has no very obvious Romano-British ancestry. Considering the elaboracy of the punches used to decorate these objects, it seems that detailed and comprehensive analysis might yield useful results in respect of manufacture and distribution.

5.2.5.3 Finger rings (Grave 19)

The incidence and range of types of finger ring in early Anglo-Saxon England is another under-explored subject. As noted above, it can be difficult to distinguish true finger rings from dress rings, for instance rings worn as part of a necklace. It appears, however, that early Anglo-Saxon finger rings were more often in silver than copper alloy. The most common form is that of a flat, thin band of metal formed into a spiral of two or more turns about the finger (Fisher 1979, esp 27–40; cf MacGregor and Bolick 1993, 169–74).

There is just one example of a finger ring, found *in situ*, from the recent excavations: a penannular ring formed of a strip of silver sheet simply decorated with two rows of punches (grave 19). There may, however, be as many as four finger rings in the 19th century collections. Three of these are of the familiar spiral type, two in silver and one in copper alloy (MacGregor and Bolick 1993, nos 27.6 and 27.9). The silver example in the CUMAA, still has a finger bone *in situ*. The doubtful fourth specimen is a copper-alloy slip-knot ring, which Fisher's study implies is more likely to have been a necklace ring (see above, 5.2.3.5) although its inner diameter (16mm) is typical of a finger ring. It may also be noted that a silver ring is recorded as having been found in BA5, but the size and function of this object are unknown. It may have been one of the silver bracelets discussed above.

5.3 Tools and personal equipment

5.3.1 Knives (see also below, 6.3.1)

Knives are common grave goods, occurring in some 66 of the recently excavated burials, having been deposited with adults of both sexes, and with children (see further, Chapter 8). The conventional classification of early Anglo-Saxon knives is according to the shape of the back of the blade of the knife, while Heinrich Härke has recently argued (1989) that the length of the blade is an important and independent variable. Vera Evison used a more elaborate classification system, based on the shapes of both the back and the edge of the blade, in connection with the Dover-Buckland cemetery (1987, 113–16). Unfortunately it is not always possible to determine the shape of the blade with corroded specimens, and the difference between the major traditional types (A: curved-backed; B: straight-backed; C: with a step towards the point) is not always distinct. Blade length is even less frequently measurable as many of the specimens are broken. Where possible, however, the catalogue here classifies knives by the shape of the back of the blade, and blade length according to Härke's three groups (1: 45–99mm; 2: 100–129mm; 3: 130–175mm).

There are few significant chronological facets attributed to knife typology. Type C knives appear to be particularly characteristic of the 7th century, perhaps superseding Type B knives in that period, while Härke (1989) also notes that the longer knives form a higher proportion of 7th century finds.

The great majority of the knives found in the recent excavations, 44 examples, all but one from a grave group, are of Type A. At least six knives (two unstratified) are identified as Type B and three (two of them from grave 18) as Type C. In two cases (grave 33 and grave 106) it is, however, unclear whether poorly preserved knives should be assigned to Type A or Type B, while the straight-backed knife from grave 29 may have a small but deliberate step towards the point. A total of twelve knives are recorded from grave contexts in the 19th century excavations: BA21 and BA22 have two knives each; BA22 is recorded as a double grave; BA21, however, appears to have been a single grave. There are nine knives illustrated by Smith (1868, pl XXX), unfortunately without a scale and with only incomplete and inconsistent attributions to grave groups; eight of the illustrated knives are of Type A and one (unprovenanced) of Type C.

The range of the lengths of complete blades agrees with the distribution in Härke's larger corpus, approximately 75% being of size-group 1, 20% of size-group 2, and 5% of size-group 3. Again in agreement with Härke, we find a larger average length of blade in male graves: eleven measurable blades with a mean length of *c* 90mm in male graves and nine blades averaging *c* 78mm in female graves. There is no discernible difference in blade length

between female and children's graves in the limited amount of usable evidence from this site.

5.3.2 Latch lifters/keys and girdle hangers (Graves 10, 13, 18, 19, 38, 39, 47, 54, 68, 69, 78, 79, 83, 93, and 106) (see also below, 6.10)

These items are difficult to analyse in detail, firstly because they are often found in a fragmentary state and secondly because they often form part of complex assemblages found in women's graves. These complex assemblages are usually found around the waist or girdle area, and include items associated with a belt or straps (buckles, rings, and mounts) and bags (such as ivory rings) (see 5.3.3 and 6.10). In this report, the term girdle hanger is used of T-shaped iron or copper-alloy specimens, while latch lifter is the preferred term for the more numerous 'finger crooked' or L-shaped iron rods (see Figs 3.51 no 2, 3.56 nos 5, 16 & 21 and 3.66 no 37).

Latch lifters were found in at least seven of the recently excavated graves (graves 10, 13, 18, 54, 78, 79, and 83) and are probably represented by shaft and/or loop fragments in up to seven more graves (graves 19, 38, 39, 47, 68, 69, and 93). They were also found in two grave groups in the 19th century (BA4 and BA23) and are represented by three unstratified finds in the older collections. Alongside these should be considered the iron girdle hangers from graves 83 and 106. A total of four of the recently excavated grave groups and BA23 contained a set of three apparently identical latch lifters in a cluster: in the case of grave 79 and BA23, however, it is not clear whether two or three such objects were included. Such sets of three latch lifters seem to be common at other sites (cf Hirst 1985, 88; Meaney 1981, fig V.ii, 3), although sets of only two identifiable pieces are also known.

This duplication of latch lifters in a set would merit closer attention in future research as it is clear that keys were of considerable symbolic significance in terms of a woman's status (Meaney 1981, 178–81; below, 6.10). Such symbolism may well have been the only function of the pairs of identical copper-alloy girdle hangers that are a common feature of women's dress in Anglian England (MacGregor and Bolick 1993, 228–31; Hines 1996). One pair of such girdle hangers is an unstratified find from the 19th century (MacGregor and Bolick 1993, no 42.3). Another complete one (Fig 3.66), in two parts, was found by metal-detector in association with the recent excavations, and the rod of a possible girdle hanger was found in grave 10.

5.3.3 Ivory and antler rings and a possible satchel mount (Graves 13, 69, 79, 83, and unstratified)

Large rings of elephant ivory are, remarkably, reasonably familiar finds from early Anglo-Saxon graves, and are normally identified as bag rings: a rigid hoop that was stitched to the mouth of a bag (Myres and Green 1973, 100–3). There are three specimens from recently excavated grave groups in this cemetery: graves 13, 69, and 79. All of these were found in close association with either definite or probable latch lifters (see below, 6.10). Together with these can be noted a (necessarily) smaller antler ring found with a latch lifter complex in grave 83. This can be compared with similar, probably antler, rings in graves 76 and 83 at the cemetery at Burwell, Cambs (Lethbridge 1931). There is one ivory ring, with no grave context, in the 19th century collections.

An unstratified fragment of punch-decorated copper-alloy strip (F1000 Δ45: Fig 3.67) is strikingly similar to mounts from the satchel lid in a bed-burial at Swallowcliffe Down, Wilts (Speake 1989, 59–62). Unfortunately, the Edix Hill fragment is too small to confirm this identification.

5.3.4 Toilet equipment

There is a small range of items associated with personal toiletry, occurring predominantly in female graves.

5.3.4.1 Tweezers (Graves 3, 20, and 93)

Copper-alloy tweezers were found in three women's graves in the recent excavations (graves 3, 20, and 93). A pair of tweezers was also found in the double grave BA22 in the 19th century. Since this grave contained two spearheads it may have contained two male burials, but this is not certain. There are three examples without grave contexts in the 19th century collections (including MacGregor and Bolick 1993, nos 38.9 and 22).

5.3.4.2 Ear scoops and pins (Grave 13)

As was noted in connection with wire necklace rings (above, 5.2.3.4), toilet equipment in the form of so-called ear scoops and pins attached to copper-alloy slip-knot rings appears sometimes to have been attached to the necklace, sometimes to the belt or girdle. One such example, now imperfect, may be represented in grave 13, while a fully preserved set was found in BA5 in the 19th century. Unstratified 19th century finds also include a set of an ear scoop and two pins (of different sizes) suspended from a rather crude spiral copper-alloy ring, and a single copper-alloy ear scoop (MacGregor and Bolick 1993, nos 37.3 and 18 respectively).

5.3.5 Combs (Graves 2, 14, 18, 91, 97, 105, and 109) (Incorporating a report by Ian Riddler)

Combs made of antler were found in seven of the recently excavated graves, while one further exam-

Figure 5.7 Comb fragment (UM Z20616) Scale 1:1

ple is recorded in a grave group excavated in the 19th century. It is possible that the latter (from BA15) is the fragment with no attributed context now in the Cambridge University Museum of Archaeology & Anthropology (UM Z20616; Fig 5.7).

All of these combs are of composite construction, with a central plate or plates with sawn teeth sandwiched between attached ribs or side-plates (cf MacGregor 1985, 73–96), which presumably served to provide a better grip. These outer pieces are usually decorated with incised motifs, and often bear saw marks showing that they were attached, with small metal rivets, before the teeth were cut. The difference in size and decoration between the two side-plates on the comb from grave 91, and the absence of saw marks from one of them, thus implies that this comb had been repaired.

Although it has been argued that combs could have been used as tools in textile work (West 1969, 13–15), their inclusion in both male (graves 2 and 97) and female graves (graves 14, 18, 91, 105, and BA15) is a strong indicator that they served for personal toiletry (see textile-working tools, 5.3.6, below). One comb is attributed to the severely disturbed and unsexable skeleton in grave 109.

A total of three of the combs from this site are single-sided composite combs: ie they have teeth along only one edge (graves 18, 97, and 105). The combs from graves 18 and 105 have a single side-plate on either side, but there is evidence of two side-plates having been attached on either side of the grave 97 fragment. Ian Riddler (archive report) notes that this feature is rare, and that most known examples date to the 7th or 8th centuries, although the earliest examples can be placed in the 6th. The comb in grave 18 is of asymmetrical form, again a rare feature in Anglo-Saxon contexts although more common in Frankish Gaul and Frisia (I Riddler pers comm). The remaining combs are all double-sided with a single connecting plate on either side; only a fragment of a tooth-plate survives in grave 109. It also appears possible that the rivets and fragments associated with grave 2 represent more than one comb; since this is a much disturbed multiple burial context these could then derive from two separate burials.

5.3.6 Textile working tools

Textile working was a domestic craft, and there is strong evidence that as such it was firmly categorised as a female occupation (L B Jørgensen 1992, esp 151–2). Tools associated with spinning and weaving are found only in women's graves, and it seems likely that their inclusion was a result of conscious gender and status symbolism rather than of some purely pragmatic association.

5.3.6.1 Weaving batten (Grave 18)

A weaving batten apparently made of a cut-down sword was found in grave 18 (see also 6.3.9 and 6.6). This had a horn-covered grip and a leather sheath. A survey of such implements in Anglo-Saxon graves was published by Sonia Chadwick Hawkes in 1958 (Chadwick 1958, 30–5) and has recently been reviewed, in the light of further finds from Dover-Buckland, by Vera Evison (1987, 111–12). No significant patterns emerge from this material; it is noted that most graves with weaving battens belong to the later 6th or 7th centuries, although Holywell Row grave 11 is undoubtedly a considerably earlier example.

5.3.6.2 Spindle whorls (Graves 18, 23, and 109)

In the recent excavations antler spindle whorls were found in graves 18 and 109 and a ceramic spindle whorl in grave 23. There are seven further spindle whorls attributed to Malton in the Ashmolean collections; one of these is of decorated antler or bone, while the remaining six are of stone. The latter certainly could be attributable to the earlier Anglo-Saxon period although the use of this material for spindle whorls appears not to have been common then (cf West 1985, 139 and Figs 244–5).

5.3.6.3 Pin-beaters

The Ashmolean collection also includes one, possibly two, examples of the pointed bone implement used in weaving known as a pin-beater (West 1985, 125 and fig 246:15–17; Riddler forthcoming). The specimen that can be associated with this site with most confidence is of some interest as it carries incised motifs which Hines (1990, 452) has suggested to be a pseudo-runic inscription. But these finds may be of greatest significance in the present context because pin-beaters are extremely rare as grave goods in early Anglo-Saxon contexts and are very much more frequently associated with settlement sites (Jackson and Ambrose 1978, 228–34; Evison 1987, 112). The implication is, then, that at some point the 19th century collectors unearthed part of a settlement site, very probably contemporary with the cemetery (see above, 1.3).

5.3.6.4 Loomweight

Half of a circular loomweight made of chalk was found as packing around posthole, F129 (Fig 3.67).

5.3.7 Shears

Amongst the known and recorded 19th century finds, two pairs of shears are attributable to Barrington A. Smith recorded and illustrated a pair from a man's grave (BA3: Smith 1868, pl XXXI.3). There is also a pair in the British Museum attributed to this site (Fig 5.8) which is clearly different from the pair depicted by Smith.

Shears were recorded in three female graves from Dover-Buckland, and a series of four further burials with such tools, mostly of the 7th century and apparently all female, has been noted (Evison 1987, 113). Three of these are from Cambridgeshire: Burwell graves 2 and 42, and Shudy Camps grave 76 (Lethbridge 1931; 1936). There are also, however, what appear to be the remains of a smaller pair of shears from Girton College, Cambs, grave 33, a burial of the 6th century.

5.3.8 Bone point (Grave 1)

A deliberately sharpened piece of bone is associated with grave 1. No specific function can be suggested for this. A large number of equivalent objects found at the West Stow settlement site are classified by Stanley West as awls (eg West 1985, fig 247:1–6).

5.4 Weaponry (Incorporating a report by Heinrich Härke)

In contrast to the domestic implements associated with women (above, 5.3.6), weaponry is very clearly and conspicuously linked with the male gender in earlier Anglo-Saxon burial rite. There is a limited range of categories of weaponry deposited in these contexts – usually just swords, shields and/or spears, and occasionally arrows or axes – and rather limited too is the range of significant typological variation within these classes of weaponry: it is rarely possible to establish fine chronological sequences on the basis of weaponry. On the other hand, the provision of weaponry and the composition of weapon-sets can have substantial implications in terms of the social status of the deceased and the structure of the community represented by the cemetery (Härke 1992b). We should also note that the substantial iron pieces of weaponry that survive often bear mineral-preserved organic material which provides evidence for technical details of the construction of composite artefacts such as shields.

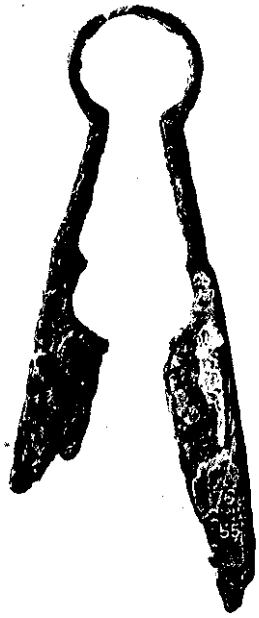


Figure 5.8 Pair of shears, (BM 76.2–12.55) Scale 1:1

5.4.1 Swords

There are two extant swords attributed to Barrington A, both 19th century accessions to the British Museum. It is possible that one or other of these is the sword from the sword grave, noted by Charles Babington in 1860 as having been found some twenty years previously (Babington 1860, 8).

The available typologies of swords in the Germanic world of this period are based on various metal fittings to the sword or its scabbard, none of which survive in the case of the Barrington A swords (Härke 1992b, 88–9). Both of these swords are of the long two-edged type – what is sometimes called the *spatha* type – with a tang to form the core of the grip, and some part or at least an iron core of the pommel all in the one piece. The blades are 0.715m, and 0.8m long respectively. Both pommel pieces have a similar curved outline, with longitudinal fluting in the case of the sword BM 80,8–9,1. There is mineral-preserved horn on the grip and wood from the scabbard on the blade of sword BM 76,2–12,46 but no clear trace of any such fittings on the other sword (Esther Cameron pers comm).

For a discussion of the cut-down sword/weaving batten from grave 18 see 6.3.9 and 6.6 below.

5.4.2 Shields (Graves 2, 7, 9, 12, 27, 28, 29, 33, 34, 36, 46, 48, 51, 66, 70, 77, and 88)

The early Anglo-Saxon shield was a complex construction that can be represented in excavated graves by a variety of fittings. The evidence from this cemetery can be assessed in light of a thorough typological and technical study of such shields by Dickinson and Härke (1992). The principal fittings

that are found are the boss, the grip, and iron studs, sometimes plated; less commonly found items are decorative mounts or appliqués, shield braces, and rim mounts (see below, 6.3.3, for fuller discussion of shield construction).

Items identified as shield bosses, grips or studs suggest that shields were deposited in seventeen of the recently excavated graves. Shield bosses were found in eleven graves (graves 2, 7, 12, 28, 29, 33, 34, 46, 48, 51 and 88), and are highly uniform in type: nine are of Dickinson and Härke's Group 3, one of Group 1.1 and one of Group 6. Group 1.1 is dated from the late 5th century and throughout the 6th, Group 3 from the beginning of the 6th to the mid 7th century and Group 6 from the mid 6th to the mid 7th century (Dickinson and Härke 1992, 6–24). The remains of grips have been identified in thirteen graves, associated with all of the recognisable shield bosses but with additional examples identified from fragments in graves 27 and 36. The latter grave seems in fact to contain the remains of a shield boss in the form of a large iron disc such as can be found at the apex of a shield-boss cone of this date. Most of these grips are of the flat rather than the flanged type; similarly, short grips are more frequent than long ones (cf Dickinson and Härke 1992, 24–7). Grave 33 also contained two shield braces.

Shield studs (cf Dickinson and Härke 1992, 27) are identified in eleven grave contexts (graves 2, 9, 29, 34, 46, 51, 66, 70, 77, 88, and 106); in four cases, interestingly (graves 9, 66, 70, and 77), these are grave groups with no identified traces of a shield boss or grip, although in the case of grave 70 there is also a shield board rim-mount fragment. It is reasonable to consider, then, the possibility of the deposition of shield boards without the boss and grip in these cases. This is a phenomenon that Härke investigated and found to be practically unattested, noting only a handful of examples where a case could be made for the deposition of the shield boss and grip without the board (Dickinson and Härke 1992, 64–5; Härke 1992b, 142–3). At this site, the condition or circumstances of three of the burials concerned (66, 70, and 77) allows for the disturbance of the deposit as an explanation of the absence of the boss or grip in each case. Altogether, the case for or against partial deposition cannot, on present evidence, be proven either way.

There is evidence for a surprisingly small number of shields from the 19th century collections. A single shield boss (of Group 3) is assigned to a recorded grave group, BA16 (Smith 1868, pl XXXI.1). A second shield boss was illustrated by Smith (1868, pl XXXI.2) with no given provenance. The illustration also lacks a scale, so that a definite classification is not possible although it appears that this boss might belong to Group 2, another 6th century type. The 19th century collections contain the remains of four further shield bosses. Of these one is unclassifiable; two are assigned by Härke (archive report) to Group 1.1 and one to Group 1.2, although since the latter (UM Z43427) does not have an overlapping carination it seems reasonable to regard it as transitional between Group 1.2 and Group 4. Both of these types, indeed, are dated principally to the period between the mid 5th and the mid 6th century. There are two grips in this collection, both of the short flat type, and one shield stud.

The recent unstratified finds include three more, unclassifiable, shield boss fragments and five shield studs (Fig 3.67 nos 55, 57, 61, 62). A silver covering has been identified on the central disc of one of these shield boss fragments. There are also two finely executed, cast and gilt copper-alloy decorative elements apparently from a shield (cf Dickinson and Härke 1992, 29): a round mount with Style I animal ornament that may have been fitted to the point of a shield boss and an appliqué in the form of a model sword (Fig 3.29). These testify to the presence of one or more carefully crafted shields of a 'display' character, a kind that is paralleled elsewhere (cf Dickinson and Härke 1992, 61–2; Härke 1992b, 140–5).

Laboratory study of the organic material associated with the iron shield fittings by Jacqui Watson (below, 6.3.3) provides a consistent picture of shield board and shield grip construction. The shield board was made of wood, often attestably covered with leather. Where species identifications have been made, alder was the wood used in five cases, willow or poplar in three or four, lime in a further three and beech in one. These findings agree completely with the details reported by Härke (Dickinson and Härke 1992, 47–54). A wider range of mineral-preserved organics is associated with the grip. Wood could be used to give the metal grip body, attached with leather or perhaps swathed in cloth, and with some evidence for packing in the form of straw, hair or feathers (graves 29 and 51). Once again, these findings are in full agreement with Härke's description (Dickinson and Härke 1992, 35–42).

5.4.3 Spears

Spears are represented exclusively by spearheads, and these are, predictably, the most numerous category of weaponry from this site. The conventional classification is that of Michael Swanton (1973; 1974), a scheme which identifies twelve series of spearhead-types (A–L) on the basis of the shape of the blade and the proportional length of blade and socket; these series can be subdivided into groups, generally according to the overall length of the spearhead.

It is quite surprising that spearheads are attributed to only one or two more of the recently excavated graves than shield fittings – a total of nineteen graves, one of which is that of a child (grave 107, Sk632: a five-year-old, presumably a boy). A further grave (grave 12) contained two spearheads together with a shield boss (see Härke 1992b, 104–13, for the frequency of different weapon-types and combinations in a large sample of early Anglo-Saxon graves). Of the grave groups recorded in the 19th century, conversely, spearheads were recorded in eight

graves; this may represent nine burials with spears, as BA22, a double grave, contained two spearheads. The recent unstratified finds include three spearheads, while the 19th century collections include fourteen spearheads with no recorded context.

Of Swanton's series, three are particularly well represented at this site, with Series H blades being especially common (26 specimens). The middle size-group, H2, 0.2–0.35m long, is the most frequent of these. The spearhead from the child's grave (grave 107) is of the short Type H1. The other relatively frequent forms are those of Series C and E, forms identified by Swanton as equivalent in general size and proportions but with leaf-shaped and angular blade-outlines respectively. The two spearheads in grave 12 are of Type E4; Swanton (1973, 87–91) notes that the few datable grave groups with this type are of the later 6th or 7th century, a dating which agrees with that of the Group 6 shield boss in this grave, noted above. The remaining spearheads from this site, not all of which are precisely classifiable, in some cases because of the lack of scales to the figures in Smith (1868), represent Types D1, F1, G2, I, and L. There is nothing unusual about the overall range and ratio of types here.

The evidence of mineral-preserved organics is less rich with the spearheads than with the shield fittings (see 6.3.2). From the position of these items at the head-end of the grave it is clear that spears were normally deposited complete with the shaft, and eleven spearheads have recognisable wood preserved in the socket. Species identifications have been made in eight cases: ash in three of these and hazel in five (ash, or probably ash: graves 7, 33 and 46; hazel, or probably hazel: graves 12, 36, 48, 66, and 111). Leather was also found on the blade of the spearhead from grave 66. This association may well have been accidental, although Vera Evison has identified spearheads buried wrapped in textile at Great Chesterford and Buckland, Dover (Evison 1994, 4). She also suggests that pins can be used to fasten this cloth. We may note here the possible association of an iron pin with a spearhead of Type D1 in grave 62, but there is no recorded relationship between the pin and the spearhead, and the former, as noted above, is not necessarily part of the furnishing of this grave.

Attention should also be drawn here to the fact that a comparison of the ironworking technology represented by the spearheads with that of other artefact-types from this site, especially knives, indicates that the quality of material and construction used for the spearheads could be surprisingly poor (below, 6.6).

5.5 Vessels and containers

5.5.1 Pottery (Graves 13, 14, 108, and 109) (Incorporating a report by Morag Woudhuysen)

Ceramic vessels that had been deliberately deposited as grave goods, apparently in a complete state, were found in four of the recently excavated graves (Fig 5.9:1–4). Of these two were the graves of adult females and two were children's graves. All were plain pots. The pot in grave 14 has the shape of a bowl with an everted rim and corresponds to a set of vessels that Myres (1977, figs 68–9) called splay-sided bowls. The narrower vessel from grave 108 with a plain rim appears to correspond to no special category in Myres's scheme other than the forms described as 'related to' the splay-sided bowls. Morag Woudhuysen (archive report) notes that both of these vessels have a similar fabric characterised by 'sandy conglomerate' lumps and that both are likely to have been held in the hand during the forming process. The vessel in grave 13 is an example of what Myres classifies as the sub-globular form with an inturned rim (Myres 1977, figs 65–6).

The vessel in grave 109 is taller than the others, with a neatly rounded body and everted rim. It seems most appropriate to associate this with Myres's sub-globular beakers (Myres 1977, figs 34–5). Pottery of this vase-like shape is especially characteristic of the later 6th and 7th centuries (Myres 1977, 8–9).

There are three further plain ceramic vessels in the 19th century collections attributed to Barrington A. Another plain sub-globular pot, in fact with a very slightly everted rim although Myres classifies it as having an upright or inturned rim (1977, fig 66, corpus no 2741), is in the Cambridge University Museum of Archaeology & Anthropology (CUMAA) (Z21360). The dimensions of this vessel, however, are quite unlike the vase-like outline of the vessel from grave 109. Distinguished by having a stronger carination are a pot in the Ashmolean Museum (Myres 1977, fig 8, corpus no 2073), and a larger vessel, which can properly be described as biconical, in the CUMAA (Myres 1977, fig 1, corpus no 3019). Both of these again have slightly everted rims. A further plain vessel from the site of Barrington A is classified by Myres with a set of large globular and related forms with upright rims (Myres 1977, figs 48–51; this vessel *ibid* fig 48, corpus no 3017). Myres does not note the unusually prominent corrugation in the body of this vessel which indicates that it was spiral coil-built. This phenomenon is not usually so evident with Anglo-Saxon pottery but can be presumed to have been the normal method of constructing such non-wheel-thrown pottery (Jane Timby pers comm). If the identification of this vessel as Anglo-Saxon is correct, this is an interesting addition to the evidence for the techniques of Anglo-Saxon potting.

Myres also illustrates four carinated bowls from 'Barrington', not, unfortunately, distinguishing between Barrington A and Barrington B (1977, figs 95–6); one of these bowls, now in the British Museum (Myres 1977, corpus no 2072) is attributed to Barrington A. Such bowls are of particular interest as the type is clearly of 5th century origin in England, although it is evident that it was still well represented in 6th century contexts (Myres 1977, 18–19).

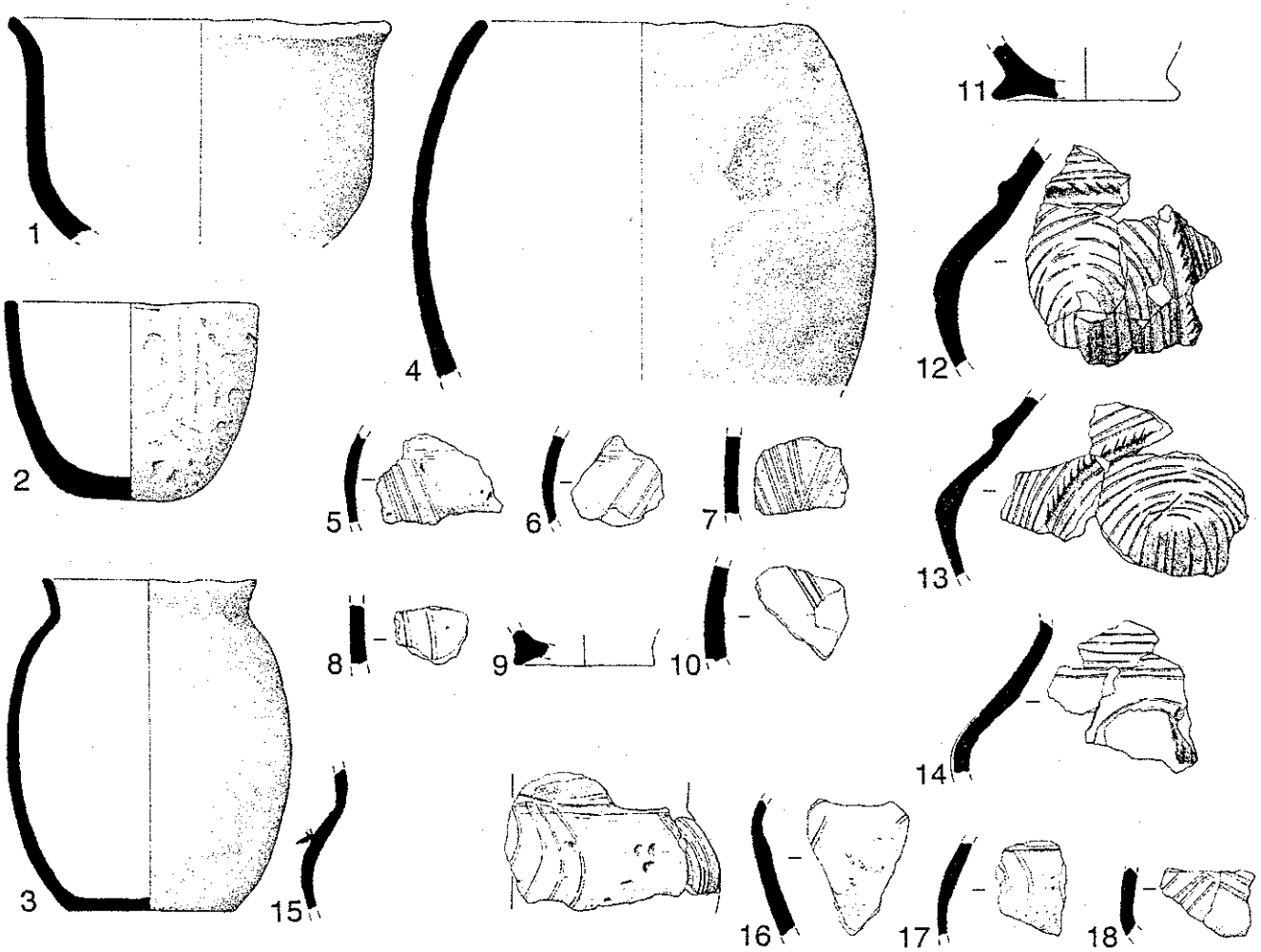


Figure 5.9 Pottery from various excavated contexts: ***1*** *from grave 14,* ***2*** *from grave 108,* ***3*** *from grave 109B,* ***4*** *from grave 13A,* ***5–7*** *from grave 114,* ***8*** *from pit 176,* ***9*** *from grave 97,* ***10*** *from grave 108,* ***11*** *from grave 5,* ***12–14*** *from ditch 579,* ***15–17*** *from pit 176, and* ***18*** *from grave 97. (Scale 1:3)*

Another complete vessel attributed to Barrington A in the CUMAA (Myres 1977, fig 175, corpus no 2740) is decorated with incised lines and stampmarks. In form and size this is distinctly similar to the plain vessel in the Ashmolean Museum, with a clear but not particularly sharp carination and an everted rim. There is an incised line around the carination, incised multilinear standing arches above this, and round stampmarks. Although Myres was able to group this vessel on the basis of the combination of decorative motifs and stampmarks, he illustrates no very close parallels, and indeed it appears unusually small alongside the other vessels with this range of ornamentation.

Several of the recently excavated graves contained sherds that can sometimes definitely, sometimes plausibly, be identified as Anglo-Saxon and broadly contemporary with the cemetery. Certainly of early Anglo-Saxon date are three body sherds with multilinear incised decoration, forming a chevron on one sherd, recovered from grave 114 (Fig 5.9:5–7). These sherds appear to have been secondarily incorporated in the fill of this woman's grave perhaps as part of 19th century disturbance. Sherds that appear more likely to have been deliberately included in the grave groups are body sherds with incised decoration from grave 97 (the grave of a male) and grave 108, an unusually well-furnished child's grave. Left of the pelvis of the man in grave 97 was a body sherd with incised multilinear decoration (Fig 5.9:18), and a base sherd which, having a footring (Fig 5.9:9), is unusual though not unparalleled as a piece of early Anglo-Saxon pottery (cf Myres 1977, figs 75–6). A large sherd of pottery was lying upon the pelvis of the child's body in grave 108 (Fig 3.64), a grave in which one of the smaller plain vessels had also been deposited. There was also a small sherd with tooled decoration from this grave (Fig 5.9:10). Rim sherds in a fabric and of a form that could well be early Anglo-Saxon were recovered from grave 7, another man's grave, and grave 78, a woman's grave (neither illustrated). In both cases it appears likely that they were accidental inclusions within the fill. Also included in grave 78, indeed, were some body sherds which are not immediately recognisable as a familiar Anglo-Saxon fabric (not illustrated). By the right hand of the body in grave 5, and thus possibly deliberately included, was a

collection of worn sherds and a pedestal ring that could conceivably be Anglo-Saxon but cannot confidently be identified as such (Fig 5.9:11). Several other graves included potsherds in their fill, probably deriving from the Iron Age settlement. Accidental redeposition is, of course, highly likely in these cases although deliberate inclusion cannot be entirely ruled out.

There is also a little contemporary Anglo-Saxon pottery from other features. Most striking is a set of sherds from a vessel of uncertain form but decorated with moulded bosses and profuse incised multilinear decoration from the Iron Age ditch F579 (Fig 5.9:12–14). The apparent location of this Anglo-Saxon pottery with the top fills of a much earlier feature could be accounted for by the close association of a child's grave (grave 101) against the edge of the ditch. Along with several other artefact-types, the fill of pit F176 produced a number of body sherds of what is probably Anglo-Saxon pottery with incised multilinear decoration (Fig 5.9:8, 15–17). A fuller discussion of these decorated sherds can be found by Woudhuysen in Malim, 1998.

5.5.2 Glass (Graves 4, 18, and 46)

Single fragments of glass were found in three of the recently excavated graves (graves 4, 18, and 46). The piece in grave 18 is a flat, oblong strip, and the object from which it has come is a mystery. The other two fragments, both from men's graves, are rounded body sherds from glass vessels, though too small for the type of vessel to be readily recognisable. As with potsherds (above), it is possible that glass vessel fragments were deliberately deposited in graves.

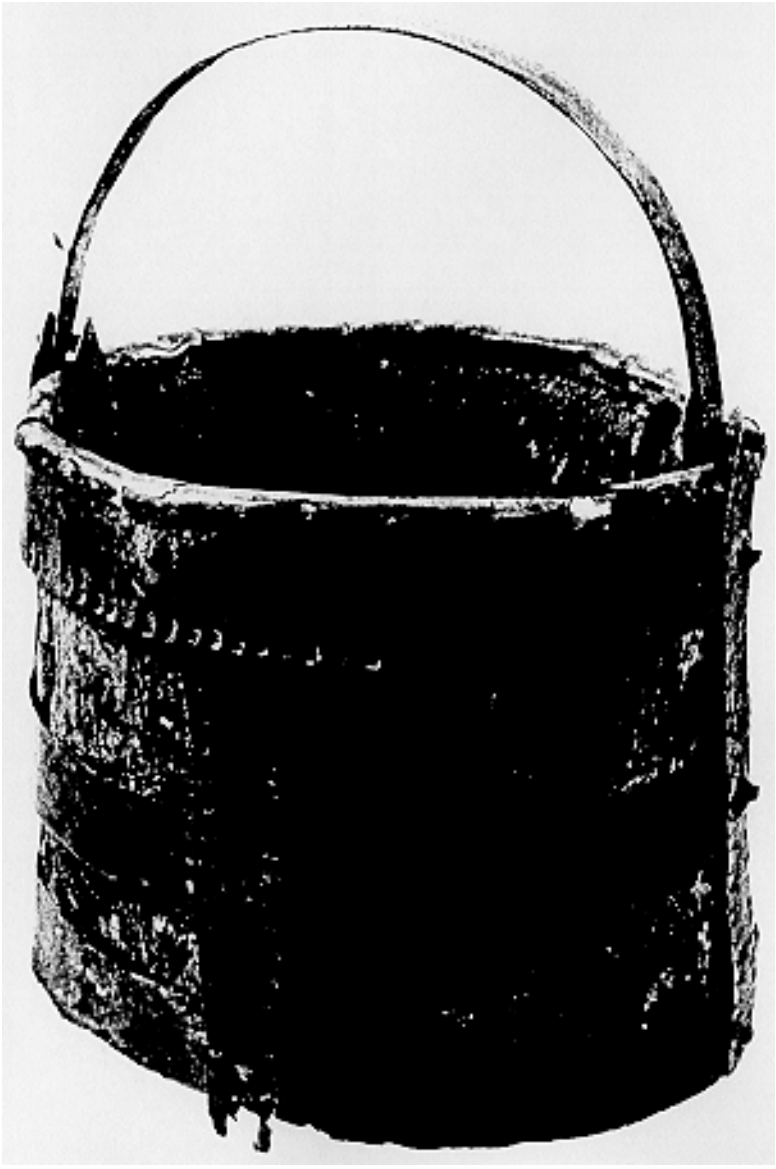


Figure 5.10 Stave built wooden bucket with copper-alloy binding strips, UM Z21236 Scale 1:1

5.5.3 Metal-bound wooden buckets (Graves 18 and 88)

These vessels are also found in both male and female burials. There is no comprehensive typology of early Anglo-Saxon buckets, though recent studies have noted regular variations in the form of the metal bindings and the form and fixing of the handle (eg Evison 1987, 104–5; Cook, in Evison 1994, 22–4). Buckets with both copper-alloy and iron fittings are represented at this site.

One copper-alloy-bound bucket is from a recently excavated grave (grave 88) and one from a 19th century grave group (BA6). Remains of wood identified as yew have been identified from the former. The BA6 bucket has a bifurcating mount, where the handle is attached, of a type that is also found at several other sites in the vicinity (Cook, in Evison 1994, 23). From Smith's illustration (1868, pl XXXI,4), it appears that this bucket was found with much of the wooden body intact, but that has now disappeared. A second copper-alloy-bound wooden bucket in the 19th century collections from Barrington (University Museum, Cambridge, UM Z21236; Fig 5.10), does still have much of the wood intact. Fragments of what appear to be the copper-alloy bindings of two further buckets found in the 19th century are in the British Museum collections.

Two iron-bound buckets are represented, one from the recent excavations (grave 18) with a well-preserved set of fittings, and the other by a single handle which is an unstratified 19th century find. In form, the grave 18 bucket is distinctly plain, and no significant typological relationships can yet be established. The wood of this bucket has been identified as oak.

5.5.4 Copper-alloy rim mounts from wooden vessels (Graves 2, 11, 66, and 69)

Copper-alloy mounts which show the profile and curvature of the rim of a lathe-turned or a stave-built wooden vessel, in some cases with fragments of wood still *in situ*, are identifiable in at least five of the recently excavated burials (graves 2 – with both Sk3B and Sk3C – 9, 66, and 69) and possibly one more (grave 11). There is also one unstratified example in the 19th century collections. In the case of grave 9 it has been determined that this mount is from a stave-built container of willow or poplar wood. Copper-alloy mounts, with maple preserved on them, were found within the bucket during conservation in the lab. Otherwise only in the case of grave 66 is it explicitly inferred that the mount is likely to have been a repair patch rather than a decorative addition (below, 6.3.4; cf Evison 1987, 105–6).

5.5.5 Iron-bound wooden boxes (Graves 18 and 109)

Originally lifted in one piece with the vase from grave 109 were a number of iron fittings which include the clearly recognisable handle of an iron-bound wooden box, an artefact-type familiar from the nearby site of Melbourn (Wilson 1956) and recently discussed in some detail in relation to finds from Dover-Buckland by Vera Evison (1987, 100–3). The single handle in this grave group is of a rectangular type, the common type found at Dover-Buckland and also present in Shudy Camps, Cambs, grave 48 (Lethbridge 1936, Fig 9.3), although the identifiable box handles from Melbourn are both curved. Evison suggests that such handles were placed centrally on the lid (Evison 1987, fig 18a).

The iron fittings from grave 109 also include what appear to be two parts of a locking mechanism again familiar in association with boxes of this kind (Speake 1989, fig 24). The two surviving pieces are apparently rather irregular in size and shape, and have an unusually curved profile, as if the sides of the box had been bowed in. The larger piece (Fig 3.64 Δ4) is broken at the angle, and traces of mineral-preserved wood have been identified lying across the exposed cross-section of the bracket.

The association between the box and the vase in grave 109 implies that the box was placed on top of the latter in the grave deposit, and that during decay of the wood the heavy iron fittings slumped down on to the pot.

There are also iron fittings from grave 18 that seem to be most plausibly identified as box fittings. These comprise the remains of what appears to be another rectangular handle and a right-angled bracket with a slot or hole cut into one arm and mineral-preserved wood *in situ*. The hole seems slightly large for a rivet hole, and a function as a keyhole in a lock plate has been suggested. None of the comparable examples of boxes help us to identify this piece, nor any of the other rather mysterious iron fragments from this complex assemblage in grave 18 except for an angled iron rod which looks very much like one of the rectangular type of handles referred to above.

5.6 Grave furnishings

5.6.1 Coffins

Close study of the graves as features (above, 3.1) has led to the surmise that as many as 25 of the graves, one of them a double burial, may have been coffined. The evidence for this is either the regularity and depth of the grave-cut, occasionally its width, or indications of the movement of the bones of the skeleton during decomposition within a cavity in the grave. There are, however, no items of surviving artefactual evidence that can confidently be associated with a coffin. Traces of iron that might be from coffin nails were noted in the cases of graves 69 and 88, but it is noted that the other evidence for a coffin is slight in the former case. Grave 11 contained two nails at the sides of the grave, and although the shape and regularity of the grave suggest a coffin, in this case the nails are judged to be improbably small for this purpose. Iron nails were found in several further graves, but there is in these cases no demonstrable reason to associate these with a coffin (below, 5.7.4; cf Evison 1994, 24–5).

See also Funerary Beds (6.9.).

5.7 Miscellaneous

There is not a great deal of material remaining which has to be dealt with under a miscellaneous category. The two major classes of finds included here are firstly, found and collected items, such as natural curiosities and Roman antiquities, and secondly, iron nails. There are of course many graves with iron or copper-alloy fragments that although sometimes of recognisable form, such as studs, rods or strips, cannot be identified as having come from a specific type of object. It is not always clear whether an item has been deliberately or accidentally included in the grave, as, for instance, in the case of pieces of fired clay or daub found in grave 3 and grave 18. During excavation it was suspected that particular stones might have been deliberately deposited in graves 38 and 53, but there is no way of confirming this.

5.7.1 Fossils and shells – possible amulets (Graves 18 and 72)

The familiar inclusion of fossil animals and shells in early Anglo-Saxon graves has been discussed by Audrey Meaney under the heading of 'animal amulets' (1981, 113–30). From this site we have a fossil sea urchin from grave 18 and a fragment of mussel shell from grave 72. Fossil sea urchins are not

Table 5.6 Roman coins from Barrington A/Edix Hill

Grave	Context No and Small find number	Coin detail
3	4:17.1	Imperial Roman copper-alloy dupondius of 1st century AD. Might be an issue of the emperor Nero but too worn to allow a certain identification, 8.41g. Lab No 6359-1
3	4:17.2	Small copper-alloy coin of the House of Constantine (AD 324–346). Obv bust of the emperor to r, laureate and cuirrassed. Rev A standard between two soldiers. GLOR IAEXERC ITVS. Too worn to allow a more detailed identfication, 1.32g. Lab No 6359
18	42B:1	Probably an Imperial Roman 3rd century AD copper-alloy coin. Heavily worn and oxidised. Pierced. 2.02g
–	579A:1	Aes of Valentinian I, mint of Siscia, AD 364–367. Obv Diademed and draped bust of the emperor to r DN VALENTINI-ANUS PF AVG. Rev Victory advancing l holding wreath and palm. SECVRITAS-REI PVBLICA. R | F / PTR. Lab No 157
109	683B:6	Copper-alloy centenionalis of the Roman emperor Magnentius, AD 351–353, mint of Trier or Lyons. Obv Bare-headed, draped and cuirrassed bust of the emperor to r DN MAGNEN TIUS PF AVG. Rev The emperor galloping r, spearing kneeling enemy. GLORIA ROMANORVM. 4.87g
–	1000:8	Aes folles of Constantine I the Great, mint of Trier, AD 313–15. Obv Laureate and draped bust of the emperor to r CONSTANTINUS PF AVG. Rev Sol radiate, standing l, raising r, globe in left, chlamys across l shoulder SOLI INVIC-TO COMITI. T-F / PTR. Lab No 152
–	1000:38	Too worn but might be an aes of Gratian with the rev FELICITAS-REI PVBLICAE. Pierced. Lab No 88-89
	1000:220	Too worn and corroded to allow identification. Roman aes from the IV c. Lab No 158
–	1000:234	Aes of Valens, mint of Lugdunum, AD 364–378. Obv Diademed and draped bust of the emperor to r VALEN-S PF AVG. Rev Victory advancing l holding wreath and palm. SECVRITAS-REI PVBLICA. OF | I / LUG P

uncommon as prehistoric and Anglo-Saxon grave goods (Meaney 1981, 117–20). Meaney notes evidence that they may have been regarded as a protection against a lightning strike, or have been associated amuletically with general prosperity. It is also noted that shells such as the mussel shell are particularly associable with coastal sites, and may primarily represent food deposits (Meaney 1981, 127–8). The fragment from grave 72 has been identified as that of a salt-water mussel.

5.7.2 Roman coins (Graves 3, 109, and unstratified) (Table 5.6)

It is not uncommon to find considerable collections of Roman coins on early Anglo-Saxon sites, both settlements and cemeteries (eg Curnow in West 1985, 76–81; Evison 1994, 27, 86–7 and 119). The majority of such coins are later 3rd and 4th century copper-alloy coins, although earlier issues going back to the 1st century are often present too. The range of types recovered corroborates the natural assumption that these coins were found and collected by the Anglo-Saxons and used as objects of value for their metal content (King 1988). Further support for this view is provided by the discovery of two Roman coins together with two broken wrist-clasp halves from the deceased woman's costume in what appears to be a purse group in grave 3 (see above, 5.2.5.1). As has been noted (above, 5.2.3.5), such coins can be perforated for suspension as pendants, but those that are so are a minority of the Roman coins from this site, as is also the case at Great Chesterford and West Stow. Such coins are most frequently found singly in graves, although multiple groups do occur (Evison 1994, 27; Meaney 1981, 213–22). In rare cases there is evidence that coins were adapted for use as weights (Scull 1990, esp 185), but we have no such evidence here. Audrey Meaney found very little positive evidence that the coins were regarded amuletically. The location of single coins on the head or in the hand in several graves at Great Chesterford is convincing evidence that the coins could be used as Charon's obol, but in general such evidence is rare.

Of the recently excavated graves, two, graves 3 and 109, contained unperforated Roman coins, two in the former case (see above) and one in the latter. The coin from grave 109 was located by the upper left leg of Sk683B, near the end of the chatelaine chain.

There are a further four coins amongst the recent finds, three unstratified and one associated with an Iron Age ditch, F579, and there are six unperforated coins without provenance in the 19th century collections.

5.7.3 Bells

The 19th century collections from this site in the Ashmolean Museum include two copper-alloy bells

(MacGregor and Bolick 1993, 256–7). Similar bells have been recorded in two Anglo-Saxon cremation graves, at Little Wilbraham, Cambs, and Spong Hill, Norfolk, cremation 1281 (White 1988, 146–7). The Barrington A bells are of a hemispherical and a pyramidal shape respectively, forms which are matched in turn by the Little Wilbraham and the Spong Hill bells and which are also familiar on Roman sites (White 1988, fig 91.2). The range of functions suggested for these bells in Roman contexts places considerable weight on evidence for ritual use, although functions as diverse as children's playthings and animal bells have been suggested elsewhere (Crummy 1983, 127; Crummy *et al* 1993, 155; Webster, in Manning 1995, 55–7). Similar hemispherical bells are also known from a small number of contemporary Alamannic animal graves (horses and dogs) in southern Germany (Reiß 1994, esp 36–9). With no closed context for the Barrington A specimens, speculation on how and why they came to be part of the artefact assemblage of an Anglo-Saxon burial site is pointless.

5.7.4 Nails

As with all the smaller iron objects, it is impossible to identify nails with certainty in every case. Nails may, however, be represented in up to 24 of the recently excavated graves, a frequency which is a little lower, but still comparable in very broad terms, with the identification of nails in 40 out of 161 inhumation graves at Great Chesterford (Evison 1994, 24–5). Another similarity between these sites is that there is often evidence for only one nail in each grave, but occasional multiples, here up to totals of a possible four (grave 68) or five pieces (grave 17).

Most of the nails from this site are fragmentary, but there is still evidence of considerable variation in size between them, while the evidence for their position in the graves is neither substantial nor consistent. A diversity of original functions for these nails can therefore be assumed, although in respect of these we have clearly passed beyond the limits to our present ability to identify and reconstruct items deposited in early Anglo-Saxon graves. In grave 34 the nails were found in close association with shield studs, and it is therefore likely that they formed part of the shield.

Laboratory examination of the nails confirms this impression of diversity. No organic material is recognisable on the shanks of the nails in the majority of cases, including those from graves 11 and 34 (cf above). In some cases organic material is more or less certainly detected but not identified; where identifications have, tentatively, been suggested we have three cases of textile, two of plant material, and one of possible leather.

The identifiable nails typically have slender, square-sectioned shanks (cf West 1985, fig 242:17–36). Radiographs of the nails from grave 17 indicate that two of these had decorated, presumably inlaid, heads.

5.8 The 19th century and recent finds: a preliminary comparison

While it should seem an easy matter to count up and compare the range of finds from the 19th century collections with those from the recent excavations, several complicating factors have to be taken into account before any attempts to infer the original size, character, and structure of the whole cemetery can be undertaken. This requires reference to the detailed discussion of questions of chronology and social patterning which will be found in the next two chapters. A preliminary synopsis of the data and the problems, however, should serve as both an appropriate conclusion to this chapter and introduction to Chapters 7 and 8.

In certain respects the comparative data are not especially difficult to interpret. There are some classes of artefacts that are markedly more numerous amongst the older finds than amongst the more recent ones: in particular cruciform and small long brooches; silver bracelets and finger rings; and perhaps the metal-bound wooden buckets should be counted here too. Where the recent collections provide larger numbers of a particular artefact-type than the 19th century collections these typically involve humbler and less conspicuous (often iron) objects, such as annular brooches and knives. Indeed, amongst the finds from the recently excavated graves that are suspected of having been robbed in the 19th century four, perhaps five, knives could be identified, while iron nails and other fragments were by far the most common forms of artefact still left in these contexts. It is not, however, particularly easy to accept this explanation in respect of the distinctly higher proportion of shield bosses, bone or antler combs, and ivory rings, amongst the more recent finds. We can note here the retrieval of possible shield boss fragments from two re-excavated, possibly robbed graves (graves 27 and 70) and a comb fragment from a third (grave 109). These involve only small fragments, which would suggest that the major part of these easily recognised artefacts had previously been removed.

In the case of some artefact-types there is an interesting similarity between the numbers represented in the older and newer collections. The total number of applied disc and saucer and cast saucer brooches, for instance, is equal in both groups (eleven), and very close too are the numbers of clasps, spearheads, and pots. Where an artefact-type is represented in only very small numbers it is predictable that it may occur only in one of the two collections. In the case of expensive, high-status and thus typically rare artefacts such as funerary beds or swords, however, this contrast may still be of considerable significance.

There is nevertheless reason to conclude that the

19th century finds represent material from a set of graves that was, in gross terms, richer than that excavated from 1989 to 1991. The total number of brooches in the earlier collections is nearly 10% higher, and the high number of silver bracelets makes a striking impression. A neglect of bone and iron items may explain the relative scarcity of combs and shield bosses in the older collections even if that neglect itself is difficult to account for; otherwise the recent collections are principally richer in the obviously humbler artefact-types. It is indeed likely, then, that the 19th century diggers opened a larger number of graves than were excavated in the recent campaign and certainly more than have been reported by Babington and Wilkinson (Babington 1860; Smith 1868). But we have to be very cautious in any attempts to convert this into figures, and thus to reconstruct the original site in quantitative terms.

The recent excavations identified a total of 115 separate features as graves (one of which was of Iron Age or early Romano-British date). These included several multiple burials, so that, together with some highly fragmented and probably redeposited sets of bones, the skeletal remains of up to 148 individuals buried in the Anglo-Saxon cemetery were represented here. The 25 graves identified in the stratigraphic report as showing evidence of 19th century grave-robbing were associated with the remains of 40 individuals, a very high proportion of skeletal intermixture. There were, moreover, several of the recently excavated graves that had been disturbed and were bare of finds. We do not know whether any of the grave groups recorded in the 19th century came from any of the graves recently re-excavated. We also do not know how much, if any, of the recently recovered unstratified finds, or of the 19th century unstratified finds, had originally been deposited in the graves recently excavated. Thus, even with modern methods of excavation, at this site we can only make a very rough estimate of how many burials the new collection of material represents.

We can take as our base line for such estimates the 107 skeletally identified individuals from the recent excavations that are not associated with graves apparently robbed in the 19th century (excluding the burial in grave 64 which was not fully excavated). We can confidently assume that at least a similar number of burials are represented by the 19th century collections, giving us a figure of 214. If we increase the postulated number of burials excavated in the 19th century by 10% (the proportion by which the total number of brooches in that collection exceeds that from the recent excavations) we reach a nicely rounded figure of 225. No brooches were found in recently excavated graves believed to have been robbed in the 19th century. The figure of 225 can be regarded with confidence as a minimum figure, and in all probability an underestimate of the number of graves in this cemetery from which material has been retrieved to the present date. There is, however, no obvious quantity by which this estimate should be increased to produce a plausible alternative figure.

In addition to this, there is no doubt that a significant number of graves at the site remain unexcavated. It is possible to make a reasonable estimate of the number of Anglo-Saxon graves that would be found in the as yet unexcavated parts of the site by comparing that area with the size of the area already excavated whilst taking into account density of graves. This suggests that about 50% of the site remained unexcavated in the campaigns of 1989–91. Less easily predicted, however, is the level of 19th century interference there may have been in these areas. Altogether though, there should be no question that the total number of graves in this cemetery must originally have been well over 300. This is therefore one of the largest known early Anglo-Saxon inhumation cemeteries, quite possibly on a par with Morning Thorpe, Norfolk, the largest known site of this kind in the Anglian area with *c* 365 inhumation and nine cremation burials (Green *et al* 1987).

Of crucial importance to both the reconstruction and the interpretation of the site is the evidence for zoning within it: evidence, that is, that the burials on the site were not randomly sited so as to produce a homogeneous mix overall but rather that significant zonal concentrations can be found. If, therefore, the 19th century collections were concentrated in an area which only slightly overlaps with the area recently excavated, it is possible that the burials there were altogether of a significantly different character from the more recently excavated ones. We may note, for instance, that, apart from the shears and pin-beaters, no finds characteristic of the late 6th or 7th centuries are amongst the 19th century collections, although we have such material from the recent collections and indeed graves datable to this phase tend to cluster in a particular zone (see Chapter 7). It will also be shown that there is evidence for the clustering of artefact-types within sets of grave groups, so that it is possible that the strikingly high number of small long and cruciform brooches in the older collections represent the opening of an area in which these were specially concentrated (see Chapter 8). The two bed-burials excavated recently represent the most conspicuously furnished graves of the later phase; the two swords in the 19th century collections are not closely datable, but they *might* represent richer male graves of the earlier phase than those recorded in any of the detailed excavation reports. Evidence has been presented (above, 1.3) that the majority of the 19th century coprolite digging affected the southern end of the site, and that this is the direction in which the sword grave recorded by Babington (1860) apparently lay. There is finally the teasing problem of whether the three burnt artefacts and some of the unstratified Anglo-Saxon potsherds could represent a small group of cremation burials somewhere at this site, as at the nearby site of Haslingfield, which has evidence of a small group of cremations beside an unknown but certainly much larger number of inhumations (below, 9.3.1). These issues are examined in more detail in the following pages.

Chapter 6 Technical analyses and reconstructions

6.1 Technological analyses: introduction and overview

The drawing up of a project design for the post-excavation analysis of material from the Anglo-Saxon cemetery on Edix Hill in accordance with English Heritage MAP–2 procedures provided a welcome opportunity to seek to develop the range and use of laboratory based technological analysis of early Anglo-Saxon artefacts. Interest in the study of early Anglo-Saxon technology, and experience in its analysis have grown in pace with improvements in techniques and facilities for investigations of this kind over the past two decades. Relatively new initiatives undertaken were the analysis of the composition and structure of the glass beads, and the detailed study of punchmarks found on silver and copper-alloy artefacts. Both projects yielded clear results: in the case of the glass beads it appears that a single source of glass is to be postulated, while the number of metalworking punches available seems to have been copious. The analysis of ferrous technology has also provided a useful set of data from which to launch further research. The funerary beds (below, 6.9) naturally attracted special attention, with close analysis and technical expertise identifying both the complexity and probable differences of the two structures represented at Edix Hill. These results can then be compared with the other evidence for woodwork, the use of organic materials, textiles and ironwork, reported below. It is recognised, however, that the range of analyses was not comprehensive, or at least not equally detailed in all cases, and that within the full range of excavated material, pottery, antler, and worked bone were not given comparable attention. Leatherwork, meanwhile, can sometimes be identified, but defies close analysis.

The results reported in the series of specialist reports below contain much food for thought, although no truly unexpected revelations. Perhaps the most striking common thread that emerges is the variability within the materials identified by laboratory analyses. In one way this seems to imply a certain richness of supply, mirrored by the large number of decorative punches apparently available for copper-alloy and silver artefacts. Yet at the same time the random availability of metals, and perhaps an inability to exercise very much control over the material, appear to be most markedly in evidence in respect of the very copper alloys these punches were used on. Relatively high quality steel was used to make a majority of the knives analysed, and the types of wood used for different forms of wooden vessels here and at other contemporary sites are generally similar. In contrast to this, however, we have to note the surprisingly poor relative quality of the iron used for spearheads, and the occurrence of three different types of wood in shield boards. From another perspective, then, the evidence identified gives the impression of a haphazard use of several materials. In some cases this may simply not have mattered, so that the craftsmen were indifferent to exactly what they used. It seems altogether more likely, however, that the producers of these artefacts usually had to make use of whatever material was available, in the form, for instance, of timber of workable quality, recyclable metalwork (copper alloy, brass, pewter, etc), or glass cullet. If it was possible to exercise greater selectivity and control in respect of different qualities of iron alloy, as implied by the analysis of the ironwork, then this difference between iron and other materials would be worthy of more detailed research in future.

As yet we can usually do little more than make intelligent guesses at the identity of those who produced this craftwork, and where they lived and worked. It is entirely reasonable to assume some craft production within the local community represented by the graves of a cemetery such as Edix Hill. The direct evidence of productive work is, as has been noted, extremely sparse, and the presence of the few items of such evidence as there is amongst the grave goods is distorted by chronological and probably symbolic factors too (see above, 5.6). The evidence of imported dress-accessories whose origins can be specified – in, for instance, Kent, or on the continent – is evidence of the range over which the distribution of specialised products could extend. It is rational to infer that there were probably different distributional ranges for different products, some more local, others covering greater distances. As yet we cannot tell how much at the site would truly have been locally produced and how much 'imported', from sources either near or far.

The information supplied by technological analyses such as these can be put to several different uses: a range of significance which itself testifies to the potential importance of such investigations. Nevertheless – or because of that – it seems appropriate to append some critical reflections upon the state and status of technological analysis in early Anglo-Saxon archaeology to this section of the report. This branch of the subject suffers from a general lack of integration within itself, in terms of its own consistency, and of integration with the wider field of early Anglo-Saxon archaeology, in terms of correlation to general issues of research and debate. It is difficult for results of technological analyses at present to do much more than to add to an undigested mixture of data. In most cases we have reports which offer contributions to a

detailed descriptive history of technology. There are also some attempts to interpret small sets of data in relation to subjects of wider archaeological concern, with topics such as: the possible correlation between technology and typology or chronology; the possible identification of particular producers (single or grouped); and the economic and social implications of the distribution of their products. The interpretation and evaluation of the level of technology represented by these finds in broad historical terms has still to be properly defined as a research topic, let alone adequately investigated.

In the face of the diversity and inconsistency in materials and craftwork we find in this data, it is difficult to see how a strategy of sampling for technological analysis from the finds retrieved from early Anglo-Saxon cemeteries is likely, in the future, to do much more than confirm what we already know. By such a process a few lucky hits upon artefacts that can in some way be linked at source – by, for instance, having been marked with the same punch, or consisting of chemically identical alloys – will no doubt be made. Eventually a cumulative database of such links from a large series of samples should support statistical inferences of the predictable frequency and range of particular types of source-linked or technologically specially related artefacts. A bolder, simpler, and more reliable approach, however (though at the same time more expensive), would be to undertake comprehensive analyses of all the material from a site and its region, to see how many links can be made (if any). It seems unlikely that any proposal for such a project could be seriously evaluated until specialist Anglo-Saxon archaeology on the one hand, and archaeological science on the other, form a more coherent view of their aims and objectives in respect of technological analyses. This is an issue that requires consideration, not only in academic circles, but in administrative circles also.

6.2 Conservation
by Celia Honeycombe

During the excavations at Barrington conservation advice was given by staff from the Institute of Archaeology, London University and until 1992 the initial investigative conservation of finds was undertaken by Margot Wright and Kathy Tubb and students at the conservation laboratories of the Institute. It soon became apparent that the large number of artefacts required the attention of a local conservator to x-radiograph and clean the metalwork and to advise on care of artefacts in storage, in order to increase the research potential of this material and therefore Cambridgeshire County Council appointed a conservator in January 1992.

In the past four years, the x-radiography of all the Barrington ironwork and copper-alloy objects has been completed. The main problem with the Barrington metalwork was the occurrence of corrosion. This was partially caused in post-excavation by inadequate packing and failure to maintain the desiccated storage environment, originally created in seal-fresh polyethylene boxes using silica gel. Bronze disease, visible as small pits containing pale green powder, was eroding the surfaces of the copper-alloys. The ironwork was flaking which left diminished profiles of any original surfaces that had survived in the corrosion crusts underneath earthy accretions. At the start, therefore, it was essential to overhaul the storage system and to train field-unit personnel in the necessity of making regular box checks to ensure that the micro-climate conditions of 20% RH (relative humidity) were maintained. After this priority was given to the immediate x-radiography and stabilisation treatment of very deteriorated artefacts.

It is difficult to judge the extent to which the amount of active corrosion found on the metalwork was due to unsuitable post-excavation storage conditions. Material from Edix Hill excavated 100 years ago and now held at the Cambridge University Museum of Archaeology and Anthropology is extremely well preserved with robust original surfaces. It is possible that the presence of fertilisers and other chemical agents in modern soils has contributed to the more advanced decay observed in the recently excavated copper-alloy and iron artefacts from Edix Hill.

As the scale of research on the Edix Hill material increased and time to work on it became limited, it was necessary to have the remaining metalwork treated at the Ancient Monuments Laboratories in London by Irit Narkiss, Alison Draper and Isabel Brown, and by Margaret Brooks at Salisbury. The transport of fragile material has thus been kept to a minimum and the cooperation of everyone has helped to increase the level of information obtained from the finds.

Under ideal conditions, a major excavation like Edix Hill should have had available more local conservation attention and advice at the beginning, in order to avoid the post-excavation problems which, in many cases, have made conservation treatments both longer and more complex.

6.3 Organic material associated with the metalwork
by Jacqui Watson

The material examined in this report only covers the objects excavated between 1988 and 1991, and does not include items from 19th century excavations and recent metal-detecting finds which are currently held at the Cambridge University Museum of Archaeology and Anthropology (CUMAA), the Ashmolean Museum, Oxford, and the British Museum. Leather species were identified by Glynis Edwards and XRF analysis was undertaken by Catherine Mortimer and Malcolm Ward.

In damp conditions most metals will corrode and

the resulting corrosion products will stain any adjacent organic material. When buried, organic material impregnated with metal salts cannot readily be broken down by soil micro-organisms, and over long periods this material will be chemically altered by these minerals (Keepax 1975). Mineral-preserved organic material is more common on ironwork as this metal corrodes more rapidly than copper, lead or silver-alloys. Iron-preserved organic material is heavily impregnated with corrosion, and in some cases the whole structure has been replaced by iron salts while the organic component has dissolved away. On the other hand organic material preserved by copper corrosion still resembles the original material, which is sometimes stained green. Wood has been preserved by both iron and copper, with varying degrees of replacement. Only wood in contact with metal corrosion products has been preserved at Edix Hill and as a result many types of wooden object, such as bowls, may be under represented. Hard animal tissue such as horn is poorly preserved and is only seen preserved in iron-corrosion products. Bone and antler, on the other hand, are well preserved. At Edix Hill some of the iron-corrosion products resemble leather, but many of the attributions of this material are at times rather tenuous. Deposits of calcite lens are frequently found in amongst the organic material, and when present these have made cleaning and identification difficult.

Fresh and waterlogged organic materials can be identified by examining their microscopic structures and this is also true for mineral-preserved examples. It has been possible to distinguish between most materials such as horn, bone, wood, leather, and textile with the aid of a hand lens or low-powered incident light microscope. For the most part, identification of wood species was done by observing either thin sections of lightly coated material or gold-coated specimens in the Scanning Electron Microscope (Watson 1988). Where the latter technique has been used a sample number is quoted in the AML Report (Watson forthcoming) and archive catalogue, and the samples have been retained for future study if required. It should be noted that willow and poplar cannot be reliably distinguished microscopically, and for the purposes of this report are regarded as one species. Leather is normally identified by the hair follicle patterns (or grain pattern) on the surface, but it can also be ascertained from the arrangement of the collagen bundles when viewed in cross section (Cameron l991). It was only possible to identify a few fragments of the mineral-preserved leather in this way.

A large range of organic materials were recognised and these are best discussed by object-types, along with any comments on reconstruction. All the materials recorded were readily available in Anglo-Saxon Britain and Europe, and it has not been possible to isolate any imported items on the basis of species identification. In addition to identifying the materials used it has also been possible to suggest the reconstruction of some of the wooden objects (Watson and Edwards l990). Most noteworthy are the beds, which are discussed in a separate report (below, 6.9).

6.3.1 Knives

Of the 55 knives examined, 52 have horn handles and on 51 are the remains of leather sheaths. In addition five have textile remains, which probably relate to garments. The extent of the handles can clearly be seen on many of the knives (graves 2, 6, 7, 12, and 18), normally extending on to the blade and covering the shoulder; in the case of the knife from grave 2 the handle is positioned 4mm below the shoulder of the blade. Most of the leather sheaths are poorly preserved and no construction details have been observed with the possible exception of two examples which may have the remains of stitched edges. Grave 13 Δ30 appears to have the seam along the back of the blade and grave 93 Δ20 may have the seam along the blade edge. In one instance (grave 51 Δ8) the sheath extends over and halfway up the length of the horn handle. Sheaths and scabbards which encapsulate most or even all of the handle have been recorded at West Heslerton, North Yorkshire, and Mucking, Essex. This is a fashion which continued into the later medieval periods and is well illustrated in Cowgill *et al* (1987). One knife (grave 34 Δ2) may have an animal-pelt rather than a leather sheath.

6.3.2 Spears

All thirteen spearheads examined from the site had wood remains in their sockets. The wood species represented are ash (three), (one of which was made from mature timber), hazel (five), and the remainder were not identifiable (five). Both ash and hazel were commonly used for spear shafts and are well documented in Anglo-Saxon cemeteries.

Leather is preserved on the blade of one spearhead (grave 66 Δ1); as the shield was placed at the waist this fragment may be the remains of a covering or a carrying strap. Such straps have been noted on spearheads and ferrules at West Heslerton, North Yorkshire, where the leather is clearly a strap wrapped round the socket unlike this example.

6.3.3 Shields

Detailed examination of the shield fittings has made it possible to identify the wooden elements, the type of grip construction and any other organic parts (Watson 1994). The main details are presented in Table 6.1.

The shield boards are mostly made from alder (five), followed by willow or poplar (three, possibly four) and lime (three), with one of beech. Where identified the rebated grips were of the same species as the boards, except for grave 33 where the shield board was made from lime and the grip of willow or

Table 6.1 Wood elements associated with shield fittings

Grave	Context and SF No	Group	Wood	Leather	Textile	Straw	Board details	Diam	Depth rim	Depth Stud	Rebated grip	Cut-out grip
2	3.3:2	3?	x	x			Beech TLS. Grip probably RLS. Leather on the front 3.8mm, back *c* 3mm. Wooden portion of the board is tapered on the stud	max. *c* 60cm		9.1–11.9mm		?
7	11:02	3	x	x			Willow/poplar TLS					
9	13.2:2–5	U/i	x	x			*Willow/poplar TLS. Leather on the front 2.0mm, back 3.6mm	min *c* 36cm		12.2mm		
12	19:03	6	x	x			Possibly lime RLS		8.6–9.9mm grip 12.2mm			x
29	58.1:1,3	1.1	x	x	x	x	Board alder TLS, grip alder. Leather on the front *c* 2mm, back <2mm. Outside of the grip has possible pelt, feathers and binding strips	min *c* 38cm	8.3–9.4mm		x	
33	112:2,3	3	x	x			Shield board probably lime TLS, grip willow/poplar TLS	min *c* 39cm	>10.2mm		x	
34	117:1,3–6	3	x	x			Alder TLS, both at rim and on stud. Leather on the front <2mm, back 4.4mm	min *c* 38cm	?6.5mm			
46	146:4–5, 7–15	3	x	x			* Probably alder RLS. Leather on front under boss 2.3mm, at stud <1mm, back 2–2.8mm. Leather strips on grip may be part of carrying strap	?*c* 54cm	12.3mm	14.4mm		x
48	148:2	3	x	x			*Alder grip and board. The wooden part of the grip is oval in cross section with leather preserved on both sides		8–9.6mm		x	
51	151:1	3	x	x		x	*Lime. Leather on front *c* 2mm, back *c* 1mm	min *c* 40cm	9.9mm			x
66	322:6–9,11	U/i	x	x		x	5 studs, but no boss. Wood probably willow/poplar. Leather on front <1mm, back 3.2mm	min *c* 40cm		10–11mm		
70	362:2,3	U/i	x	x			*Alder RLS	?min *c* 41cm	6.7mm			
77	423:5	U/i		x			Just a stud preserved with oak TLS on the front, not part of shield. Leather *c* 2mm					
88	453	3	x	x	x		*Willow/poplar TLS. Leather on the front <1mm, back 3.2mm. Grip has leather on both sides, on the inside as a covering to ?padding, and on outside as a band bound with plyed cord	min *c* 38cm	10.0mm			x

poplar. It is unusual to have such a dominance of alder shield boards in this area, and recent data indicate that it was more commonly used in Kent and the south-west. The size of the original shields can only be estimated. The distance of the studs from the central part of the boss gives the minimum diameter, and the maximum diameter can be assumed from the available space in the grave. On this basis most of the shields must have been between 0.4–0.6m in diameter. They would probably have been made from two or three boards, but there is no indication on any of the shield fittings of a joint. On the shield studs from grave 2 there is evidence that the wooden shield board was trimmed and tapered towards the edge, as in all probability was the normal construction of shields.

All the shield boards were leather-covered, and in all cases where the evidence survives leather was present on both the front and back with the metal fittings applied afterwards. The thickness of the leather varies a great deal, between less than 1mm to nearly 4mm, and is often a different thickness on the front and back surfaces which may indicate the use of different types of skin possibly even from different animals. There is no evidence to suggest how the leather was attached to the shield boards: the use of glues or shrink fitting cannot be determined. Lechlade had three examples of shields covered with leather that had been shrunk and hardened by heat treating – *cuir boulli* (Cameron 1991). The leather surfaces are essential if the shield was to hold together during combat, and their longevity would be greatly increased if the leather had been heat hardened. Unfortunately the poor preservation of leather at Edix Hill would most likely preclude an SEM study to confirm the use of such treatments.

The complete thickness of the shield boards varies; under the boss rim it is between 6.7 and 12.3mm, and at the position of the outer shield studs 9 –14.4mm. Only on one example (grave 46) is there evidence for both the depth at boss (12.3mm) and stud (14.4mm). This difference may point to the boss being recessed into the front of the board but it is so slight that this could be due to normal variation during trimming of the board.

All the shields were examined to see how the grips were attached based on the Dickinson and Härke typology (1992), and there appear to be four, possibly five of the cut-out type and three examples where the wooden grip was rebated into the front of the shield board. The rebated grip from grave 48 is made from a piece of wood with an oval cross-section and was covered with leather before attachment of the iron reinforcement. Two of the shield grips were padded and bound with plyed cord (grave 88) or leather binding strips (grave 29). On the underside of the grip from grave 29 were fragments of an animal pelt and feathers which probably belonged to some other object in the grave.

There are two examples of possible carrying straps for shields from this cemetery, and they were apparently attached in different ways. From grave 46 there are leather strips wrapped round the grip which give the impression of a strap pulled through the grip. From the grain pattern they appear to be made of cattle hide, and they are associated with a small buckle which is attached to a leather strap of the same width and thickness positioned at the shield rim. The shield from grave 88 has small rivets near the terminals of the grip, which are not part of the grip construction, so could have been used to attach a carrying strap.

6.3.4 Vessels

Copper-alloy fittings from two wooden vessels in graves 18 and 66 have been examined. The grain represented on these fittings suggests that they were originally mounted on lathe turned vessels (Morris 1982). Some of the staples are probably repairs as they are usually attached to wood with a cross section or tangential surface. These are the weakest areas on a lathe-turned vessel.

The small wooden vessel from grave 18 (Δ1) was made from maple and found inside the large iron-bound bucket. The vessel from grave 66 (Δ3) is made from maple or birch. The fragments suggest that it had an external diameter at the rim of around 130mm, with the walls 3.5–5.9mm thick, increasing to 8.9mm towards the base.

A stave-built container from grave 9 is represented by a copper-alloy mount with a fragment of willow or poplar, the grain running vertically and with a radial surface. A fragment of iron rivet (SFΔ8) may also belong to this object, and would give the thickness of the sides as 8.5mm. There are insufficient fittings to suggest that this was another bucket, as there are no bands or a handle. Possibly the object was more like a tankard (Earwood 1993) with wooden bands holding it together. Tankards with copper-alloy mounts are common from the Iron Age and Roman period, but as far as I am aware none has been recognised in Anglo-Saxon graves from Britain. Tankards have been recovered and reconstructed from the waterlogged Merovingian cemetery at Oberflacht, Germany (Schiek 1992; Paulsen 1992), which may give an indication of what this object originally looked like.

6.3.5 Buckets

The bucket from grave 18 is an iron-bound construction with tangentially cut oak staves. Grave 88 contained a copper-alloy-bound bucket with yew staves. On the x-radiograph it can be seen that the staves are made from slow grown wood, with around 10–12 rings per centimetre, and cut with a radial surface. The use of oak staves in iron bound-buckets and yew for copper-alloy-bound ones is very common in Anglo-Saxon Britain.

6.3.6 Boxes

Just two wooden boxes have been identified at Edix Hill, from graves 18 and 109. Neither had enough metal fittings with preserved wood to attempt a full reconstruction. The box in grave 18 has a drop handle and a lock, from which it was possible to establish that it had been made from ash. The front board had a tangential surface and a minimum thickness of 15mm. The box contained a composite antler comb and other small items. In grave 109 the box is represented only by a broken drop handle and two parts of a locking mechanism. There is insufficient organic material preserved on them to identify the wood species or suggest the construction except that the lid was 11.9mm thick. This box contained or had been placed on top of a pot, and is similar to a box containing two glass palm cups from Boss Hall, Ipswich (C Scull pers comm).

Most Anglo-Saxon boxes had sliding lids like the one illustrated from Dover, Buckland (Evison 1987) and dowelled joints, the metal fittings being on the whole decorative rather than functional. As there are few metal fittings on these two boxes they could have been of a similar construction, especially as there are no hinges or any attachment that could serve as such.

6.3.7 Purse groups

There are nine possible purse groups from Barrington and they all belong with female burials (graves 3, 13, 19, 60, 69, 78, 79, 83, and 106). It is assumed that the purses were all made of leather, but as leather is poorly preserved at Edix Hill it has not been possible to suggest the construction of any of them.

A total of three are associated with ivory purse rings (graves 13, 69, and 79) and they may be of a similar type to one found in grave 906 at West Heslerton, North Yorkshire (Watson and Edwards 1990, 100–1). In this case the ivory purse ring was enclosed in leather and would not have been visible when in use. Both the grave 79 example and the West Heslerton one are associated with copper-alloy tag ends which may have been used to attach the bag to a belt and/or to close the bag (see 6.10 below). The West Heslerton purse also contained a knife, a bundle of iron latch lifters tied together, a set of copper-alloy girdle hangers and folded pieces of textile – unfortunately the level of organic preservation at Edix Hill precludes this type of detail. The purse in grave 69 is associated with a copper-alloy counter-plate to an iron loop mounted on antler, which may be some form of fastener.

Another four purse groups are mainly identified as groups of iron latch lifters, often with textile and leather preserved on them. In grave 3 there is an iron belt set that was probably a purse, on the evidence of its contents. These appear to have been mounted on leather and textile, and according to M Brooks (archive report) may have been trimmed with a fringe. The purse in grave 78 is associated with a set of copper-alloy tags and buckle which may be part of a strap or be part of a closure. The purse from grave 83 is presumed to be made from textile and is associated with an antler ring. In grave 106 the latch lifters are associated with a buckle and stud mounted on antler, which may be part of a complex fastener for the purse.

The purses from the Phase II graves 19 and 60 are rather poorly preserved, with only textile recorded on the rings and latch lifters.

6.3.8 Buckles

A total of 50 buckles, of iron and copper-alloy, have been examined and 40 were found to have the remains of leather belts or straps. Of the buckles two of the buckles were mounted on antler (graves 69 Δ11 and 106 Δ146/7) and it is most likely that they were fastenings for the purses in these two graves rather than belt buckles. Textile traces, which were probably related to garments, were found on 29 buckles.

Leather, as stated earlier, is poorly preserved at Edix Hill and there are few examples where one can suggest the species of animal it came from. The iron counter plate from the belt in grave 3 was mounted on what was probably pigskin. It may be possible to identify two other examples: the buckle set in grave 79 (Δ143) has a possible grain pattern, the one from grave 63 (Δ2) has two thicknesses of leather preserved on it with the collagen structure intact. The original thickness of the leather can be indicative of the species in that leather more than 4mm thick is usually from cattle. Unfortunately thinner pieces can be fashioned from split skins as well as thin-skinned animals so these could be cattle, calf, pigskin, deer, sheep, goat or other species. The buckles on which it has been possible to measure the thickness of the skins are presented in Table 6.2.

Many of the belt sets are made from contrasting metals, presumably for decorative effect. In some cases this is just the use of contrast rivets on the counter plate, such as three copper-alloy ones on an iron plate (grave 97 Δ2), silvered copper-alloy rivets on a copper-alloy plate (grave 36 Δ4), or silver-headed iron studs (grave 36 Δ7 and grave 83 Δ2 and Δ3). Two of the iron buckle loops have traces of inlay. The buckle from grave 13 (Δ44) was inlaid with silver, while the buckle loop among the unstratified finds (U/S 1000 Δ14) was not cleaned but inlaid lines were visible on the x-radiograph. Two other buckles were found to be tinned (grave 29 Δ17) or to be a high-tin copper alloy (grave 78 Δ4).

6.3.9 Weaving batten

The weaving batten is in fact a trimmed-down sword. The organic additions are poorly preserved, but there

Table 6.2 Thickness of leather associated with belt fittings

Thickness of leather	Grave Number	Belt fitting: context and small find number
<2mm	78	424:4
2–3mm	13	20A:2
	47	147:3
	97	551:2
3–4mm	29	58B:17
	36	125:4
	36	125:7
	84	440A:14
4mm	12	20B:44
>6mm	39	128:6

is evidence for the original hilt and a covering for the blade.

The hilt appears to be made from three sections of horn which correspond to the upper and lower guards, and the grip sections (Bone 1989). These can easily be distinguished as the grain direction of the horn sections are aligned differently, and slight gaps between them have been filled with iron corrosion which now appears as a raised line. Both the upper and lower guard sections are made from horn with grain perpendicular to the axis of the tang, and are 11.3mm and 13.1mm respectively. The lower guard fits over the top of the blade by 6.5mm to provide a firm seating for the entire hilt. The horn which makes up the grip section is 92.2mm in length with the grain parallel to the tang. The total length of the organic components is 116.6mm.

Leather is preserved on both sides of the blade with the grain side outermost, and this may be the remains of a leather scabbard/sheath although there is no evidence for its construction. The leather is mainly preserved as a magnetite layer, and is just over 1mm thick but this is unlikely to have been its original thickness. Over the leather, on both sides of the blade, are areas of very degraded textile which may belong to the covering on the bed. There is no indication that this blade covering had a wooden stiffener or a fleece lining which means it is not like a typical sword scabbard and is unlikely to be the original scabbard. Single-piece leather sheaths are common on 7th century saxes, and the blade covering for this weaving batten may be of a similar type.

6.4 Textiles associated with metalwork by Elisabeth Crowfoot

(Fibre analysis H M Appleyard, FTI and other organic analysis by Jacqui Watson, English Heritage).

Excavations at Barrington by local enthusiasts in the two cemeteries, Barrington A and B, and part of the adjoining cemetery at Haslingfield, produced a handsome collection of metal grave goods, particularly brooches, of the 6th to 7th centuries. These are now distributed between several museums, the largest collection in the Cambridge University Museum of Archaeology and Anthropology, other smaller groups in the Ashmolean Museum, Oxford, and the Anglo-Saxon Department of the British Museum, London. The pair to one brooch in the Cambridge collection is in the Peabody Collection at Harvard University, USA (Table 6.3).

The textile evidence on these as usual comes very largely from 'replacements', on areas in close contact with the metal, whose oxides have replaced the textile fibres. In some cases this mineralisation leaves a clear positive cast of the fabric, in which the spin direction of the threads, weave, thread count in warp and weft, and even details of pattern can be seen. Objects from these collections, briefly examined in the 1950s, were rechecked recently, and were often still found to be in better condition than those from the 1989–91 excavations, which have suffered years of soil disturbance and erosion by ploughing.

Cambridge clay has unfortunate characteristics. Described as 'either porridge or cement', it surrounds small objects and sets in a cement-like coating, difficult to remove without damage to any fragile textile cast below, though it seems to be responsible in a few cases for the survival of vegetable fibre, flax. The only well-preserved textile fragment from the early excavations previously published is a fine, still-flexible scrap of undyed white flax in a broken diamond (crystal) twill weave, studied at Cambridge by the late G M Crowfoot (1951, 26–28), but identifications of vegetable fibre, probably flax, were made by H M Appleyard on recently excavated material from Edix Hill (belt buckles from graves 9 and 78, and a latch lifter from grave 18). The recent availability of the Scanning Electron Microscope (SEM) at the Ancient Monuments Laboratory raised hopes that further fibre identifications on replaced material could be made, but results were disappointing, owing to the difficulty of obtaining clear enough samples, though wool was identified in a few cases (Watson archive report). No samples suitable for dye testing were found.

In the Edix Hill excavations the survival of

Table 6.3 Catalogue of textiles from the 19th century excavations

Ref No	Object	Position on object	Measurement	Fibre	Spin	Weave	Thread count	Comments
GMC Textile in the Saxon period PCAS XLIV 1951 30–32			30x10	flax (G O Searle)	Z/Z	broken diamond twill	16–18/16–18	variable spin both systems
Barrington A	*Cambridge University Museum of Archaeology & Anthropology*							
83, CAS 517	Small long brooch	all along pin and round head	11x7, 7x5	partly replaced	Z/?	tablet, 4–hole	*c* 10/10	Z cords, 18mm long, either side of pin; cords 1mm thick
1905. 17, 18	Small long brooches	round pin heads, and on pin of largest	–	replaced	Z, S	threads	–	?bead threads
TCLC 1914	Openwork disc brooch	round pin head	–	?vegetable fibre (WIRA)	Z	threads	–	?bead threads
34.852 (a)	Silver buckle,	–	15x11	replaced	Z/Z	twill	est 14/14	surface
	shield boss,	–	–	replaced	Z	threads	–	deteriorated.
	bridle A							–
(Case)	Pair, trefoil-headed small long brooches	one, pin head	–	replaced	Z/Z	twill	–	–
TCLC (ACR pl. XXX)	Square-headed brooch	pin head	–	replaced	Z/S	?	–	weave indecipherable
49	Pair small long brooches	a) pin head	–	unidentified (WIRA)	Z	threads	–	–
		b) pin head	–	replaced	Z/Z	?tabby	–	–
50, 109	Pair small long brooches	50 back , pin head	–	unidentified (WIRA)	Z	threads	–	coarse
			–	replaced	Z/Z	twill	–	–
		fragment 109 pinhead	–	replaced	Z/Z	twill	–	fairly coarse
Conybeare Coll	Two small long broches	larger, pin	–	replaced	Z/?	?tabby	6/3 on 2.5mm	other system
		smaller, mass	20x20	replaced	-	-	–	hidden
		round pin under catch		replaced	Z, S ply	?tablet cords	–	deteriorated
Conybeare Coll	Pair disc brooches	a) (marked S of river) pin catch	*c* 8x4 –	replaced replaced	Z/Z Z ply	twill ?tablet weave	*c* 12/12 –	– long Z ply
		on pinhead b) on pinhead	*c* 10x5	replaced	Z	tablet cords	8/12(4 on 5mm)	threads chevrons, i.e. threaded right and left
1905.19, 20	Pair small long brooches	19	–	replaced	Z , S	threads	–	–
		20	–	replaced	Z/S	?twill	–	fine threads
	Applied brooch	back, pin head	–	replaced	Z/S	?	–	fairly fine
Redfern Coll.	Three small long brooches	a) pin hasp	10x9	replaced	Z/Z	tabby	est 10/10	
		pin head,	–	deteriorated	Z/Z	tabby	–	same weave
		large area edge	15x3.5	?wool (WIRA)	Z	tablet weave	est 23/12	8 cords preserved, ?edge border on tabby
TCLC Grave 2	Small long brooch	(one of pair)	–	–	Z	threads	–	–
110	Small long brooch	impression	15x5	impression	Z/-	twill or tablet weave	*c* 10/-	?cords “chevrons”
61.D.8.C	Annular brooch	on back	–	replaced	Z, S ply	threads	–	–
61.D.9.C	Fe Knife	fragments, best	*c* 5x10	replaced	Z/Z	tabby	-	preservative, count impossible
Barrington B	*Cambridge University Museum of Archaeology & Anthropology*							
34.801	Pair gilded disc	a) back	–	replaced	Z	threads	–	–
	brooches	b) back	–	deteriorated (WIRA)	Z, S	?fringe	–	coarse, ?unravelled
34.820	Pair small long brooches	–	–	replaced	Z/S	twill	–	–
34.822	Pair small long	a) pin head	–	replaced	Z	threads	–	–
	brooches	b) pin head	–	replaced	Z, S	twill	–	surface damaged
34.823	Small long brooch	back, round head of pin	5x5	replaced	Z/S	broken diamond twill	–	surface too damaged for count
34.824	Pair to 34.823	pin head	–	–	S, Z	threads	–	
34.825	Pair small long	a) back	11x9	replaced	Z/Z	2/2 twill	12/10 (6/5	surface poor
	brooches	b) back	–	traces	Z/Z	twill	5mm) -	similar
34.827	Small long brooch	back, round pin head	9x5	replaced	Z/Z	?twill	8-9/- (5mm)	deteriorated, medium grade

Table 6.3 Catalogue of textiles from the 19th century excavations (*cont.*)

Ref No	Object	Position on object	Measurement	Fibre	Spin	Weave	Thread count	Comments
34.828	Small cruciform brooch	back	–	replaced	S, Z	?fringe	–	long threads
34.831	Small long brooch	back of pin head	12x6	replaced	Z/Z	twill	est 8/6 (5mm)	not clear
34.833	Small disc brooch (pair)	b) back, round head and along pin	9x8	replaced	Z/Z	tabby	16/12 (8/6 5mm)	clear
		on other side of pin	–	replaced	–	?twill	–	longer threads
34.854	c) Buckle	back, fragments	7x8	replaced	Z/Z	2/1 (three shed) twill	*c* 18/14 (7/9 5mm)	fine threads
34.855	–	traces	–	replaced	Z/Z	?tabby	–	fine
Grave 25	Small long brooch	back, pin	6x5	replaced	Z/Z	tabby	7/7 5mm	–
Grave 42	Disc brooch (pair)	on front	16x12	replaced	Z/Z	tabby	16/12	paired threads in middle ?broken warp
Grave 55	Pair small long brooches	traces, long threads	–	replaced	Z/-	?fringe or tablet cords	–	–
Grave 79	Pair small long brooches	a) two areas,	17x10	?vegetable	Z/Z	twill	est 14/12	not regular 2/2,
		on pin catch	20x13	(WIRA)	Z/Z	twill	–	?diamond
		on head of pin	10x3			tubular	on 13 warps	broken threads
		(broken away	8x4		Z/Z	selvedge	–	probably same
		b) on pin catch	–			twill		weave with
		under catch	–		Z	tubular	–	selvedge
		round head of pin				selvedge threads		same weave threads knot, ?beads
Grave 80	Pair small long brooches	a) back, pin head	10x4	replaced & ?vegetable (WIRA)	Z, S ply	?tablet cords	12/12	coarse, ?cords, lying side by side
Grave 82	Large cruciform brooch	– back, pin head	–	replaced	Z/S	twill	–	deteriorated
	Small cruciform brooch		–	replaced	S, Z ply	thread	–	?beads
Grave 85	Pair small long brooches	a) pin head	18x20	replaced	Z/	twill	–	
			length: 7mm	replaced	Z	tablet border	–	strong lines
		b) head of pin		replaced	Z	tablet border	–	cords
								fine threads, on twill
Grave 97	Small long brooches	a) larger; back	25x18	replaced	Z/Z	twill	–	
		of pin, lump	25x20	replaced	Z/Z	twill	–	in folds
		b) smaller; similar						
Grave 107	Annular brooch	back	3.5x1.5	unidentified	Z, S	tablet cords or plait?	–	?undyed, off white
		under above	–	unidentified	Z	threads	–	(meeting chevrons) brown
Grave 108	Large gilded disc brooch (pair)	back, small areas, best	5x3	replaced	Z/Z	twill	8/5 threads	–
Grave 110	Pair cruciform brooches	a) pin head	–	replaced	Z, S ply	?tablet cords	–	
		catch and back	–	replaced	-	–	–	traces leather
		b) pin head	–	replaced	Z/S	?twill	–	or sheepskin medium grade
Peabody Coll	Pair brooches, trefoil-heads	round pin heads	–	replaced	Z	threads	–	–
34.826	Trefoil-headed brooch	b) on pin head (The pair to this brooch is in the Peabody Collection, Harvard)	–	replaced	Z/Z	–	–	deteriorated
Haslingfield	*Cambridge University Museum of Archaeology & Anthropology*							
H.1	Pair small long brooches	round pin heads on both	–	replaced	Z	threads	–	–
H2	Small long brooch	pin head	–	replaced	Z, S	?weave not clear	–	threads fine
H3	Disc brooch (with wrist-clasps)	traces both surfaces	–	replaced	S ply	threads	–	–

Table 6.3 Catalogue of textiles from the 19th century excavations (*cont.*)

Ref No	Object	Position on object	Measurement	Fibre	Spin	Weave	Thread count	Comments
H4	Pair small long brooches	a) back, traces b) lump with traces, on pin head	– –	replaced replaced	Z/Z Z	?tabby threads	– –	
H5	Pair small long brooches	on one, back of pin head, and area	15x12 15x5	replaced replaced	Z/Z Z, S ply	twill threads - ?tablet weave	6 cords on 5mm	
H6	Pair small long brooches	a) over pin head remains of weave	12x12 –	replaced replaced	Z, S ply Z/Z	?tablet weave –	– –	?tablet border on weave or band
H7 (Foster, d Griffith)	Cruciform brooch	back of cross, by pin head	–	replaced	Z/Z	?tabby	–	traces, fine, damaged
H8 (D.14.125-7)	Pair gilt saucer brooches	on one pinhead under pin-hook	– –	replaced replaced	– Z, S	?tabby –	– –	 threads from weave
H9	Large gilt square- headed brooch	round pin head and patch back	*c* 15x15	replaced	Z, S	?twill	–	deteriorated
H10	Pair applied disc brooches	a) round pin head, back b) leather or ?grass	–	-	Z	threads	–	
H11	Pair applied disc brooches	a) back of disc, along pin	18x10	replaced	Z/Z	twill	est 16/12 (8/6 5mm)	one marked Haslingfield, one marked Hauxton
Foster Bequest	Case disc brooches	1: (Haslingfield)? Centre: circle round pin head Top R. (back)	5x3 – –	replaced replaced replaced	Z Z, S ply Z, S ply	tablet cords or tabby threads ?Tablet cords	4 on 3mm ?8wps 3mm wefts 5 on 5mm –	ie warp-face tabby, close close, fine
Haslingfield? (or Barrington B?)	Bird Brooch	back of pin	–	part replaced vegetable (WIRA)	Z/Z	tablet weave	–	area 2.5mm parallel threads
Barrington A	*Ashmolean Museum Oxford*							
1.1909.263	Cruciform brooch	back, pinhead	–	replaced	Z, S	threads	–	Z, circle, knot ?beads
1.1909.270a	Trefoil-head brooch	on front	–	impression	Z/Z	twill	–	coarse
4.1909.285	Pair of brooches	a) on back pinhead, round b) on pin ?leather under, round hinge	6x8 – –	replaced replaced replaced	Z/Z Z/Z Z	twill twill traces twill	9/8 5mm	 ?coarser weave coarser, as on a)
5.1909.255	Plate brooch	back, on pin end under pin	10x14 –	replaced replaced	Z/S Z/	?twill tablet weave	– 6/18 (5 on 5mm)	fine fine cords, chevrons, 4-hole
Barrington	*British Museum OA4993*							
76.2.12.70	Small long brooch	back of headplate, lump area next to plate pin attachment	*c* 15x15 – – 	replaced replaced replaced 	– Z/Z Z, S ply 	– ?twill threads 	– – – 	deteriorated lump, fine coarse coarse, would round
76.2.12.35	Small long brooch	pin attachment	–	replaced	Z, S ply	threads	–	?4 ply, coarse; ?beads
76.2.12.68	Small long brooch	deteriorated lump		replaced	Z/S			
76.2.12.37	Pierced circular brooch	pin attachment	4x5	replaced	Z/Z	twill	6/6 on 5mm	very coarse threads
76.2.12.38	Disc brooch	detached scrap	–	replaced	Z/Z	twill	–	as on 76.2.12.37
76.2.12.39	Disc brooch (pair to 76.2.12.38)	on pin, traces	–	replaced	–	–	–	traces Fe
OA 4993	Spearheads	traces, wrapping	–	replaced	–	–	–	not clear

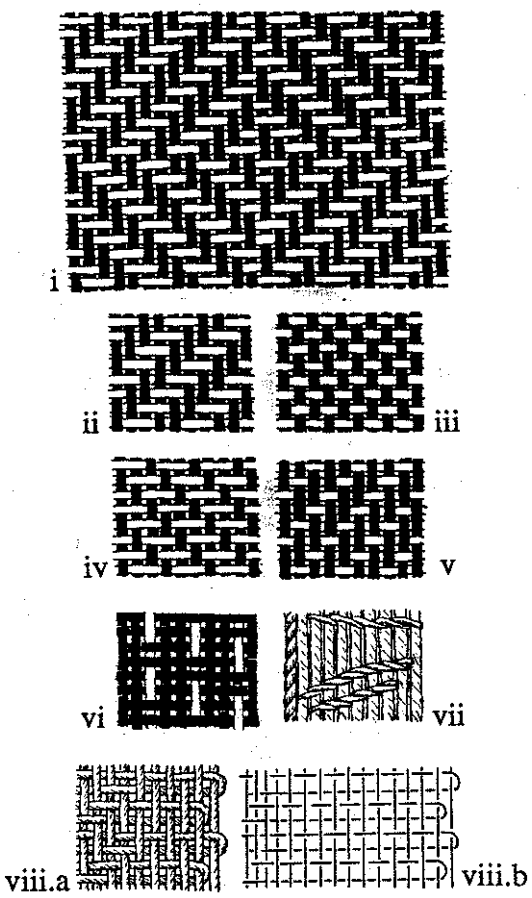


Figure 6.1 Weave diagram: i) broken diamond weave, Z/Z spinning; ii) 2/2 twill, Z/Z; iii) tabby weave, Z/Z; iv), v) three-shed twill, iv) 1/1, v) 2/1, both Z/Z; vi) striped twill, grave 79Δ99; vii) patterned tablet-weave band, grave 10Δ25; viii) tubular selvedge on 12 warps, Barrington B, grave 79, a) as woven, b) diagram (after Hald 1980, fig 153) passage of warps in tube. (Drawings after Elisabeth Crowfoot)

skeletons, noticeably absent in some other important sites, but here well enough preserved for age and sex to be seen, and the placing of the possessions – brooches, wrist-clasps, and girdle hangers for the women, arms, brooches, and buckles for the men – give useful evidence confirming the well-known general picture of 6th to 7th century costume found in other Anglian cemeteries: the woman's peplos-style garment, often of solid wool twill, fastened with brooches on the shoulders, clearest in graves 3, 13, 53, 79, 95, and 96, over the long-sleeved undergarment, with decorated cuffs fastened by the wrist-clasps, not so well-preserved (graves 10 and 69), and a buckled belt carrying the 'girdle hangers' (Owen-Crocker 1986, 28–45); bead-threads, plyed or in bunches, tied or hooked round the brooches (graves 19, 37, and 66). There is less evidence from the men; their buckles suggest their belts were usually leather, and occasional scraps show wool twills from tunics, perhaps also good flax twill in grave 22, and some lighter flax from shirts. Traces of weave suggest that here, as so often, weapons were wrapped in cloth, and some knives had leather sheaths. Coarse threads wound round shield handles could be either a mend, or for a good grip (graves 29 and 78) as may be the case for the box-handle in grave 109.

6.4.1 The textiles

The fragments from the museum collections from the earlier excavations include nearly 100 items or recognisable traces, which show the usual range of 6th to 7th century Anglo-Saxon fabrics, with twill weaves predominant, simple 2/2 (four-shed) constructions with yarns spun in the usual combinations, Z/Z or Z/S in warp and weft, with a few identifiable broken diamond twills, the one previously published of Z-spun flax. Tabby (plain) weaves generally increase with 7th century material, but here there are only a few. With brooches that have been well cleaned for museum display this is perhaps inevitable; tabby weaves are often lighter fabrics, flax perhaps from veils lying across the front of the brooch, and heavier garment weaves are naturally preserved round the pins, on the underside of the brooches.

There is one example of the three-shed (2/1) twill, occasionally still preserved in the Anglian region, where its survival may be due to earlier Roman settlement (Crowfoot in Bruce-Mitford 1983, 440–442). Two scraps from tubular selvedges show the survival of another early technical detail (Hald 1980, figs 153 and 154; Wild 1970, fig 36) but the value of this flexible edge continued to be recognised throughout the Anglo-Saxon period (Fig 6.1,viii; Crowfoot, E 1978, Gr.35; 1983, 473–4; 1985, Gr.8/2; 1987, Grs. 368 and 378; 1988, 14; Crowfoot with Henshall 1981, 96–7; Crowfoot and Jones 1984, 18). There are also possible remains from eleven tablet-woven bands or borders.

The textiles from the recent excavations cover much the same range – again one surviving three-shed twill (grave 79, Fig 6.1, iv and v and Table 6.4); 19 2/2 twills with Z-spun yarns in both systems (Fig 6.1, iii), possibly eleven or twelve with mixed spinning (Z/S); one twill with a possible broken diamond pattern (Fig 6.1, i, grave 42); the quality and style of another, a fine even flax weave (grave 9) suggested it could have come from a weave with widely-spaced diamonds as at Kempston (Crowfoot 1990, 41). There is also one twill with 'spin patterned' stripes (Fig 6.1, vii, grave 79) – two Z-spun warps followed by one S-spun; the effect suggests the single darker threads in a brown twill at Broomfield Barrow (Crowfoot 1983, 473). S-spun pairs at Ardale are mineralised (Crowfoot 1988, 55); but there is some evidence that the spin difference probably indicates also a change of colour (Crowfoot in Hirst and Clark, forthcoming). In these graves there were also nineteen possible fragments from tabby weaves (Fig 6.1, iii). Evidence from recent 7th century cemeteries further north, with better fibre preservation, suggests that this increase in tabby weave, so noticeable in Kent, is

Table 6.4 Textiles from recent excavations

Grave	Sk No	SF No	Lab No	Sex	Object	Position on object	Measurement	Fibre	Spin	Weave	Thread count	Comments
2	3.3	3		M	Cu buckle plate	loop, round	–	replaced	–	–	–	probably leather.
3	4	12	863725	F	Strap end / buckle plate	both sides chape, under leather (a)	–	replaced	–	?tabby	8/5 on 5mm	impression, fine
		17	6359		Cu clasp	on pin (b)	–	replaced	Z/S	?twill	–	a few threads, pairs
		23	6350		Cruciform brooch	on pin hinges (c)	9x5	replaced	Z/Z	2/2 twill	c. 10/–	on lump Fe, layers, fine, threads smooth, medium spin
		24	6352		Cruciform brooch	on pin hinges ?(c)	*c* 10x8	replaced	Z, Z	?threads (?twill)	traces fine threads across	coarse, spin medium-loose tying, or one system weave.
9	13.1	6	863757 941157	M	Fe buckle fragment	small area	–	replaced	Z/Z	2/2 twill	7/6 on 5mm	threads uneven, some thick
9	13.2	1	6382		Cu buckle	along top of plate, and detached. Leather belt fragment	length 63, width 32	veg. flax (HMA)	Z/Z	2/2 twill	12/13–14	medium spin, even weave. No reverses on area but style suggests wide diamonds?
		6	863730		Fe ?knife	metal point, traces	–	replaced	S	–	–	one clear thread
		7	863741		Fe knife and buckle	traces both sides, near hilt (a) Loop of buckle (b)	6x8 *c* 16x10	replaced replaced	?Z/Z Z, S?	?tabby threads	– –	fine spin, even folding round
10	16.2	2		F	Annular brooch (2 pieces)	patch front and on small piece (a)	10x10	replaced	Z/Z	? twill	–	loose spin
		25			Textile from beneath brooch	detached, from inside (b)	10x8	semi-replaced	S/Z	tablet band, patterned	9 cords 8mm	cords S, ? stationary for pattern, one horiztontal line, 2 diagonal soumak (Fig 6.1 vii)
		26			Textile from above brooch 1	fragments overlying front? ?(a)	20x15	replaced	Z/Z	twill	14/12	medium spin, no reverses on fragments; folds.
13	20.2	30.1	863764 941164	F	A Keys B Knife, small C Key	through loop blade, top on loop (a) on hook	– – 18x5 7x16	replaced replaced replaced replaced	– – Z/S Z/S	– – twill twill	– – – 6/6 on 5mm	leather strap, traces textile patch textile or leather threads split –
		33	6346		Cruciform brooch	back, hinge (b)	*c* 20x10	replaced	Z/Z	2/2 twill	–	coarse yarns, medium spin
		35		F	Disc brooch	back, under bone & round pin (a) against metal (b)	– *c* 15x15	replaced replaced	Z/? Z	– ?twill	8/– –	one system, weave not clear flattened
		44	8563732 941165		Buckle and stud	on stud (a) lying over (a) ?(b)	*c* 20x7	replaced replaced	?Z/S Z/Z	– –	– –	confused coarser weave
18	42.2	1	6496	F	Bucket, wood	on ring and handle, metal (a)	–	replaced	Z	?tabby	–	traces, coarse
		22.07	863771		Knife	both sides blade (d) patches edges (e)	*c* 50x18 15x5	replaced replaced	Z/?S –	?twill ?tabby	– –	medium spin, deteriorated damaged
		20	863765 991166		Latch lifters	top loops & to end ?(e)	50x*c* 7 10x7	replaced (?flax)	Z/Z	tabby	est 20/*c*16 (10/6 on 5/3mm) 24/24 (12/12 5mm)	spin close, even weave slightly open, variable
		21			Weaving batten	areas very deteriorated	–	replaced	Z/S	–	–	weave not clear
	Bed	30	202		Eyelet bar and ring (head) N. end	along bar, and traces ring (b) coming up through ring	60x15 –	replaced replaced	Z/S ?S ply	2/2 twill threads	– –	loose spin, even weave, string, 4 ends together
		5	179		Eyelet (right of 30)	under part of bar (b)?	–	replaced	Z/–	–	–	coarse, damaged

Table 6.4 Textiles from recent excavations (*cont.*)

Grave	Sk No	SF No	Lab No	Sex	Object	Position on object	Measurement	Fibre	Spin	Weave	Thread count	Comments
		6	198		Eyelet (left of 30)	under bar (b)	–	replaced	Z/S	twill	–	loose spin
						front and back of ring	–	replaced	Z	?string		coarse (or deteriorated textile)
		2	117		Eyelet	under bar	–	replaced	Z	–	–	textile deteriorated
		3	182		Eyelet	under bar, one end (b)	–	replaced	Z/S	twill	–	coarse
						other end, patch ?(c)	–	replaced	Z/–	?tabby	–	finer
						on ring	–	replaced	S or S ply	threads	–	coarse; tying? through ring
		4	181		Eyelet	under bar (b)	–	replaced	Z/S	2/2 twill	*c* 10/10	coarse
						over sides of ring	–	replaced	?Z, S ply	threads	–	coarse, multiple threads, tying lying side by side
		7	200		Eyelet	under bar (b)	–	replaced	Z/S	2/2 twill	–	coarse, multiple threads, tying lying side by side
		8	199		Eyelet	broken bar ?(b)	*c* 30x12	replaced	Z/Z,S	2/2 twill	c 10/10	?occasional Z threads in S system
		9	178		Eyelet	patches on ring ?(c)	–	replaced	Z/S	?tabby	–	coarse weave, rather than tying threads
		18	180		Bar	under ends of bar	18x10	replaced	–	–	–	not clear, coarse
						areas on ring	10x6	replaced	Z/?S	–	–	very deteriorated, coarse
		22.20			Bar	fabric all over ?(c)	–	replaced	Z/Z	?tabby	5 on 5mm	folding round iron
		10,13, 14,15, 16,23 25,26	189,183, 196,190, 184, 204		Cleats, stay, knife and iron fragments	all show wood and rust patches, ?leather or deteriorated textile						
		11, 12	193, 197		Cleats	patches textile	–	replaced	Z/S	2/2 twill	–	as on the eyelets
		17	207		Stay	patch textile	25x15	replaced	Z/Z		*c* 8/–	loose twist
19	44.2	48.1	6353	F	Annular brooch, openwork	back, pin, hinge	Length 45mm	replaced	–	–	–	weave, damaged
						against metal (a)	Length 15x25	replaced	Z, S ply	?tablet weave	7 on 7mm	?cords or border
		49			Brooch, pair to 48	back, round hinge	–	replaced	Z, S	threads	–	coarse, ?beads
						underneath (b)	10x10	replaced	ply Z/Z	?tabby	_	finer, pairs, ?band surface bad
		80.1			Cu buckle plate fragments	similar to 2 below, edge (c)	12mm	replaced	Z/Z	twill	–	–
						and along pin	*c* 26mm					
		80.2	863748 941168		Fe buckle plate, fragments	one side leather	18x8	replaced	Z/Z	twill	12/c12	edge turned over, 10mm, 2 S threads, ?sewing, ie hem
						other fragment (c)	length 6mm					
		86	863747		Fe fragment, pin	one side leather, other traces ?(d)	–	replaced	?Z/S	twill	–	–
20	45	2	941169	F	3 fragments, Fe fittings on wood	i) top, largest, folds round	32x32	replaced	Z/?S	?twill	–	damaged; loose spin
						metal (a)	15x12	replaced	Z/Z	?twill	–	–
						ii) under side, (b)	–	replaced	–	?tabby	–	finer weave
						under (b) traces (c)	30x18	replaced	Z/Z	2/2 twill	est 5/6 on 5mm	obscured by clay
						iii) both sides, (b)						
23	48	3		M	Cu buckle	all over, with ?bone	–	replaced	Z	threads	–	fine
27	52	3	863733 941122	M	Fe sheet fragment	one side, traces	–	replaced	S/–	–	–	small area S threads
		2	863766 941171		Fe blade fragment	one side, two layers slanting other side, leather, and traces same.	–	replaced	Z/Z	tabby	16/c12	?weft threads finer open weave

Table 6.4 Textiles from recent excavations (*cont.*)

Grave	Sk No	SF No	Lab No	Sex	Object	Position on object	Measurement	Fibre	Spin	Weave	Thread count	Comments
29	58.1	3	863772	M	Shield grip	fragment with stud (a) other fragment (b) wound round handle	18x12 13x8 –	replaced replaced replaced	Z/S Z/?Z Z	not clear ?twill threads	– 7 on 5mm/– –	coarse Z threads at edge; leather on stud coarse, over leather. coarse
29	58.2	15			Strap-end	1) inside, round rivet ?(b) 2) inside	*c* 8x10 *c* 6x7	replaced replaced	Z/Z Z/Z	?twill ?twill	– –	spin medium to loose more deteriorated
		16			Strap-end	detached fragments (b)?	–	replaced	Z/Z	?twill	–	not clear
		17	863724		Cu buckle	edge of loop (c) over weave	16x5 –	replaced replaced	Z/Z –	tabby ?twill	5/4 on 5mm –	? weave border much finer threads
33	112	2.5		M	Shield rivets	?wood, leather	–	replaced	–	–	–	
		3.1 3.2		M	Shield bars	lumps deteriorated probably textile	–	replaced	Z	–	–	spin coarse, loose, weave not clear
		4		M	Knife	traces on blade	–	replaced	–	–	–	small patches textile
34	117	2	863778	M	Fe knife	one side leather; other small patches (a)	*c* 40x10	replaced	–	?tabby	–	fine weave, spin not clear
		11		M	Fe shield grip(?) fragment	top surface, traces (b) one clear fold top	40x*c*30 8x8	replaced	Z/Z	2/2 twill	10/10 (5/5 on 5mm)	loose spin, even, weave very even
36	125	4	322	M	Buckle	area underneath	*c* 25x30	replaced	Z/?	–	–	folds round to front; loose spin
37	126	1	6381	F	Cu alloy brooch	back of pin hinge	–	replaced	S or S ply	threads	–	tied in knot
39	128	4	65		Disc brooch	round pin hinge	–	replaced	Z	thread	–	loose spin, ? beads
		6			Cu buckle	all over plate	*c* 25x13	replaced	Z/Z	?twill	–	spin medium to loose
		7	941179 863763		Fe assembly	on small loop	10x8	replaced	Z/Z	twill	–	even medium spin, thread count not clear
		11	74		Small long brooch	detached from pin	10x5	replaced	Z/Z	twill	–	damaged surface
42	135	1	863753 941180	F	Fe knife	both sides of tip (a)	6x5, 18x6	replaced	?/S	twill, ?broken diamond	*c* 10 (4mm)/–	part of centre preserved?
		4	863790		Fe rod fragments	patches, small (b) on small piece ?(a)	– 1.5x5	replaced replaced	Z/Z Z/S	twill ?twill	– –	not clear
		5	863746 941180		Fe knife	on small piece, stud	5mm	replaced	S, Z	–	5 on 5mm	curling round stud
53	156	3	69	F	Small cruciform brooch	back of pin-hinge (a)	*c* 14x13	replaced	Z, S ply	?tablet cords	6 on 5mm	medium spin, clear 5mm
		5	75		Small cruciform brooch	Back of pin hinge (b) detached fragment (c)	– 9 x 3.5	? wool ? flax	S, Z Z/Z	threads twill	– 6/6 on 5mm	damaged area light buff colour, spin medium to loose
60	183	11.2	863720 941192	F	Ring	both sides, two fragments (a) at broken end (b)	9x3 –	replaced replaced	Z/Z Z	tabby threads	est *c* 15/15 (13/5 on piece)	medium spin, even weave. loose spin, wound round ?mend.
		11.3			Cu chain links	traces inside	–	replaced	Z	threads	–	fine
		3			Brooch (buckle?)	on pin, deteriorated	–	replaced	Z	threads	–	–
		4			Brooch (buckle)(pair to 3)	complete ?traces	–	replaced	Z	threads	–	fine

Table 6.4 Textiles from recent excavations (*cont.*)

Grave	Sk No	SF No	Lab No	Sex	Object	Position on object	Measurement	Fibre	Spin	Weave	Thread count	Comments
		5	941143		Fe link, chatelaine chain	all over; area loop (a)	–	replaced	Z/Z	?tabby	–	cords, damaged, coarser
						areas (b)	–	replaced	S ply	?tablet	–	
						fragment (tube) (a)?	7x5mm	replaced	Z/Z	tabby	10/7 (est 13/14)	
		11.1	941191		Knife	all over blade, patches ?(f)	best, 4x4, 10x8	replaced	Z/Z	tabby	*c* 18/20 (8–9/9–10 5mm)	folding round edges
	Bed	101	235		Curved rod (broken)	over length, traces with leather	Length 200mm	replaced	Z	threads	–	coarse
						50mm from point (c)	–	replaced	Z/S	?twill	–	fine threads
		103	238		Spiral Fe rod ?Bed head	traces as on 101 (c)	–	replaced	Z/S	?twill	–	garment weave quality
		102	215		Eyelets, cleats and bindings, Fe.	A inside and out, textile	–	replaced	Z, S	threads	–	ends broken
						damaged	Width 30mm	replaced	–	–	–	leather, held outside nail,
						B Fe binding, cut end, nail		replaced	Z/S	?twill	–	coarse
						through	Width 7mm	replaced	Z/S	?twill	–	fine, surface damaged
						under and on head (d)	–	replaced	–	?twill	–	fine
						C 2 small Fe eyelets (c), along shafts						
						D Fe point, ?nail ?(c)						
		1 (121)	227		Fe cleat fragments	narrow strip, ?eyelet	*c* 13mm					coarse weave, wrapped round
						large fragment	60 x 50	replaced	Z/–	?	–	frame
		1 (121)			Fe fragments	rectangular plate, nails	–					area
						nail heads (f)	7x7mm	replaced	Z/Z	tabby	–	traces weave
						broken bindings, nails	–	replaced	–	?twill	–	(all same pattern, length *c* 50–60, ring diam: 30–35mm, no flat ends)
		2 (121)	218		Fe fragments	all over, areas textile	–	replaced	Z/Z	?twill	–	medium grade; and finer;
						on ring (e)	–					leather on shank
		3 (121)	214		Fe fragments	outside ring, traces	–	replaced	Z/Z	?twill	5 on 5mm/–	coarse; earth plug, threads and leather
		4 (121)	213		Fe plate rectangular	under plate and leather	–	replaced				two nails; threads round nails,
						and traces textiles	–	replaced	Z/S	–	–	?driven through textile
		6	223		Fe stud	traces	–	replaced	Z/S	?	–	fine, weave not clear
		7	219		Eyelet	overlapping ring ?(f)	–	replaced	Z/?Z	?tabby	–	fine threads
		8	220		Eyelet	leather on shank, textile ?(c)	10x11	replaced	?Z/S	–	–	with wood on ring and shank
		9	221		Eyelet	wood on shank; ring	–	replaced	Z	threads	–	coarse threads
		10	222		Eyelet	all over ring ?(f)	–	replaced	–	?tabby	–	fine, open weave, ?tucking under ring, cf 7
65	300.2	1		C	Cu wire bracelet	in soil, ?threads	–	vegetable (HMA)	–	–	–	may be grass or roots
66	322.2	17	70	F	Small long brooch	bunched on back, head	–	replaced	Z	threads	–	deteriorated weave or bead threads
		67			Cu plate, broken	round studs, and roots	–	(HMA – no recog-nisable fibres)	Z	threads	–	
69	359	12	863742	F	Fe ring	on small piece	4x5	replaced	?	?tabby	–	fine, damaged, surface hidden
			941199		fragments			replaced	Z, S	threads	coarse	by coarse threads
		21			Cu sheet fragments	tiny scrap	–	replaced	Z/S	?tabby	–	–
		24	265		Cu plate, holes	?textile in holes	–	replaced	Z/–	tabby	–	with bone

Table 6.4 Textiles from recent excavations (*cont.*)

Grave	Sk No	SF No	Lab No	Sex	Object	Position on object	Measurement	Fibre	Spin	Weave	Thread count	Comments
78	424	4			Cu buckle	?threads preserved in chalk block	–	?flax (HMA)	–	threads	–	no spin clear
		5	863758 941206		Latch lifter	largest piece, patch	–	replaced	Z	threads	–	fine
		16	863722 941206		Latch lifter	small patches	–	replaced	Z/?	?twill	–	–
		20	863786		Fe loops, Cu bands	underneath bands	–	replaced	–	–	–	leather
			941206		Fe piece, broken	round ring (loop)	*c* 10mm	replaced	Z ? S	threads	–	coarse, tied round
					Fe fragment	broken edge weave	–	replaced	ply	?twill	–	pairs, ?twill or border
					Fe loop or ring	round ring	–	replaced	Z/S Z/Z	twill	–	pairs turning at edge to return into weave
		21	941206		Fe latch lifter fragments	on one other piece leather	10x2.5mm	replaced	Z/?Z	?twill	est 20/24	one system very fine
		22	941205		Fe rods (keys?) (latch lifter)	patches along	–	replaced	Z/S	?twill	–	–
79	428	99	52	F	Cu saucer brooch	along pin, over hinge, curling round, 2 layers (a) and deteriorated layers	*c* 32x15	replaced	2Z,1S/Z	2/2 twill	6/6 on 5mm (12/12)	probably striped, 2Z, 1S; (Fig 6.1vi) and
		100	53		Cu saucer brooch, pair to 99	along pin, back, curling (a) over end	Length 45 x *c*15	replaced	Z/Z	2/2 twill	14/14–15	folds held by pin. Possible S threads in damaged layer
		143	863754		Fe buckle	inside chape	–	replaced	Z	–	–	fine threads.
			941208			(tube) fragment (b)	*c*10x10	replaced SEM	Z/Z	2/1 twill	–	?weft uneven; fine threads, close weave (Fig 6.1)
83	436	4,14, 20,21	863781, 863773	F	Latch lifters and fragments	on most fragments edge, patches (a)	4x2	replaced	Z/Z	tabby	*c*11/10 (5/4 on piece)	coarse threads
						another (b)	3x4	replaced	Z/S	twill	*c* 6/10 (7/4–5 on piece)	clear
84	440.1	14	863760 941213	F	Fe buckle	over both sides chape	30x20	replaced	Z/Z	–	–	loose spin, weave not clear
						underside (a) patches top	10x10	replaced	Z/S	2/2 twill	*c* 10/10	yarn very fine, even
						side (b)	10x8	replaced	Z/S	2/2 twill	*c* 10/10	similar, no reverses
						and loose fragment on loop (c)	10x4	replaced	Z/Z	tabby	7/4–5 on fragment	and smaller scraps
91	459	4			Cu wire ring, toilet set	all along wire	–	replaced	Z/?	–	–	not clear
93	526	12	16	F	Cruciform brooch	traces fibres	–	–	–	–	–	"Organics" on label
95	530	53	79	F	Cu composite brooch	fragments, removed (a) fragile	15x15, 13x10	replaced	Z/Z	2/2 twill	9–10/10	yarn medium to loose, weave even
		56	78		Composite brooch	round pin hinge (b)	–	replaced	Z, S Ply	thread	–	loop protruding, ?beads
96	547.1	4	66	F	Cu disc brooch	back, pin hinge	–	replaced	Z/?Z	–	–	surface damaged
		5	55		Cu cruciform brooch	back, pin hinge and detached scraps	c. 20x15	replaced	Z/Z	?twill	–	coarse spin, not clear
97	551	2	941149	M	Fe buckle	both sides, deteriorated (a)	–	replaced	Z, S	–	–	coarse threads, leather, chape
						underneath (a) (b)	5x3	replaced	Z/S	? tabby	–	finer weave
106	626.1	145	83	F	Gilt brooch	back	–	replaced	Z/	–	–	loose spin, coarse, damaged

Table 6.4 Textiles from recent excavations (*cont.*)

Grave	Sk No	SF No	Lab No	Sex	Object	Position on object	Measurement	Fibre	Spin	Weave	Thread count	Comments
		153	941225		Girdle hangers	shafts and end of hooks areas (a)	*c* 60x15 9x7	replaced	Z/S	2/2 twill	*c* 8/–	Z thread coarse; possibly fragments of two weaves
						broken scraps best underneath, against metal (b)	8x4	replaced SEM	S	?tablet band	10 cords 4mm	fine possible pattern cords only slightly S (cf 16B)
		154			Fe buckle, strap-end	areas ?threads all over	–	replaced	–	–	–	mostly soil
		155	84		Cu brooch	on pin hinge, damaged (c)	*c* 15x12	replaced	Z/Z	?twill	–	rather loose spin
107	632	2	867221 941229		Fe buckle	underside	–	replaced	Z, S	?twill	–	flattened, crumbling
109	683.1	4			Fe bolt or hinge	both sides, textle	–	replaced	S	–	–	deteriorated
109	683.2	2	941320 863791	F	Pot, ceramic	samples, outside pot ?links, varying sizes						with traces replaced leather ? at least two fine weaves
						S2 ?(a)	–	replaced	Z/	threads	–	fine weave
						edge metal ring (b)	–	replaced	Z	threads	–	coarse, tied round
						patches (c)	–	replaced	Z/S	?tabby	–	fine
						S3 under links, leather	–	replaced	Z/S	–	–	weave not clear
						S4 covering links (a)	–	replaced	Z/Z	tabby	–	fine, close weave
						and patch (d)	–	replaced	S	?twill	–	–
						from ?pin (c) or (e)	Length 12mm	replaced	Z/S	–	–	spin clear, weave uncertain
						S7 (links) (e)	–	replaced	Z/S	twill	–	very fine, surface damaged
						S10, 11, 12 ?(b)	4x5	replaced	Z	threads	–	with leather, ?tying
						S13 patch ?(a)	6x6	replaced	Z/Z	?tabby	–	fine
						S14 on Fe fragment	–	replaced	–	–	–	traces ?twill and tabby
											–	
		3	863791		Handle of box	round metal	–	replaced	Z	threads	–	multiple, loose spin, tied round
		4	863791		Fe hinge (box fitting?)	adhering to pot 2 both sides, ?textile	–	replaced	?S	–	–	fine, damaged
		5			Chatelaine (hangers, ring and hook)	all along bars	–	replaced	–	–	–	textile or leather
						top of ring link	11x4	replaced	Z/?	–	*c* 10 5mm/–	fine weave, not clear
						round ring and hook	–	replaced	Z	threads	–	?tying
						detached, fragment	–	replaced	Z/S	–	–	weave not clear
		7	941230		Knife	all over surface	–	replaced	–	–	–	leather
						occasional	–	replaced	Z	threads	–	?sewing of sheath
		10	863791		Fe angle fragment (box fitting)	? broken off 3 or 4	–	replaced	–	–	–	wood

accompanied by increased use of flax in women's garments (Sherlock and Welch, 1992; Walton 1992, 57).

Here there were only four remains of tablet-weaves. In this popular Anglo-Saxon band-weaving technique, the warp threads pass through holes in the corners of a 'pack' of 'tablets' or 'cards', usually rectangular, of bone, horn, hide or even, as in the Oseberg ship, wood, which are manipulated to twist the threads in order to form the sheds for the passage of the wefts. The technique can be used on a loom during weaving, for all four borders of a woven length of cloth, such as a cloak, or the 'peplos' dress, or separately on a small frame to make belts and straps, like the decorative borders sewn to finish off the necks and wrists of garments (Hoffmann 1964, 153–169; see Crowfoot, G M, 1951, fig 1). The remains from Edix Hill are small, two from brooches (graves 19 and 53) probably from the heavily corded edges of added bands, or, as in the brooches from a burial at Blewburton Hill, Berkshire, the starting border, decorating the necks of the women's over-gowns (Henshall 1959, 68). Another, from a wrist-clasp (grave 10, Δ25, Fig 6.1, vi) has an early type of decoration, associated with bands of the Migration Period (Nockert 1991, 83–5) of which examples have been found at Snape (Crowfoot in Filmer Sankey, forthcoming). In this the cords of the pattern area are stationary, untwisted, with patterns brocaded in horsehair, of which only a few traces of soumak pattern survive; the lack of strong ply in the cords, with possible traces of fine crossing threads, in another fragment (grave 106) suggested similar technique.

The most important find from the later excavations at Barrington Edix Hill is unquestionably the very complete bed remains uncovered in grave 18. This is a valuable and interesting addition to George Speake's definitive study of Anglo-Saxon bed-burials in the publication of the bed-burial on Swallowcliffe Down (Speake 1989, 82–115). His interpretation of the use of cords and textile in the structure of the Swallowcliffe bed demonstrates striking similarities to the position of the textile remains in grave 18 bed, but differs, as he shows, in one important detail in the construction of the bed body-support area, which in both cases seems to have been covered by a strong twill weave. At Swallowcliffe wood remains indicated that this body-support, on which the mattress was laid, consisted of a lattice framework of narrow planks, nailed together, and held by cords to the small ring-cleats in the wooden sides of the main bed structure. There is no sign of this lattice at Edix Hill, and it is probable that here the support was entirely provided by the strong criss-cross thongs. The twill weave at Swallowcliffe, with Z-spun yarn in warp and weft, could have been of flax or hemp, but that at Edix Hill, well-preserved in position on the base of the main eyelets where they were fastened to the edge of the cloth-covered upper plank, was a twill with mixed spinning, Z/S. Samples taken for laboratory examination (SEM) were unfortunately too deteriorated for the fibre to be identified, but the S-spinning of one of the yarns normally indicates wool. Unlike the coarse vegetable cloths still used in the construction of army camp-beds, a woollen fabric normally stretches and sags with use; the thongs would have corrected this tendency, and perhaps even given a feel nearer to that of a spring mattress – particularly kind in the case of a sick person, such as the unfortunate young woman in grave 18.

The remains of the bed in grave 60 are much less well preserved, but again indicate the use of a twill weave for the body support.

6.4.2 Fibre identification by H M Appleyard, FTI

The fibres from this site were all in poor condition.

- *Grave 9 (Sk13B) Δ1 (Copper-alloy buckle) The fibres are very brittle, with a lot of deposits. Vegetable origin, almost certainly flax, but cross-section unsuccessful.*
  Grave 65 Δ1(Copper-alloy wire bracelet) Vegetable matter, some appearance of grass or straw.
  Grave 78 Δ4 (Copper-alloy buckle) Vegetable origin, probably flax.

6.5 Non-ferrous metalwork by Catherine Mortimer and Kilian Anheuser

6.5.1 Copper alloys

Quantitative analysis of samples from 26 cast and wrought copper-alloy artefacts showed a range of copper alloys were being used (Table 6.5, Fig 6.2). Brasses with small amounts of tin and gunmetals with about 5.4% zinc and 5.5% tin are the commonest alloy types (Table 6.6, using alloy descriptions as in Mortimer 1991). Mixed alloys (containing both zinc and tin) were commonly used to make early Anglo-Saxon artefacts, especially those from the 6th century (Mortimer 1990). There is little difference between the alloys used for casting and those used for wrought work; these results conform to Blades' (1995) findings. Similarly, there is no clear evidence of alloy selection for objects to be gilded. All samples, except one from an unstratified artefact (F372 Δ1), came from artefacts found in graves dating to the main Migration Period phase, so it is not possible to investigate changes in alloy use over time. Pairs or sets of artefacts are often of the same alloy type, suggesting that they could have been cast from the same crucible load, or cut from the same sheet.

Sections from five non-ferrous artefacts were examined in order to investigate gilding, tinning, and soldering. A cast saucer brooch from grave 68 (Δ28) and the appliqué from an applied saucer brooch from grave 95 (Δ53.1) were shown to have been gilt

Table 6.5 EDX analyses of copper-alloy samples from Edix Hill

Grave	Context and SF No	Manufacture	Artefact type	Weight % normalised						
				Fe	Ni	Cu	Zn	Ag	Sn	Pb
19	44B:36	s	pendant?	0.2	0.1	77.4	12.2	0.1	4.5	0.5
19	44B:48	c	swastika disc brooch	0.2	tr	81.7	15.6	nd	2.3	nd
19	44B:49	c	disc brooch	0.2	tr	82.2	14.8	nd	2.3	0.1
19	44B:58	s	strap-end?	0.2	0.1	86.4	6.4	tr	5.2	1.3
19	44B:59	s	strap-end	0.2	tr?	86.6	5.8	0.2	5.2	1.8
19	44B:80	s	plate	0.2	tr?	81.6	11.4	0.4	5 0	1.3
19	44B:89	s	strip	0.2	tr?	77.6	15.9	0.2	4.0	2.0
39	128:11	c	small long brooch	0.1	tr	92.7	1.5	0.5	5.0	0.1
68	354:28	c g	saucer brooch	0.6	nd	94.2	1.2	nd	3.9	nd
68	354:29	c g	saucer brooch	0.6	tr?	91.8	1.0	tr	6.2	0.1
78	424:19	s	sheet	0.1	tr?	74.9	23.9	0.1	0.8	0.2
79	428:8	s	sheet	0.2	tr	85.0	6.5	0.1	5.4	2.7
79	428:26	s	sheet	0.2	tr?	85.6	6.0	tr?	6.2	1.6
79	428:40	s	plate with rivets	0.3	0.1	86.9	4.6	0.1	6.6	1.3
79	428:41	s	plate with rivets	0.2	tr?	88.8	4.4	tr	5.8	0.4
79	428:99	c	saucer brooch, pair to 100	0.1	tr	94.4	2.2	nd	2.9	0.1
79	428:100	c	saucer brooch, pair to 99	0.3	tr	94.7	2.4	tr	1.9	0.4
95	530:53	c a	applied saucer brooch	0.5	nd	89.4	4.8	tr	4.8	0.2
95	530:55	s	sheet	0.2	nd	80.3	14.1	0.1	4.0	1.3
95	530:56	c a	applied saucer brooch	0.6	tr	89.6	1.1	tr	8.2	0.3
106	626A:145	c g	saucer brooch	0.3	nd	88.2	7.6	tr	3.0	0.7
106	626A:148	s t	wrist clasp, pair to 149	0.1	tr	79.1	17.4	tr	3.0	nd
106	626A:149	s	wrist clasp, pair to 148	0.1	0.1	78.3	17.7	nd	3.6	0.1
106	626A:155	c g	saucer brooch	0.9	0.1	86.7	8.9	nd	3.3	0.1
106	626B:151	s	sheet	0.3	nd	85.6	1.8	tr	8.9	3.0
	1000:372:1	c a	applied disc brooch	0.2	nd	84.5	4.8	tr?	4.4	5.8

using amalgam gilding (fire gilding). This is the standard method of gilding during the Anglo-Saxon period.

The gilding on the sample from grave 68 (Δ28) had a relatively high mercury content, more than 20% Hg, suggesting that the gilding was carried out at relatively low temperatures (250–350ºC) which were just sufficient to give the surface a golden colour. Cu/Sn intermetallics on the back of appliqués from applied saucer brooches from grave 95 (Δ53.1 and Δ56) suggest that the appliqués were originally attached using a tin solder. The normal sequence of fabrication would be to fire-gild the appliqué, decorate the appliqué (by repoussé or chasing patterns) and then solder it on to the body of the brooch. Samples from a pair of tinned wrist-clasps from grave 106 (Δ148 and Δ149) showed that tinning was also carried out at quite low temperatures which preserved a good tinned surface.

This text is a summary of work presented in detail elsewhere (Mortimer and Anheuser 1996).

6.5.2 Gold pendants

There were two gold pendants found in grave 91, a Phase II woman's grave, possibly as part of a necklace constructed from silver wires. Other finds in the grave were a necklace of glass beads and fragments of a bone comb.

It has been argued that gold purity can be linked with dates during some of the early Anglo-Saxon period. This is because gold artefacts are thought to have been made using melted-down Merovingian gold coins and the purity of gold coinages declined

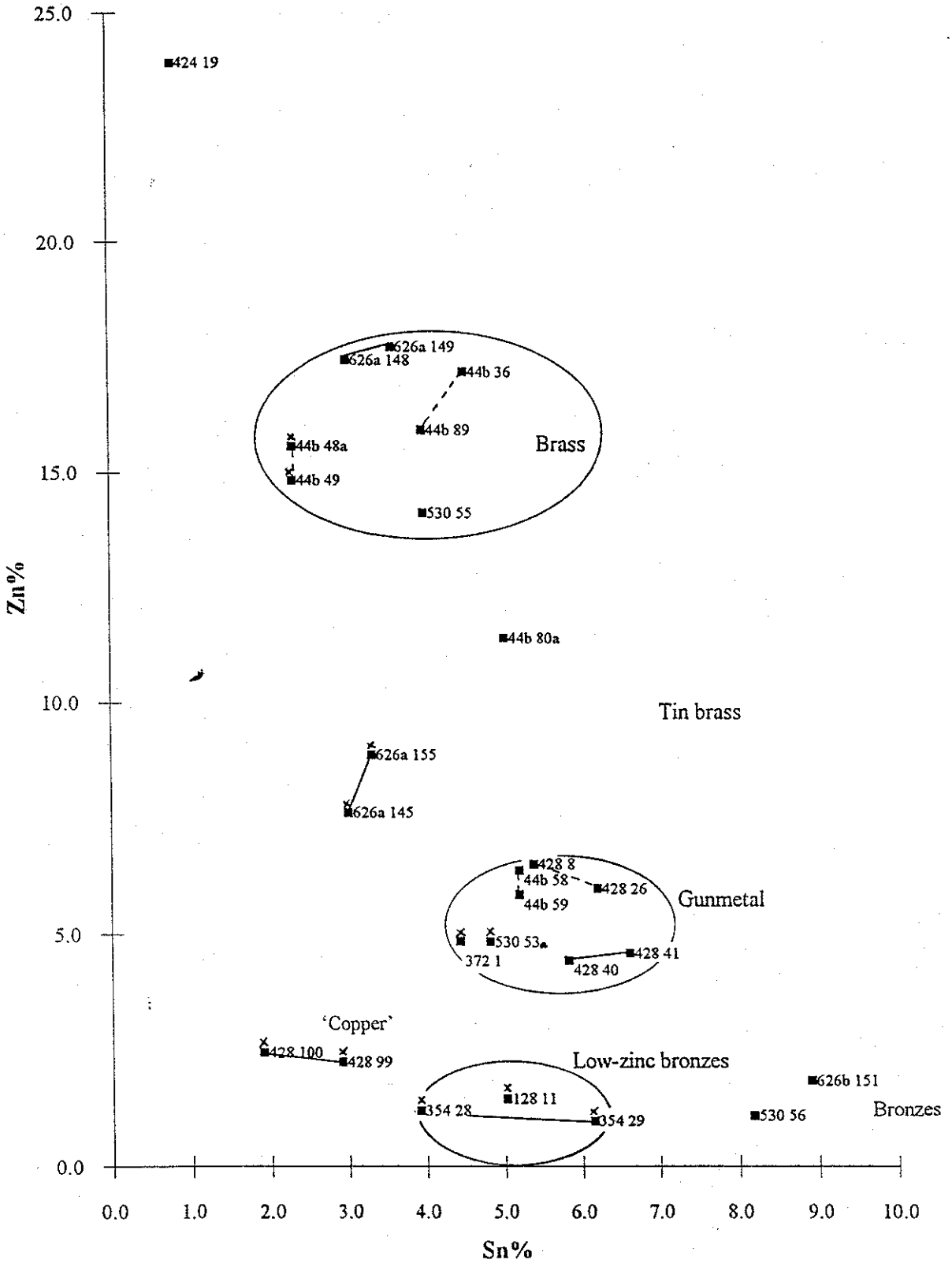


Figure 6.2 Zinc% vs tin% for all copper alloys

from the late 6th to 8th centuries, from in excess of 90% gold to often less than 50%, with substantial variation between the issues of different regions (Kent 1972). Analyses of typologically-dated Anglo-Saxon gold artefacts (eg Hawkes *et al* 1966; Brown and Schweizer 1973) indicate that the purity of the gold used does indeed decline overall during this period but that significant variation may be expected within the products of a period or even within one artefact, where it is made of more than one part. Thus the correlation between purity and date is not especially fine.

Table 6.6 Frequency of alloy types

Alloy type	Number of individual samples	Number, with pairs or groups of samples counting as one
Brass	8	5
Tin brass	3	2
Gunmetal	8	5
Low-zinc bronze	2	2
Bronze	2	2
'Copper'	3	1

Alloy types as shown on Figure 6.2. Brass includes one very high zinc brass. 'Copper' includes copper alloys with small amounts of zinc and tin (<4% of either), as purer alloys are rarely found at this time.

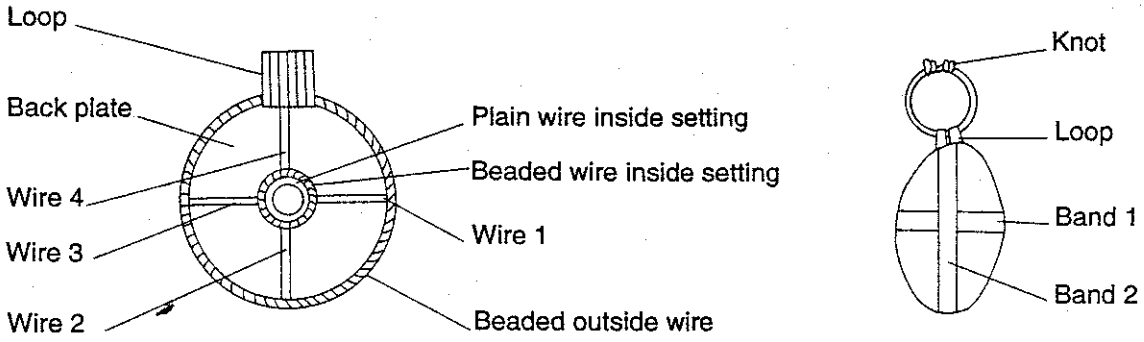


Figure 6.3 Sketches of gold pendants from grave 91 showing position of analyses

The gold alloys of the pendants from grave 91 were analysed using energy-dispersive X-ray (EDX) analysis in the scanning electron microscope (SEM), in order to determine their compositions and to establish how they fit into the pattern discussed above.

Although archaeologically gold-alloy artefacts appear to be untarnished on excavation and therefore may seem not to be corroded, gold contents are normally enhanced on the surface, compared to the interior content, because the more chemically active elements of the alloy, silver and copper, have been depleted during burial. Analysis in this case was performed on the artefacts as received, and this may mean that the values attained are not those which would have been discovered had a cut or drilled sample been available. No surface preparation was possible, ie cleaning or scraping the top layer. These analyses and the results of X-ray fluorescence analysis, which has been commonly carried out on gold artefacts should be compared with caution since XRF penetrates deeper – information from the enhanced/depleted zones of the metal surface is more important in SEM-EDX results than in XRF results. Furthermore, EDX analysis is ideally carried out on flat, solid samples and few of the analysed areas conformed to this. Analysis of three gold-silver and three gold-copper standards were carried out using the same method, showing that the technique tended to produce under-estimates of both these elements; the results gained were used to calibrate the 'unknown' values from the Barrington artefacts. Because of these problems, the EDX analyses are given to the nearest 0.1%, should be thought of as having large 'error bars' (*c* 2% for copper and *c* 0.5% for silver), and are normalised. Only gold, silver, and copper were detected in significant amounts. The results (Table 6.7) are the average of three areas in most cases.

A total of nine areas were analysed on Δ7 and four on Δ43 (see Fig 6.3). The results from Δ7 suggest that the two 'vertical' wires, numbers 2 and 4, were made of the same alloy, with a rather high silver content. The 'horizontal' wires are rather less silver-rich and their compositions are comparable with the compositions of the alloys used to make the wires which frame the outside of the piece, those around the central setting, and perhaps with the alloy used to make the suspension loop. The back plate is even less silver-rich. Little can be said about the copper contents as they do not vary very much, although it is noticeable that the silver-rich wires two and four also have some of the highest copper contents. The copper contents of the alloys of Δ43 are much higher in all cases and the silver contents are comparable, or even a little higher, than those of the high-silver alloys used in Δ7.

The lowest gold contents of these two pieces would conventionally give dates for them of 'after 610 AD' based on Kent's (1972) data on the gold contents of 'extra-Provençal' coinages. The lowest gold values are taken because these would presumably relate to the latest gold alloys used in the artefacts and therefore to the *terminus post quem* for manufacture.

Table 6.7 Weight percentage compositions of gold pendants from Grave 91 by SEM-EDX

Artefact	Area	Weight % normalised		
		Cu	Ag	Au
459:7	suspension loop	1.5	14.4	84.1
Pendant	back plate	1.7	9.6	88.7
	wire 1	1.4	13.2	85.4
	wire 2	1.8	24.4	73.8
	wire 3	1.0	10.2	88.8
	wire 4	1.6	21.6	76.8
	outside wire	1.4	11.8	86.8
	wire around setting	1.8	12.8	85.4
	plain wire around setting	1.0	12.8	86.2
459:43	knot	4.1	26.0	69.9
Pendant	loop	4.4	22.2	73.4
	band 1	3.5	26.0	70.5
	band 2	4.8	23.0	72.2

It is widely appreciated, however, that Anglo-Saxon goldsmiths may also have had access to some coins from the higher-purity gold coinages of the time (ie the Provençal high or Provençal low standards) or to still-circulating early gold coins which had higher purities. Hence the gold content of artefacts might be expected to be rather higher than the gold contents of contemporary extra-Provençal coinages and the estimated dates for artefacts, deduced on the basis of their composition, may be misleadingly early. The analytical problems mentioned above would only exacerbate this situation.

6.6 Ironwork: technological examination of the knives, spearheads, and sword/weaving batten

by Brian Gilmour and Chris Salter
(A full description can be found in Appendix I)

6.6.1 Introduction

In total 38 objects (twenty spearheads, seventeen knives and one sword converted to a weaving batten) were sampled and analysed metallographically (see Appendix I). Fourteen of these objects were also analysed using electron probe micro-analysis (EPMA) which was used to determine the composition of both the iron matrix (except carbon) and the non-metallic slag inclusions present within the metal. Carbon contents were estimated metallographically. In specific cases the distribution of alloying elements – mainly phosphorus – were mapped using EPMA.

In all cases taper sections were removed using a small diamond-tipped cut-off wheel to cut these from the central parts of the blades, most of the sections extending to approximately halfway across the width. The sections were mounted in coldsetting resin, polished, etched (with 2% nitric acid in ethanol, ie nital) then examined and analysed. To keep the length of individual reports down, fairly brief structural descriptions are given below, but a fuller description can be found in Appendix I.

The main descriptive terms used to describe the iron-alloy structures found are:

- Plain iron – mostly medium grain ferrite (ASTM 4–5), much the same as more modern wrought iron. Usually contains very little phosphorus or carbon (up to approximately 0.1% of either, but usually not both together).
- Phosphoritic iron – mostly carbon free, large grain ferrite (ASTM 2–4) with a phosphorus content varying between approximately 0.1% and 1.0%.
- Low-carbon iron – usually fine grain (ASTM 6–8) ferrite and pearlite with between approximately 0.1% and 0.3% carbon – too low for quenching to have any noticeable effect. Similar to modern mild steel. Usually contains little phosphorus.
- Steel – iron usually with between 0.3% and 1.0% carbon, capable of being quenched plus other heat treatments to give a variety of structures. Phosphorus content usually very low.

These terms are intended as a general guide to the structures observed. Early iron is inevitably heterogeneous to some extent and usually the structures actually observed are variations or even mixtures of these, for instance low-carbon iron with patches of phosphoritic iron. Also non-metallic slag inclusions were observed in all the different kinds of iron alloy observed in this report. These inclusions varied between small to very large and originated both from smelting and subsequent smithing but these slags are only mentioned in passing here, the main emphasis being on the iron-alloy structures.

Unlike most elements which commonly occur in iron ores, phosphorus is readily reduced during

smelting in a bloomery furnace. Recent work has also shown that bloomery iron can be very variable in composition including carbon content (Crew and Salter in prep). The possibility of finding phosphorus in iron poses particular problems of interpretation which need to be borne in mind when trying to identify the particular iron alloy or alloys present. Phosphorus has a tendency to segregate in an iron bloom during smelting particularly where carbon is also present.

A specific difficulty in a study of the structure of early ironwork such as this is to distinguish between a single piece of iron which was of a mixed composition when it came out of the smelting furnace and a piece of iron with a similar structure which has actually been made by welding together different combinations of the four iron alloys defined above. Were it not for the clear evidence to have come from the study of pattern-welded weapons of the Anglo-Saxon period it would be rather more difficult to show that four identifiable iron alloys were actually exploited for their different properties at this time. However, it should be emphasised that although Anglo-Saxon ironsmiths were able to recognise, choose and use these different grades of iron there is no clearly definable division between the four iron alloys defined here; they represent a range of alloys. For instance a low-carbon iron with slightly less than 0.3% carbon is virtually indistinguishable from a steel with slightly more than 0.3% carbon. Similarly it can be difficult to judge the difference between a plain iron and either a low carbon or a phosphoritic iron. The important point is that, at this time, iron alloys were being used in different ways.

One of the main aims of the present study was to gather evidence for how these alloys might have been used for the knives and spearheads (as well as the non pattern-welded sword/weaving-batten) from an Anglo-Saxon cemetery site whereas previously the emphasis has tended to be to study the technology only of pattern-welded swords from contemporary sites of this kind. The study of pattern-welded swords has established that, without any doubt, the manufacture of these (clearly high-status) objects was a highly specialised and skilled procedure.

It is clear that by sometime in the 5th century this technique had become standardised (at least in Anglo-Saxon England) to the extent that the pattern-welded parts of these weapons were normally made of laminated strips consisting alternately of low-carbon iron and phosphoritic iron. This distinctive construction method only makes sense if these weapons were made to be polished and etched so that the patterns became visible in the way described in the early 6th century for Germanic swords by the contemporary observer Cassiodorus (Davidson 1962, 105–6). Steel is usually only found (where it is found at all) forming the tips of the cutting edges in the separately welded-on cutting edges which are themselves composite in construction and classifiable by one of the knife construction-types outlined below (Fig 6.4).

The complexity of pattern-welded swords and the way the majority of them are made make it clear that the respective properties of the four iron alloys (outlined above) were known to early Anglo-Saxon ironsmiths (or at least swordsmiths) who exploited them. This in turn indicates that the contemporary iron industry was much more sophisticated than has been generally recognised. However, until there is much more systematic technological analysis of a range of iron objects (as well as the parallel investigation of contemporary smelting processes) from each period, we will find it virtually impossible to reconstruct the framework of this industry with any degree of confidence.

6.6.2 Classification of construction types

In metallographic reports on knives in the past few years (for instance McDonnell 1992; Weimer 1993) the construction of the blades has been classified according to an existing construction typology (set out in Tylecote and Gilmour 1986, fig 1). This typology was mainly intended to show the different ways in which steel is usually combined with one or other (or more than one) of the other three iron alloys listed above to give a composite form of blade. In other words it is a measure of the use of steel in composite knife blade construction. This typology is retained in a slightly modified form for this report (Fig 6.4). Type 0 is intended to cover most blades where no steel is used, the exceptions being where a form of piled or laminated construction was observed (Type 3) and instances where the use of scrap iron was indicated by the appearance, in section, of irregularly shaped pieces separated by welds of varying orientations (Type 6).

Type 0 is divided into three subgroups separating those cases where a single piece of iron appears to have been used (Type 0a), those cases where only a single weld was observed (Type 0b), and those cases where more than one weld was observed suggesting at least some other form of composite construction (Type 0c). Overall, Type 0 can include any combination of plain iron, low-carbon iron or phosphoritic iron, as can Type 3, the iron/steel laminated construction being represented by Type 1b. So far, at least in the course of this study, no examples of mixed scrap iron (Type 6) including pieces of steel have yet been identified although these seem likely to occur. It is possible that scrap metal known to contain an appreciable steel content was separated out during recycling and used separately although no examples turned up during this survey.

6.6.3 Discussion and conclusions

Perhaps the most significant result of this analytical study was that the vast majority of the objects examined were found to be of a composite construction involving two or more of four iron alloys with

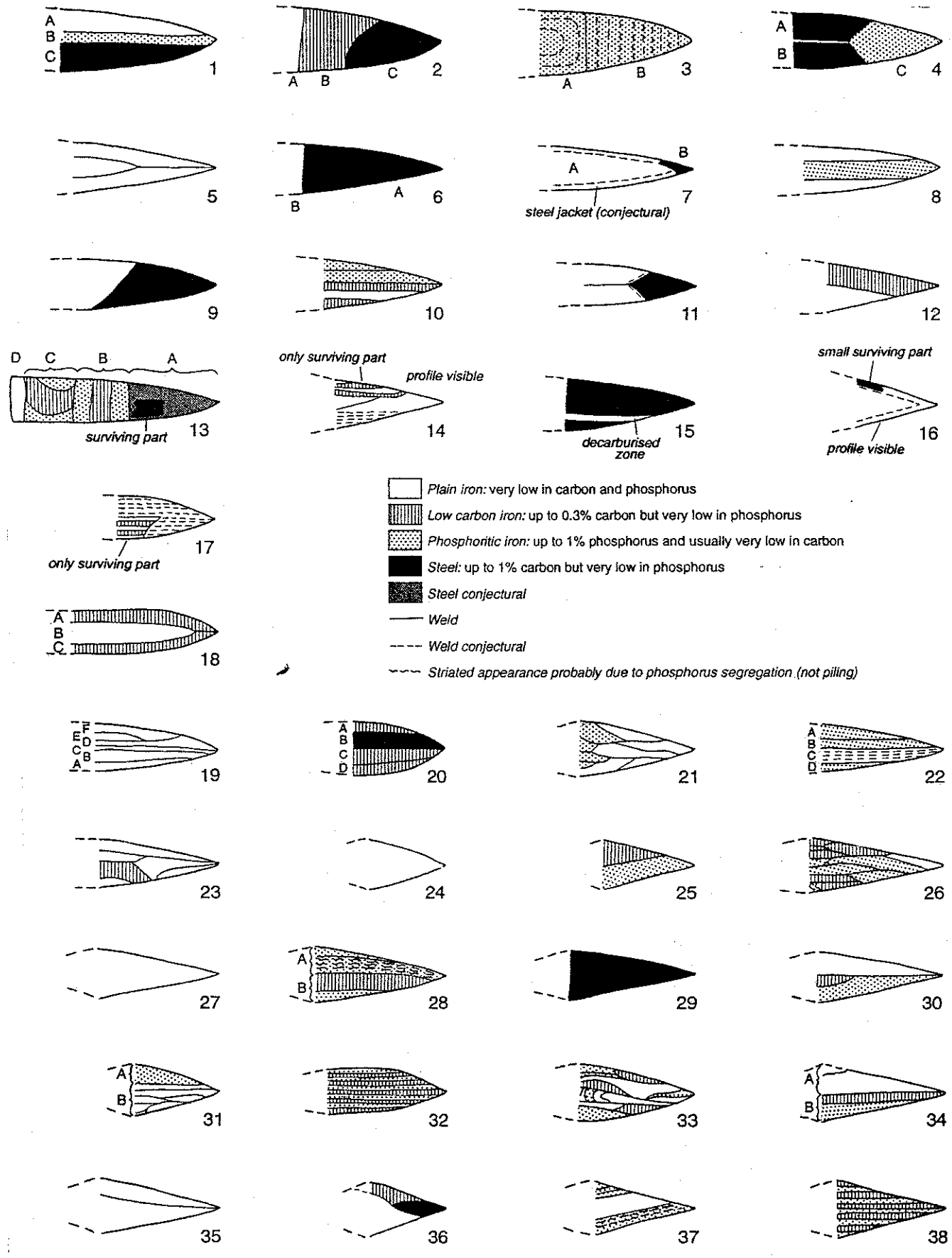


Figure 6.4a Knife construction types (S Holden)

Cross referencing numbers from samples taken for metallographic analysis

No.	BAEH No.	Oxford Sample No.	AM No.	Description
*	46.1	3114	AM1256	Knife
*	148:1	3131		Spearhead
1	458:1	3107	AM1381	Knife
2	3:4	3104	AM1382	Knife
3	19:5	3105	AM1369	Knife
4	547:1	3110	AM1383	Knife
5	156:1	3103	AM1385	Knife
6	551:1	3109	AM1384	Knife
7	428:144	3101	AM1375	Knife
8	526:20	3108	AM1376	Knife
9	29:3	3111	AM1386	Knife
10	553:1	3106	AM1387	Knife
11	436:24	3100	AM1388	Knife
12	9:52	3102	AM1389	Knife
13	42.2:22.7	3112	AM1257a	Knife back
13	42.2:22.7	3113	AM1257b	Knife edge
14	151:8	3115	AM1258	Knife
15	117:2	3116	AM1259	Knife
16	359:15	3138	AM1379	Knife
17	626:193	3139	AM1377	Knife
18	42.2:21	3140	AM912	Sword/Weaving batten
19	553:3	3117	AM1261	Spearhead
20	146:1	3118	AM1262	Spearhead
21	626:152	3119	AM1373	Spearhead
22	125:1	3120	AM1358	Spearhead
23	13:1	3121	AM1359	Spearhead
24	19:1	3122	AM1372	Spearhead
25	11:1	3123	AM1364	Spearhead
26	112:1	3124	AM1365	Spearhead
27	632:1	3125	AM1362	Spearhead
28	727:1	3126	AM1399	Spearhead
29	147:2	3127	AM1366	Spearhead
30	188:3	3128	AM1368	Spearhead
31	19:2	3129	AM1374	Spearhead
32	322:2	3130	AM1374	Spearhead
33	120:100**	3132	AM1370	Spearhead
34	453:2	3133	AM1361	Spearhead
35	405:1	3134	AM1360	Spearhead
36	151:7	3135	AM1371	Spearhead
37	1000:11	3136	AM1363	Spearhead
38	1000:12	3137	AM1378	Spearhead

* Wrongly mounted ** Associated with grave 50

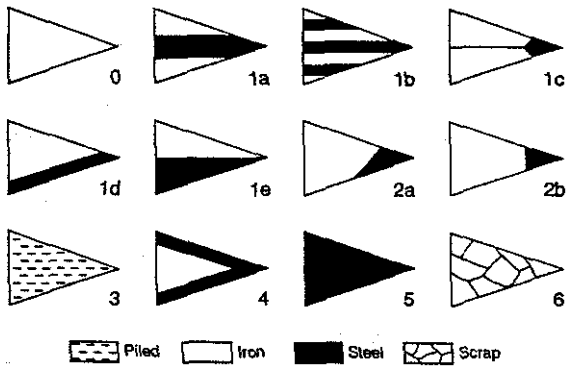


Figure 6.4b Methods of welding iron to steel (S Holden)

different properties. These are plain iron, low-carbon iron, phosphoritic iron, and steel (described more fully in the introduction), and have been shown to have been exploited as distinct iron alloys with different properties in the construction of pattern-welded weapons throughout the Anglo-Saxon period (Gilmour 1991).

In the present study a wide range of structures was observed and, overall, most noticeable was a marked contrast between the results for the knives and spearheads. The complexity of construction involving the four alloys of iron showed that the simple construction typology (suggested in Tylecote and Gilmour 1986) for knives based on the use of two iron alloys, iron (of varying composition), and steel, was misleading in that it over-simplified the range of possible structures many of which have emerged from this study and are summarised in Figure 6.4.

The position was further complicated by an addition to the four iron alloys in the form of scrap. Fairly clear evidence for the use of scrap iron was found in several of the spearheads although, possibly significantly, not for any of the knives reported here. None of the cases where the use of scrap was identified involved the reuse of steel.

Of the seventeen knives examined, eight make use of steel as a major part of their construction. In a further two knives (nos 17 and 16 in Fig 6.4), although little had escaped corrosion, in each case the way in which a small remnant of steel had survived suggested that both these knives may have originally consisted of a steel jacket welded around an iron core which had corroded preferentially during burial. In the remaining seven knives no steel was found in the surviving metal of the sections and the structures that did survive suggested that even where much of the section had been lost to corrosion steel was less likely to have been used at all.

One of these knives (no 5) seems to have been made wholly of plain (wrought) iron although the evidence of the welds suggested that a jacket of iron had been welded around a core made of very similar wrought iron. This rather curious construction seems to make no sense and may well represent a mistake on the part of whoever made this knife and possibly a jacket of steel or one of the other iron alloys was intended. One other knife (no 12) appears to have been made of a piece of plain iron welded to a roughly equal sized piece of low-carbon iron with the weld running parallel to one side.

Of the five remaining knives, four showed varying forms of horizontal (ie parallel to the main axis of the blade) banded construction, the simplest of which (no 8) consisted of a piece of phosphoritic iron welded between two pieces of plain iron which formed the sides of the blade. One blade showed up as five bands which included phosphoritic iron, low-carbon iron, and plain iron although these were not interleaved evenly which again may be an indication of a poorer standard of manufacture in this particular case. Two other blades (nos 14 and 17), where only a small part of the metal survived, showed an evenly laminated appearance with bands of plain iron interleaved between bands of low-carbon iron. Too little survived to say whether this structure was originally consistent right across this part of these two blades.

The remaining blade in which no steel was found (no 3) survived better and was of a curious but potentially significant construction. Here the whole section consisted of phosphoritic iron but there was a distinctive banded construction marked by lines of slag inclusions with a transverse weld (that is running across the blade from side to side) dividing the section into two parts. The transverse alignment of the bands in the cutting-edge piece together with a folded but otherwise similarly banded part towards the back of the blade indicates that this blade has been intentionally made in this way. With no obvious structural advantage to this arrangement the most obvious explanation for this design is for it to be an unusual form of pattern-welding and therefore was intended to be seen. On final polishing and etching it would have given a very distinctive surface appearance and although (so far) rare among early Anglo-Saxon forms of pattern-welding it is similar to some pattern-welded forms found in much later pattern-welded daggers found in south-east Asia (a relevant example of which is illustrated in Tylecote and Gilmour 1986).

Of the eight knife blades in which steel clearly formed a significant part of the construction only in some cases was the steel used in such a way as to give a steel tip to the cutting edge thereby making it harder, more resistant to wear and able to keep sharper longer. This was the case for six knives including the blade (no 13) which was also pattern-welded. The construction of this pattern-welded knife (no 13 and 13A) was much the same as that used in most contemporary pattern-welded swords except for the cutting edge with its (likely) use of a single piece of steel whereas steel used in sword blades of this period rarely, if ever, occupies the full thickness of the blade at that point.

In a very similar way to contemporary pattern-welded swords, the two composite pattern-welded strips used here (only one of which had been twisted) consisted of a combination of phosphoritic iron and

low-carbon iron. The construction of these parts was, however, much simpler than that usually found for swords. Each pattern-welded strip consisted of a single piece of low-carbon iron welded between two similar pieces of phosphoritic iron. After final polishing and etching this would have shown up in clear contrast to the black of the cutting edge part. The plain iron of the flat back strip completed what was an excellent piece of craftsmanship, using all four iron alloys to their best advantage, and a construction that must have been intended to be seen.

In one of the remaining three knife blades (no 4) steel had been used to make up the parts of the blade away from the cutting edge whereas the cutting edge part was made of phosphoritic iron. This construction, almost exactly the opposite to what might be expected, seems odd at first but the phosphoritic cutting edge is sufficiently high in phosphorus for it to be almost as hard and durable as the steel parts (with a Vickers micro hardness value of 366 HV for the cutting edge comparing to an average value of 471 HV for the steel parts and 100–150HV for a plain iron). There seems no obvious point in what seems to be an intentional construction unless this blade was originally etched so that its construction could be seen. Polishing and suitable etching would have resulted in a very impressive looking black blade with a contrasting bright white strip forming the cutting edge.

The other knife blade where steel had been used in an unexpected way can also be accounted for if the construction was intended to be seen. In this case (no 1) a piece of phosphoritic iron had been welded between a piece of steel on one side and a piece of predominantly plain iron on the other although the outer part of this would appear to be of a different composition consisting of laminations of phosphoritic iron and low-carbon iron. In much the same way as the previous example the central phosphoritic iron piece was hard enough (at approximately 300HV) to give an effective cutting edge although in this case it was not nearly as hard as the quenched steel of the side piece at (approximately 600HV). Again the only feasible explanation for this rather peculiar choice of construction is that this was intended to give an impressive surface appearance on polishing and etching.

The results for the spearheads provided a very marked contrast to those for the knives. Of the twenty spearheads examined only three were found to contain steel at all. One of these (no 29) appears to have been made completely of steel whereas another (no 36) consisted of a steel-tipped construction, the blade having been made of a larger piece of plain iron welded to a smaller piece of low-carbon iron. The other consisted of a slightly odd looking four-part sandwich (no 20) in which the steel part was one of two wider central bands, the rest of which consisted of low-carbon iron. This might represent a rather botched attempt at providing a steel-centred sandwich structure.

Of the remainder, nos 24, 27, and 35 appear to have been made simply of plain iron while nos 19, 21, 23, 26, 31, and 33 – more than a quarter of the total – appear to have been made largely of scrap iron. A fairly simple banded construction consisting of different iron-alloy combinations was used for a further five spearheads, nos 22, 28, 30, 34, and 37 while another, no 25 consisted of two halves, a piece of low-carbon iron welded diagonally to a piece of phosphoritic iron.

The structure of the remaining two spearheads, (nos 32 and 38) was rather more difficult to interpret, although they were very similar to one another. Each showed up a very distinctive, narrow banded structure consisting of alternate laminations of phosphoritic iron and low-carbon iron. This structure in each case appears to be much too regular to be the result of the forging out of a piece of iron of mixed, unevenly segregated phosphorus content. The only feasible explanation seems to be that these two spearheads are pattern welded using the layered or 'relief-map' technique found on many (more recent) south-east Asian weapons, particularly daggers. It would appear that pattern-welding for spearheads, as is likely to be the case also for knives, only began to be used during the early Anglo-Saxon period and very few are yet known, recently discovered examples being simple forms of weld pattern observed from x-radiograph on a very large (and as yet unpublished) spearhead from the Anglo-Saxon cemetery at Shenley (Buckinghamshire).

The 'sword/weaving batten' can probably be reliably interpreted as a cut-down sword on the basis of its size and shape alone, which are very similar to a few other examples noted where there can be very little doubt that this is the case (examples having been found in the Anglo-Saxon cemeteries at Spong Hill, Norfolk and Broadstairs, Kent; Gilmour 1991). Usually, where a pattern-welded sword has been used the pattern can be seen on x-radiograph to continue right to the newly cut ogival tip which would not otherwise be the case; in other words, the original end is clearly missing. The ogival tip is the diagnostic feature for identifying this object as a weaving batten. Unfortunately the sword which appears to have been used here was not pattern-welded, one of perhaps 10–20% of early Anglo-Saxon swords not to have been decorated in this way (Tylecote and Gilmour 1986).

This sword/weaving batten consisted of a low-carbon iron jacket welded around and encasing an iron core. As a sword it would not have been a particularly remarkable object.

6.6.4 Conclusions

Amongst the most notable discoveries of this study is the great contrast between the structures found for knives and spearheads. There is also the probable use of etching to highlight the construction of several (and possibly more) knives and spearheads, in particular in combination with the likely use of unusual forms of pattern-welding for two of the

spearheads, unsuspected from x-radiograph. It seems most probable that these two spearheads were polished and etched so that the patterns would have been visible. The contrast between knives and spearheads can probably be accounted for by their respective functions. The difference in the respective functions and the relatively small numbers of objects investigated makes any judgements of quality difficult and probably misleading if attempted on the basis of the findings from this one site alone. The findings from this site have illustrated the need to look at a whole range of contemporary iron artefacts if the use of different types of iron (including steel), as well as the extent of the reuse of iron as scrap iron, is to be gauged.

Similar studies from a number of contemporary sites as well as others both earlier and later in date are probably necessary before any judgements of quality can properly be attempted. Clearly other bodies of comparable material need examining to look for similar varieties of construction and evidence for the intentional use of etching techniques to show the construction, particularly to identify the unsuspected use of pattern-welding. What does seem to be particularly striking from this study is that very few, if any, of the structures are likely to have been achieved by accident. There was clearly a high degree of skill involved at this time both in the ability to choose and use the four main alloys of iron. It seems likely that at least some if not most of these alloys were being produced in more specialised iron production centres and that trade iron of the different types must have been very important economically. Much more work is needed both on iron objects and on iron production sites before anything like a satisfactory framework for this industry can be worked out.

6.7 Glass beads: a technological examination
by Catherine Mortimer

A total of 22 samples taken from twenty beads were analysed using energy-dispersive X-ray analysis in a scanning electron microscope (SEM-EDX). The results (Table 6.8) are presented as average normalised values from three areas on each sample. The glass colours analysed represent the most common colours at the site, as catalogued by Sue Hirst (see above 5.2.3.1). Analysis was carried out on a further 29 samples taken from 26 beads from the contemporary cemeteries at Mucking, Essex, providing good comparative data. Analytical details and a full consideration of the material are given elsewhere (Mortimer forthcoming).

SEM-EDX analysis determined that the translucent colourless or pale-coloured glasses were soda-lime-silica glasses of the type commonly used during the Anglo-Saxon period. Examples of decolourisation both by manganese and by antimony were discovered. The very low cobalt content (less than 0.1%) required to give a good blue colour means that, in some cases, it was not possible to determine whether the blue glasses were coloured by cobalt or iron ions. Non-destructive X-ray fluorescence analysis (XRF) has slightly better detection limits for cobalt but, even so, no cobalt was detected on a number of samples which visually looked a good cobalt blue. The blue glaze on faience melon beads from grave 66 (sample no 22) was coloured by copper in a reduced state. The glass used on this example also contains a small amount of potash (2.1% K_2O), which is not sufficient to class it as a mixed alkali (cf Henderson 1990). No samples from the translucent yellow or dark green glasses were analysed.

All the opaque glasses are soda glasses which have been adapted by the addition of various colourants and opacifiers. The opaque yellow glasses were opacified by lead tin oxide, with some very pale yellow examples having rather low lead contents. Opaque red glasses are coloured by tiny copper-rich particles, less than one micron across. These particles are most likely to be copper metal, since cuprite (copper oxide) particles of this size would be yellow (Ian Freestone pers comm). There is relatively little copper in these samples (0.2–1.7%, especially when compared with prehistoric examples (eg Hughes 1972; Freestone 1987; Brun and Pernot 1992) but the presence of iron (at 2.3–5.8% Fe_2O_3) would have promoted reduction and precipitation of the copper-rich droplets. An opaque orange glass (no 21) was also coloured by copper droplets, but additional opacity was due to bubbles and small amounts of tin oxide crystals. No quantitative analysis was carried out on the opaque green and blue glasses at the site but XRF analysis of grave 91 Δ42 suggests it was coloured by copper and its oxide form, conforming to the results of SEM-EDX on a sample from Mucking and XRF results on material from other Anglo-Saxon cemeteries (eg Bayley 1987). However, two opaque green glasses from Apple Down must have been coloured by some other means, as they contain no copper (Henderson 1990). Opaque white glass was rarely observed on Barrington beads and often proved to be pale yellow on closer examination. It was not possible to obtain a good sample of this glass colour for SEM-EDX analysis, although non-destructive analysis of a bead from grave 5 Δ71 showed that the opaque white trails were tin opacified. This suggests that the opaque white glasses are probably a variant on the opaque yellow glasses.

Examination of the inclusions found in the Edix Hill glasses produced many interesting observations. As this sort of study is rarely published, there is little with which to compare the results and the complexity of the structures revealed requires much more thorough discussion than can be entered into here. It seems likely that the size, frequency, and distribution of tin oxide and lead-tin oxide crystals in opaque yellow glasses reflect technological attributes – in many cases, the Barrington examples are inhomogeneous and also include many bubbles. Some silicate crystals (probably albite ($NaAlSi_3O_8$) and devitrite ($Na_2Ca_2Si_6O_{16}$)) are devitrification products formed

Table 6.8 Composition of glass beads from Barrington, by SEM-EDX analysis, percent weight

Sample	Artefact ID	Colour	Other	Na_2O	MgO	Al_2O_3	SiO_2	P_2O_5	S	Cl	K_2O	CaO	TiO_2	Cr_2O_3	MnO	Fe_2O_3	CoO	CuO	ZnO	SnO_2	Sb_2O_3	BaO	PbO
Translucent, colourless or very pale colours																							
1	428Δ11	pale		17.3	1.3	2.5	66.2	0.1	0.2	1.0	1.0	7.0	0.2	nd	1.7	1.3	nd	nd	nd	0.1	0.4	nd	nd
2	428Δ6	clear/ green		19.6	1.0	2.1	68.1	0.1	0.2	1.0	0.6	5.8	0.1	nd	0.2	1.0	nd	0.3	nd	0.1	0.1	nd	0.2
3	436Δ8	pale blue		19.0	1.1	2.7	65.8	nd	0.2	1.0	0.7	7.2	0.2	0.1	0.3	1.3	nd	0.1	tr	0.1	0.3	nd	0.3
4	436Δ1	pale blue		19.5	1.2	2.7	65.2	0.1	0.2	0.9	0.7	6.2	0.2	0.1	0.2	1.2	nd	0.6	nd	0.1	0.7	nd	0.5
Translucent blue or green																							
5	9Δ7	blue		18.7	1.7	3.0	67.5	0.2	0.1	0.7	0.8	5.7	0.2	0.1	0.1	0.8	nd*	nd	nd	nd	0.4	nd	0.5
6	58BΔ2	blue		17.5	1.0	2.5	66.8	0.2	0.3	1.0	0.7	7.2	0.1	0.1	1.1	1.3	nd*	nd	0.5	nd	0.4	0.3	nd
7	58BΔ4	blue		18.8	1.3	2.6	66.4	nd	0.3	1.0	0.6	7.0	0.5	0.1	0.5	1.3	nd*?	nd	0.1	nd	0.5	nd	nd
8	322BΔ38	green		19.0	0.9	2.2	70.8	nd	0.1	1.1	0.4	4.5	nd	0.1	0.2	0.9	nd*	nd	nd	nd	0.5	nd	0.1
9	428Δ35	blue		20.2	0.8	2.1	66.5	nd	0.2	1.0	0.5	5.5	0.1	0.1	0.8	1.1	*0.1	0.1	0.5	nd	0.4	nd	nd
10	428Δ83	blue		17.5	1.0	2.4	69.7	nd	0.3	0.9	0.5	5.7	0.2	0.1	0.2	0.6	nd	nd	0.1	nd	0.2	nd	0.5
Opaque yellow																							
11	58BΔ12	op yellow	crystals	9.6	0.5	2.4	46.8	0.1	1.0	0.7	0.5	3.3	0.3	0.1	0.5	0.7	nd	0.2	nd	4.5	np	0.2	29.4
12	428Δ16	op yellow	crystals	14.4	1.0	2.6	55.0	nd	nd	0.3	0.9	5.2	0.3	nd	1.2	1.0	0.1	tr	0.7	1.8	np	nd	16.0
13	428Δ64	op yellow	crystals	11.2	1.1	2.6	46.3	0.2	nd	0.1	nd	2.6	nd	0.3	1.6	1.4	nd	1.3	nd	2.9	nd	nd	28.4
14	436Δ31	op yellow	crystals	18.4	1.4	2.4	64.1	0.2	0.2	0.9	0.8	6.2	0.1	nd	0.5	1.3	0.1	nd	0.3	1.0	np	0.2	2.0
15	436Δ7	op yellow	crystals	20.8	1.7	2.8	64.5	0.1	0.2	0.8	0.6	5.1	0.1	nd	0.8	1.0	0.1	nd	nd	0.6	np	nd	0.9
Opaque red and orange																							
16	9Δ63	op red	spots	14.6	1.3	2.7	61.7	0.2	0.2	0.8	1.0	6.5	0.2	nd	1.1	5.8	nd	1.7	0.1	0.3	np	na	2.1
17	9Δ63	leaded area	spots	16.7	1.4	3.0	60.6	nd	nd	0.6	0.8	4.2	0.1	nd	0.6	2.8	nd	0.5	0.1	1.2	np	na	7.7
18	9Δ81	op red	spots	18.4	1.8	3.3	63.1	0.1	0.1	0.7	0.8	4.6	0.2	nd	0.8	3.5	nd	0.2	0.1	0.2	np	nd	2.2
19	428Δ64	op red	spots	15.8	1.4	2.5	61.6	nd	nd	0.7	1.0	5.6	0.2	nd	1.7	2.3	nd	1.2	0.1	0.5	np	nd	6.0
20	436Δ11	op red	spots	15.3	1.2	2.6	54.5	nd	0.1	0.7	0.8	4.8	0.1	nd	1.1	2.7	nd	0.6	0.2	1.9	na	0.2	13.3
21	9Δ41	op orange	+	18.6	1.3	2.6	63.1	0.1	0.2	0.9	0.9	6.7	0.2	0.1	1.4	2.0	0.1	1.0	0.2	0.2	np	nd	0.8
Melon bead with faïence body																							
22	322BΔ60	blue 'glaze'		20.7	0.3	1.0	70.4	nd	0.1	0.9	2.1	1.1	0.2	nd	nd	0.2	nd	2.7	0.2	0.4	np	nd	0.2

nd = not detected, na = not analysed, tr = trace, op = opaque, + = bubbles and crystals, */*? = Co detected/possibly detected with XRF

on cooling, but others seem likely to be relict batch material, or possibly minerals pulled from the walls of the crucible during heating. Small amounts of ironworking slag particles were found on an opaque brown/red sample from Mucking, Essex (Mortimer 1996) and a further possible example was observed at Edix Hill (on an opaque red bead from grave 15, Δ13), but this was only studied with non-destructive surface SEM-EDX. In many of the samples, fragments of iron oxide scale could be observed on the inside of the bead and sometimes incorporated within the glass. These fragments were pulled from the surface of the iron rod around which the beads were wound, or possibly from iron rods used to stir the molten glass. In some cases, the glass was sufficiently hot to cause reactions between the iron oxide and the glass matrix. For example, the presence of the iron oxide affected the development of copper droplets in opaque red glasses, although the area concerned is so small as to be unnoticeable to the naked eye. However, some of the green glasses may originally have been colourless or only lightly-tinted but were accidentally contaminated during working with high levels of iron, giving a darker green colour.

The Edix Hill samples are generally very similar compositionally to those from Apple Down and Mucking, the only other sizeable groups of beads from an Anglo-Saxon cemetery to be analysed quantitatively (Henderson 1990). The compositional homogeneity within the translucent glasses may suggest a limited supply of glass, from a single source, was available at this period. However, the increasing dataset for this period indicates that there may well have been a small degree of technological innovation or variation in glass sources, because of the mixed alkali and lead silicate glasses found at other sites.

6.8 Punchmarks on the copper-alloy artefacts
by Catherine Mortimer

Many of the copper-alloy artefacts at Barrington were decorated with small punchmarks. Such marks are relatively common on early Anglo-Saxon metal artefacts and their designs can be compared with those of pottery stamps on cremation vessels. The marks on the copper-alloy artefacts were studied to investigate punch manufacture and use. It was also thought that it might be possible to characterise punchmarks made by individual punches, in order to identify groups of artefacts made by the same metalworker or in the same workshop.

The first stage of research was to develop a study method; a full discussion is available elsewhere (Mortimer and Stoney 1996). Silicon rubber impressions were taken from the surfaces of the artefacts and examined using a scanning electron microscope (SEM). The backscattered detector of the SEM was especially useful during the study as it showed topographic relief, even where the surface was only slightly raised. The shapes and sizes of several punchmarks from each artefact were recorded in detail.

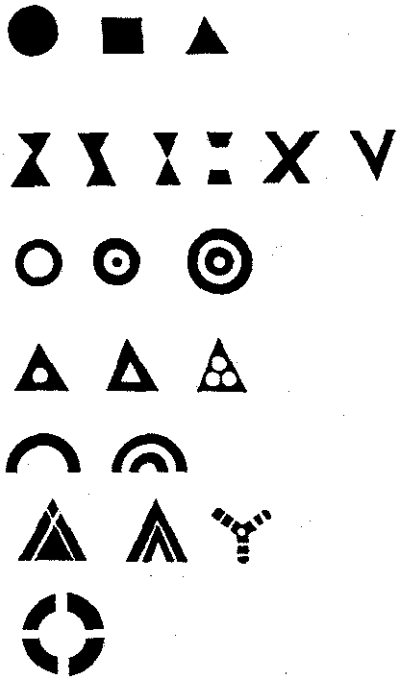


Figure 6.5 Punchmarks

A classification of punch-types was proposed (Fig 6.5), on the basis of research on the material from Edix Hill and from other contemporary sites. The classification is based on the methods of punch manufacture. Group-a comprises solid geometric shapes, such as solid circles, squares or triangles. These shapes could have been made just using a file on the outer edges of the punch tip. Group- b punches are those which are adapted from Group-a, but have more elaborate outlines, such as angular Z- or S-shapes, paired triangles or paired parallelograms, X- and V-shapes. More detailed work would be necessary to make these punches, but again only a file would be needed. Common Group-c punches include ring, ring-and-dot, semi-circular and double semi-circular designs. The basic outline of these punches would have been made as in Group-a, with the internal features added by the use of a finer punch, a procedure described by Theophilus (Hawthorne and Smith 1963, 92). Group-d punches are those with internal divisions made by filing or engraving, for example, divided triangles, divided Vs and divided Ys. Both internal filing/engraving and punching were used to make Group-e punches (not seen at Edix Hill 1989–1991), such as rings with additional straight lines.

Only 12 types of punch were used, amongst the 45 copper-alloy artefacts which were successfully studied from the 1989–1991 excavations, and these belong to only three of the groups outlined above (Groups-a, b and c). The use at the site is summarised in Table 6.9. Some artefacts have more than one type or size of mark, eg four types of mark on a wrist-clasp

hook from grave 19 (Δ22). The most common punchmark type at the site was the solid circular mark, often used in repoussé work (raising 'bumps' from the back of the artefact), especially on thin sheet metal artefacts such as wrist-clasps. The majority of these marks were 1–1.5mm in diameter. These and marks from another Group-a punch, a solid triangle, were used on 32 artefacts. Marks from Group-b punches were found on five artefacts and marks from Group-c punches were found on thirteen artefacts. Many of these marks were between 1.5mm and 2mm in greatest dimension.

Except for pairs or sets of objects, it was not possible to identify instances where one punch was used on more than one artefact. Much of this observed lack of 'matching' was due to poor surface preservation and to variability in application. It was particularly difficult to characterise the solid circular punchmarks, partly because the form is so simple, but additional information could sometimes be gained by tilting the sample and using secondary electron images in an examination of the profile of the punch tip. In this way, it could be seen that many of the circular punchmarks were rounded at the top, presumably deliberately, to avoid piercing the sheet metal.

The style and quality of punchmark placement over the surfaces of objects may be characteristic of the production of particular period, or perhaps of particular individuals. In most of the artefacts from the 1989–1991 excavations, the marks were placed in simple, nominally-symmetrical designs, often as 'framing lines' around the outside of an artefact or, as in the case of wrist-clasps, in rows, zig-zags and diagonals. Where punchmarks have a 'sense', for instance the 'feet' of a semi-circular or V-shaped punchmark, the feet normally point towards the edge of the artefact. This layout seems to be typical for early Anglo-Saxon non-ferrous artefacts as a whole. It is much more difficult to quantify or appraise the standard of punchmarking, but it is noticeable that the 'straight rows' of punchmarks are often anything but straight, and their spacing is very uneven (see eg grave 3 Δ11 (loop) and grave 3 Δ10). This suggests that the metalworkers did not use guidelines in laying out punchmarks.

Comparative material from earlier excavations at Barrington and neighbouring Haslingfield (curated at the Ashmolean Museum, Oxford and the Cambridge University Museum of Archaeology and Anthropology) was also examined, although rather more briefly. The range of punchmarks seen was similar to that from the 1989–1991 excavations, with the addition of marks from one Group-a punch and three Group-d punches. One of the small long brooches from Haslingfield (Ashmolean 1909, 234a) showed intriguing 'mistakes' in its punchmarking – two double semi-circular punchmarks were placed upside down and a double hit was visible. Despite this, the punch was of good quality.

The comparative collections were from 19th century or early 20th century excavations and there is some evidence for biases in artefact retention. For instance, there were very few wrist-clasps in the museum collections, compared with the number found in the recent excavations. Comparison was therefore made with the punchmarks on copper-alloy artefacts from two Anglo-Saxon cemeteries in Norfolk, Morning Thorpe and Spong Hill, which were studied from the published drawings (Green *et al* 1987; Hills *et al* 1984). This showed that there is a substantial overlap in the types of punchmarks found at all the sites, but that the frequencies of use are different. Most noticeably, Group-c punches, especially those used for ring marks, were recorded very frequently at Morning Thorpe and amongst the museum collections, but rarely amongst the 1989–1991 material; however, it can be difficult to differentiate between ring marks and circular dots without examination at high magnification and/or the use of silicon rubber impressions. Similarly, Group-a punches, especially circular ones, were used very frequently at Morning Thorpe, but not normally in repoussé work as at Edix Hill 1989–1991. Further studies of artefacts from a larger number of modern excavations might reveal whether this patterning relates to the work of individual metalworkers, the types of artefact found, the social status of the individuals buried with the artefacts, to other cultural or even chronological factors.

Double semi-circular punchmarks proved to be one of the commonest punchmark-types. Silicon rubber impressions from nineteen museum objects with these punchmarks were studied and recorded in the same way as the objects from the Edix Hill 1989–1991 excavations. Many of the objects were too poorly-preserved to give good-quality images of the punchmarks. However, it was clear that a variety of different shapes are included within the double semi-circular punchmark-type, even if only the outline of the mark could be described – for example, some marks are more like double arches, as the 'legs' of the mark are straightened out and others have 'horse shoe' outlines. Where the marks were reasonably well preserved, attempts to match marks, based on size and shape, were negative, except between pairs or sets of artefacts assumed to have come from the same grave (most of the artefacts from museum collections have no proper associations).

The lack of convincing matches between artefacts suggests that a very large number of punches were used to decorate the artefacts at Barrington and Haslingfield; this implies easy access to punches. However, the manufacture of punches in Groups-b to e would have required a high degree of skill and access to high temperatures, for instance for annealing (Group-a punches would have been much easier to make and maintain). There does seem to be a dichotomy between the considerable dexterity and knowledge needed to produce these punches and the low level of skill shown in their application. This may imply that the manufacture of punches was not always carried out by the people who used them.

Table 6.9 Punchmarks on Barrington, Edix Hill 1989–91 material

Artefact			Marks					
Grave	**Small find no**	**Artefact type (and part where relevant)**	**Macro-ID**	**Group**	**Micro-ID**	**Profile**	**Greatest dimension: range of values (no of examples) in mm**	**Plate**
3	4Δ10	wrist-clasp (hook)	circular	a	oval 'waisted'	applied at angle, flat at tip	1.07-1.34 (3)	1 & 38
		wrist-clasp (loop)	circular	a		applied at angle, flat at tip	1.60-1.70 (5)	2
3	4Δ11	wrist-clasp (hook)	circular	a			*c* 2	3
		wrist-clasp (loop)	circular	a	oval	applied at angle, flat at tip	2.09	4
			semi-circular	c	comma			
3	4Δ17	wrist-clasp (hook)	circular	a	oval	poor sample, but flat at tip	2.19	5
3	4Δ17	wrist-clasp (hook)	circular	a	oval		2.19	5
			semi-circular	c	comma		1.65-1.68 (3)	6
		wrist-clasp (loop)	circular	a	oval angular	no info gained	1.05	7
10	16BΔ1	annular brooch	triangular	a	pyramidal		0.84-0.99 (3)	8
10	16BΔ11	wrist-clasp (loop)	circular	a		rounded, slightly flat tip	1.10-1.20 (4)	9
		wrist-clasp (hook)	circular	a	rather angular	rounded, slightly flat tip	0.93-1.25 (9)	10
10	16BΔ12	wrist-clasp (loop)	circular	a	oval/ hexagonal	angles down, flat at tip	0.93-1.05 (5)	11
		wrist-clasp (hook)	circular	a	oval		*c* 1	12
13	20BΔ16	spangle on ring (Ag?)	circular	a		poor sample, ?rounded	0.98	13
13	20BΔ22	spangle on ring (Ag?)	circular	a		rounded with flatter tip	1.13-1.14 (3)	14
13	20BΔ32	small long brooch	semi-circular	c	mis-shape		1.26-1.32 (4)	15
13	20BΔ33	cruciform brooch	Z	b			1.17	16
13	20BΔ35	disc brooch	ring and dot	c	poor peel		*c* 4.6	
19	44AΔ13	wrist-clasp (hook)	circular	a	circular		1.19, 1.20	17
19	44AΔ21	wrist-clasp (loop)	circular	a			1.33-1.45 (3)	18
19	44AΔ22	wrist-clasp (hook)	circular	a	small, angular	slightly flattened on tip	0.98-1.03 (5)	19
			circular	a	large	flattened on tip	3.02	20
			paired Δ	b			*c* 2.7	21
			three dots in a frame	c			(no complete examples) *c* 2.5	22
19	44AΔ22	wrist-clasp (loop)	circular	a		very flat on tip	1.17-1.22 (3)	23
			X	b			(no complete examples) *c* 2.5	24
19	44BΔ45	strip	paired lines	b	may be repouss		*c* 1.7	25
19	44BΔ46	wrist-clasp	circular	a	small, polyhedral	angled, then flat right at tip	1.15-1.30 (4)	26
			circular	a	large (broken)		*c* 3	
19	44BΔ47	wrist-clasp (loop)	circular	a	small, angular	applied at angle, flat at tip	1.81, 1.92	27
			circular (or ring?)	a/c	large		*c* 2.5	
19	44BΔ60	wrist-clasp (hook)	circular	a	no sample			
19	44BΔ62	wrist-clasp	circular	a	bean shaped	possibly rounded at tip	1.70, 1.74	28

Table 6.9 Punchmarks on Barrington, Edix Hill 1989–91 material (*cont*.)

Artefact			Marks					
Grave	**Small find no**	**Artefact type (and part where relevant)**	**Macro-ID**	**Group**	**Micro-ID**	**Profile**	**Greatest dimension: range of values (no of examples) in mm**	**Plate**
19	44BΔ87	wrist-clasp (frag)	circular	a	no sample		*c* 1.5	
19	44BΔ2	fitting	Z	b			2.17	29
20	45Δ1	tweezers	double semi-circular	c	curves joined at either end		1.74-1.99 (6)	30
53	156Δ2	buckle	ring?	c?	na			
53	156Δ3	small long brooch	double semi-circular	c	applied at an angle		1.81, 1.82	31
53	156Δ5	small long brooch	double semi-circular	c	applied at an angle		1.83, 2.00	32
66	322BΔ17	brooch	ring	c	oval		1.56? 1.76	33
66	322BΔ62	small long brooch	ring	c	oval		1.70, 1.70	34
69	359Δ2	wrist-clasp (hook)	circular	a	oval	flat on tip	1.38-1.47 (3)	35
79	428Δ1	plate	circular	a	poor sample	possibly rounded at tip		
79	428Δ1.14	plate	circular	a	poor sample	no info. gained	*c*1	
79	428Δ1.1	plate with rivets	circular	a	poor sample	no info. gained	0.78, 0.87	
79	428Δ10	plate	circular	a	no sample			
79	428Δ11	plate	circular	a	no sample			
79	428Δ40	plate	circular	a	no sample			
79	428Δ41	plate	circular	a	no sample			
79	428Δ141	plate	circular	a	no sample		*c*1.2mm	
96	547Δ5	small long brooch	semi-circular	c			*c* 2.5	36
96	547Δ4	disc brooch	double ring-and dot	c			(inner ring diameter) 2.89, 2.90 outer ring *c* 5	37
Unstrat	1000Δ48	wrist-clasp	circle in triangle	c	no sample			
			circular	a	no sample			

Notes: 1. The term 'largest dimension' makes sense on circular, ring marks, etc but on other shapes other dimensions are used. Refer to Fig 6.5
2. Mark details are give in bold if the punch is used from the back (repouss). NB some wrist-clasps have marks made from both sides.
3. na = not analysed (eg peel not taken or peel was not investigated).

6.9 Funerary beds (Graves 18 and 60) Incorporating reports by Richard Darrah, George Speake, and Jacqui Watson

6.9.1 Introduction

Amongst the recently excavated graves were two 'bed-burials', affording a welcome opportunity to undertake a detailed study of this rare phenomenon. The first found was the more fully preserved example in grave 18, the early recognition of which enabled the excavators to record the exact position of each surviving iron fitting in the grave (Figs 3.71 and 6.6). The evidence from both graves was subjected to careful analysis by a team comprising Richard Darrah, George Speake, and Jacqui Watson, with the aim of discovering as much as possible about the structure of the beds from the evidence of both the excavation records and the wood, textile, and leather remains adhering to the iron fittings. Altogether, however, the evidence proves very difficult to understand, so that no complete and certain reconstruction of the Edix Hill beds is possible.

6.9.2 The data

Grave 18

The metalwork associated with the bed in grave 18 comprised three types of fitting:

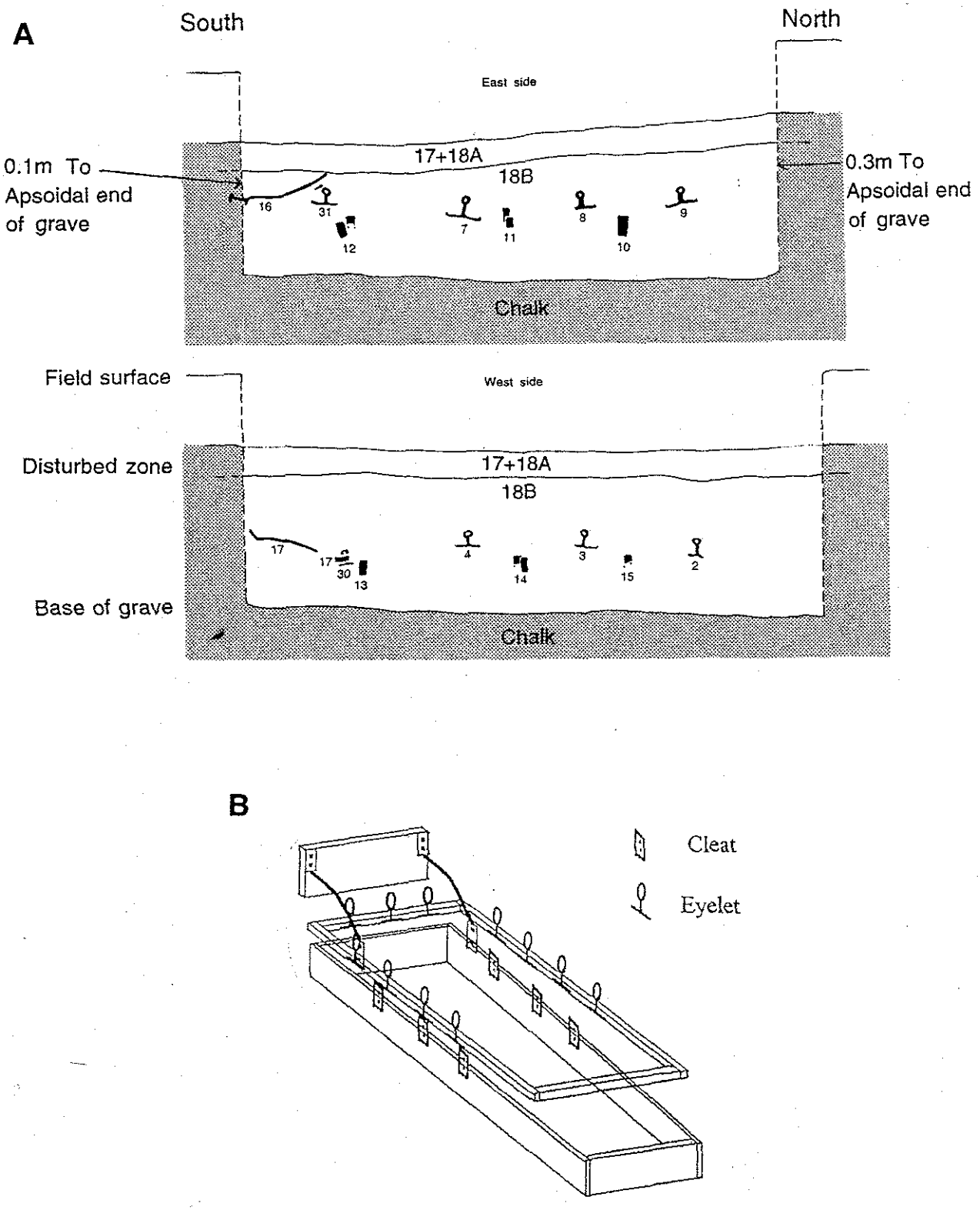


Figure 6.6 (a) Sections of grave 18B showing the positions of the metalwork associated with the bed at the sides of the grave (top section reversed to give same orientation, scale 1:20), and (b) The metalwork of the bed in its reconstructed positions (computer reconstruction by R Darrah)

1 Six double cleats consisting of pairs of rectangular plates held together by two rivets. There is mineral-preserved wood on the inner surfaces of the plates and textile on the outer surface which faced into the bed structure rather than towards the grave side (Fig 3.40).
2 Eleven large eyelets with mineral-preserved wood on the shanks and upper surfaces of the upturned ends of the shanks. There is textile on the lower surfaces of the upturned ends of the shanks in four cases and the remains of leather strapping in the ring loops of all of the eyelets (Fig 3.39).
3 Two curved bars identified as headboard stays, with flattened ends each joined to rectangular cleat plates by two rivets. There is mineral-preserved wood on the inside surfaces of the flattened ends and the cleat plates, and textile over the twisted middle portions of the bars (Fig 3.41).

Grave 60

Two of the types of fitting found in grave 18 were represented in grave 60, and a third type of fitting was also found.

1 Ten eyelets, with mineral-preserved wood on the shanks and upper surfaces of the upturned ends of the shanks. At least two had traces of leather in the loops and one textile on the lower surface of the upturned ends of the shanks (Fig 3.52).
2 One headboard stay with associated cleat plate and mineral-preserved wood on the end of the stay, and some textile (Fig 3.52).
3 One cleat plate with two nails, further encased in a nailed metal binding, containing mineral-preserved wood, with some evidence of textile (Fig 3.52).

The encased cleat plate from grave 60 is both different in form and was found in a different position from the six double cleats in grave 18. Although the evidence from the disturbed grave 60 is clearly incomplete, there is no basis for arguing that such double cleats have been lost from this grave. The two bed structures apparently differed in this respect.

From the evidence of the mineral-preserved wood, both structures appear to have been made entirely of ash (*Fraxinus* sp.).

6.9.3 Analysis

Even though the absence of double cleats from grave 60 suggests that the structure there may have been a simpler one, it is most appropriate to begin an account of the attempts to reconstruct a bed with the evidence from grave 18, where it appears that all of the iron fittings may survive, and the mineral-preserved organic evidence is more detailed.

6.9.3.1 The double cleats

In grave 18, the double cleats lay lowest, and thus ought to provide evidence for the structure closest to the base of the bed. The double cleats lay in two lines along, and more or less parallel with, the sides of the grave-cut. They stood vertically: that is, with their plates standing lengthways in planes parallel with the vertical sides of the grave-cut. They were all at one level about 0.15m above the base of the grave-cut.

These double cleats had held at least two lengths of wood together on either side of the structure, one above the other. Two distinct areas of contact between iron and wood can be seen on the inner faces of the plates, with a gap between them measured at 5mm on one pair of plates (Δ13). The lower piece of wood was thinner than the upper, from 20.3–23.6mm across (Table 6.10). There is evidence that the lower parts of the cleats had dug into the wood, so the plank or board itself may have been a little thicker. A greater thickness of wood was held in the upper part of the cleats, from 36.2–39mm. The depth of wood held within the cleats varied from 30–40mm (lower board) and 40–60mm (upper board).

The grain of the wood found on all the inside faces of the cleat plates came from the longitudinal section of a piece of timber (Table 6.10). The grain of the lower board was consistently a tangential longitudinal section (TLS), meaning that there was probably a single long length of wood held in the lower part of the double cleats on either side of the bed. The height of the cleats above the base of the grave implies planks about 0.15m wide. The minimum length of these planks would have been 0.95m. It is possible that the two planks together formed a tapering rather than a parallel-sided structure, with one double cleat on the west side of the grave (Δ14) having been displaced towards the side of the grave-cut. By the head-end of the grave the lines of cleats are 0.75m apart, at the lower end 0.65m. A tapering structure 1.8m long would be able both to accommodate a body comfortably and to fit into the grave-cut. The double cleats are not evenly spaced down either side but their spacing was consistent on both sides.

The evidence from the upper part of the cleats is much less straightforward. Details of the wood grain can be observed on all twelve inner faces, and the evidence is highly varied, especially on the western side (Table 6.10). In some cases (Δ13 on the west side) the grain even differs on opposite plates of one double cleat, suggesting that two planks may have been clamped together here. Similarly, anomalies in the wood grain on the upper rivets in two double cleats (Δ13 and Δ15 on the west side) indicate that there was a joint between two pieces of wood in the cleats here. Altogether, the evidence points to a number of separate pieces of wood in the upper part of the structure rather than continuous planks.

Table 6.10 Evidence from the cleat plates from grave 18

No	Grave side	Grain direction on upper part[4]		Grain direction on lower part[4]		Plank thickness[2] between the inner faces of the plates, mm		Cloth
		outside plate	inside plate	outside plate	inside plate	upper	lower	if present on the outer face of the inside plate
10	E	RLS ea	RLS	TLS s	s	39.0	20.4	Y
11	E	TLSa	OTLSa	TLSs	TLSa	–	–	Y
12	E	RLSa	RLSs	TLSa	TLSa	39.0	21.6	Y
13	W	RLS s	OTLSa	TLS	TLS	(10.6 + 25.6)	23.6	Y
14	W	RLSea	TLSea	–	–	–	–	Y
15	W	ORLSa	RLS	TLS	–	(14.4 + 22)	21.6	Y

Table 6.11 Microscopic wood grain analysis of the eyelets from grave 18

No	Grave side	Grain direction[1]		Thickness mm	Leather position, hours[3]	Cloth[2]
		vertical[4]	horizontal[5]			
2	W	TLS		32.4	/	–
3	W	TLS	RLS	33.3	10,4	yes
4	W	TLS	RLS	34.7	7	yes
5	S	TLS	RLS	28.2	12	yes
6[6]	S	TLS?	RLS?	28.1	5,12	–
7	E	TLS	RLS	35.5	9,1	
8	E	TLS	RLS	36.5	12	
9	E	OTLS	ORLS	36.3	12	–
18	S	TLS	RLS	30.8	6,12	yes
30	W	OTLS	ORLS		6,12	
31	E	TLS	RLS	35.5	10,3	

[1] The grain directions are taken from Jacqui Watson's drawings.
[2] Data from C Honeycombe's conservation notes. Use of yes indicates that cloth is present, otherwise no cloth was seen
[3] Shows the position on a clock face of the leather strapping
[4] Grain direction seen on the shanks of the eyelets, where no direction is given this has not been recorded
[5] Grain direction seen on the turned out shanks of the eyelets (on the upper surface), where no direction is given this has not been recorded
[6] Eyelet 6 has an impression of ash on the upper surface of the eyelet, in its current position this ash would get in the way of a leather strap feeding through the eyelets

In evaluating the evidence from the upper part of the cleats, it should be noted that ash wood splits very easily along the grain. It is usually split radially but may also be split tangentially. As the grain is straight, it can produce long, straight and flat pieces of knot-free timber. There is therefore no reason why lengths of ash should need to be joined end-to-end in a structure of these dimensions. This implies that some special structural or functional reason is to be sought for the variation in the upper part of the cleats. As yet, however, there is no obvious answer to this puzzle.

6.9.3.2 The eyelets

Of the eleven eyelets, eight also lay in parallel lines down each side of the grave. They were found at a higher level than the cleats, and it is therefore reasonable to suppose that they formed part of the superstructure of the bed held in the upper part of the double cleats. Unfortunately the wood grain evidence on the eyelets does not clarify matters (Table 6.11). The eyelets at the sides were found standing vertical with the loops uppermost and with their length parallel with the grave side. Their bases

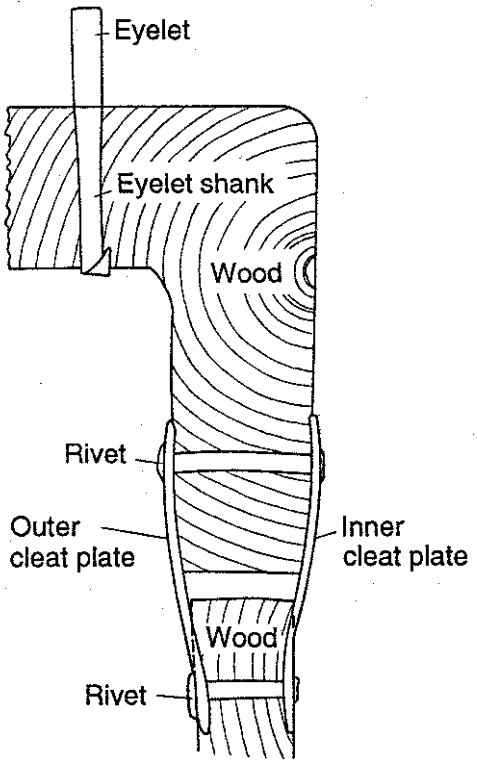


Figure 6.7 Suggestion for the shape of the wood used to join the cleats and eyelets (after Richard Darrah)

were 35–40mm above the top of the two lines of cleats. The other three eyelets were found in a less regular row at the head-end of the bed lying with their loops towards the near end of the grave. It is likely that these once stood upright in a row but were displaced as the structure collapsed or was broken.

The lines of the eyelets at the sides are in fact slightly outside those of the double cleats. This is quite clear on the eastern side of the grave, and becomes so on the western side if the putatively displaced double cleat Δ14 is moved into line between Δ13 and Δ15. While the double cleats may represent a tapering structure, the eyelets appear to represent a straight and parallel-sided structure some 0.77m wide. The regular layout of the side eyelets apart from those at the disturbed head-end, and their consistently upright position, imply that they have not been displaced in any significant way.

The evidence of wood grain on the eyelet shanks indicates that they had all been hammered down through drilled holes in pieces of ash wood 33mm thick on the western side, 36mm thick on the eastern side, and 28mm thick at the head-end. The grain direction on the eyelets does not match with that in the upper parts of the double cleats. It is, however, consistent on all the eyelets on each long side, suggesting that each group was fitted to a single piece of wood. Similarly, two of the three eyelets at the head-end have consistent grain patterns. One suggested explanation of the position of the eyelets is that they were fitted to a ledge overhanging the side of the bed, on a piece of timber of inverted L-shape in cross-section (Fig 6.7). If so, this could have been integral with at least one of the pieces of wood inferred to have been held in the upper part of the pairs of cleats. It is also, however, possible that the eyelets in grave 18 derive from a quite separate construction laid over the frame represented by the double cleats.

6.9.3.3 The headboard stays

Just as the eyelets at the head-end of the bed are manifestly disordered, the headboard stays had fallen downwards and twisted from what would have been their original position. It is possible that the headboard was broken to make it fit into the grave-cut. From the angle of the wood grain preserved on the stays it has been calculated that the headboard would have leant backwards at an angle of 100° from the bed. The stays had double cleats at the lower end to attach them to some part of the

Table 6.12 Evidence from the ends of the headboard stays from grave 18

No	Grave side	Grain direction[1]		Position	Plank thickness,[2] of the plates, mm	Depth of wood[3] present on the inner face of the outside plate, mm
		outside plate	inside plate			
16	E	TLS	–	side	unknown	60
17	W	RLS	–	side	unknown	60
16	E	TLS	–	head	41.8–45	–
17	W	–	TLS	head	46–49.5	–

L= longitudinal O= oblique R= radial S= section T= tangential
Lower case letters refer to the wood grain and whether it runs straight across the cleat or at an angle,
a = angled s = straight, ea = edge angled which implies straight grain
[1]The grain directions are taken from Jacqui Watson's drawings. The wood grain was on the inner faces of the cleats
[2] Plank thickness is generally the length of the rivet between two plates. Where two values are given there appear to be two separate pieces of wood sandwiched between the cleat plates
[3] Depth of wood refers to the maximum length of the plate which shows wood grain

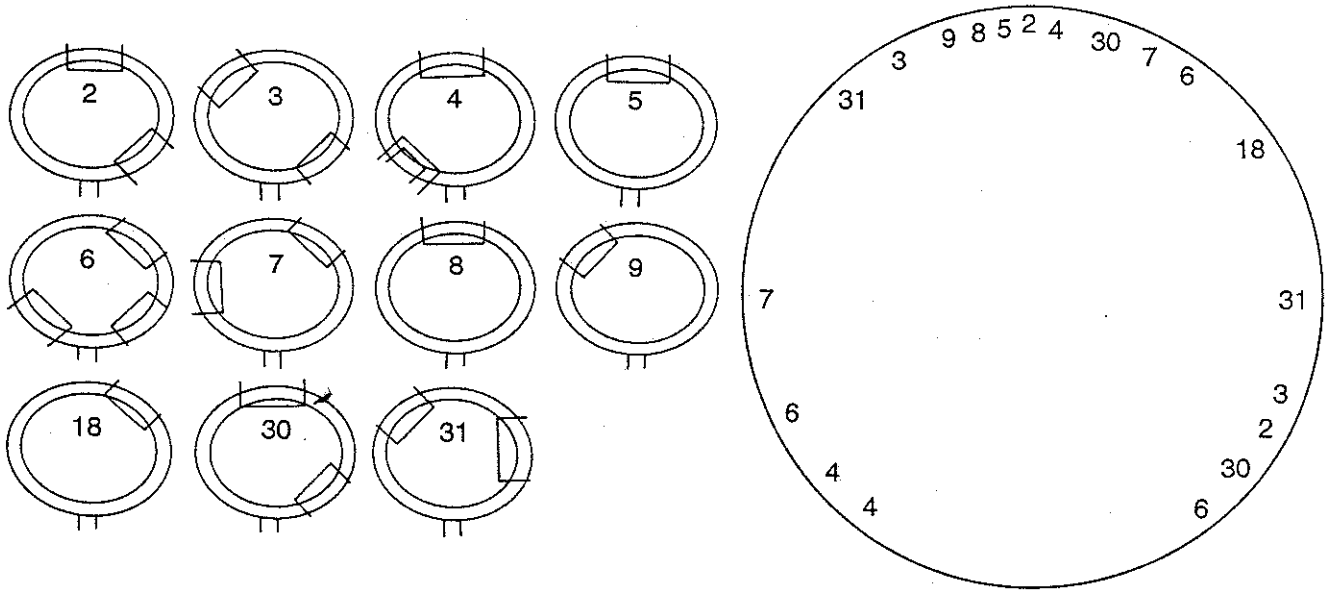


Figure 6.8 The position of the leather on each eyelet and spacing around a clock face (after Jacqui Watson)

bed structure, but while the wood grain here on the eastern side matches that in the lower part of the cleats (TLS) and the vertical shanks of the adjacent eyelets, that on the western side is of radial longitudinal section (RLS), like that in the upper part of the nearest adjacent double cleat Δ13 (Table 6.12, cf Tables 6.10 and 6.11). At the top end the stays appear to have held a headboard 42–46mm thick. Here the grain direction is straight on all the surviving cleat plates, although angled across those on the stays themselves. It is inferred that the grain was straight on both faces of the wood but that the plates twisted round when the cleats were tightened, giving the impression of angled grain.

6.9.3.4 Textile and leather remains

Traces of a smooth 2/2 twill were identified on all the faces of the double cleats which faced into the bed structure. The textile was found on both the upper and lower sections of these plates. It is inferred that this textile covered a mattress, which itself presumably lay on some now unrepresented base lower down than the cleats. There is, however, no trace of this textile on the face of the one surviving inner plate at the bottom of one of the headboard stays.

Remains of a twill cloth have been identified on the horizontal underside of 6 of the eyelets. Of these five (Δ3, Δ4, Δ7, and Δ8, Δ30) were situated opposite one another while Δ6 was at the head-end. This cloth would, then, have lain above the pairs of cleats the majority of which also displayed evidence for twill, encouraging speculation that the eyelets may come from a separate or detached part of the structure, laid over the bed and coming into contact with a blanket here. Textile of unidentifiable weave lay over the twisted portions of the headboard stays.

All of the eyelets, both from the head and the sides, appear to bear traces of leather strapping in the corrosion products 11–12mm wide running through them. For the positions of the strapping in each eyelet see Figure 6.8. There is no great consistency either to the number of straps now detectable in each loop relative to its position in the grave (although six of the eight eyelets at the sides have at least two straps, the remaining two at least one), nor in the position of the straps in the loop. Presumably, however, the primary function of the eyelets was to support this strapping. Surprisingly, it is not clear what the function of the strapping was. With no predominant tendency for the straps to have moved either to the top or the bottom of the loops, it is inferred that no great pressure was placed on the strapping either from above or below. While one would reasonably have supposed that the strapping was there to support a mattress, it must have run above the position of the inferred mattress in contact with the inner plates of the double cleats. One can speculate on the possibility of the strapping having been cut in order to place the mattress and body in a lower position within the bed structure in the grave – but to do so merely illustrates the sort of ingenious shift one is driven to in attempting to make sense of the evidence!

6.9.3.5 Grave 60

Grave 60 was disturbed, so that some of the ironwork is almost certainly missing – eg one of the headboard stays – and the evidence for the position of items in the burial is poorer. Nevertheless, as in grave 18, the eyelets were distributed along the sides and at the head-end, not at the foot of the grave.

The organic evidence from the eyelets is consis-

tent with that from grave 18. All have a common wood direction, implying that they were attached to continuous lengths of timber at each of the three sides, and the majority have the remains of what was probably leather strapping in the loops. In the case of Δ9 the deposits are observably of similar dimensions to the strapping represented in grave 18. Traces of textile (threads only) were found on what is presumed to be the underside of the same eyelet.

The ends of the headboard stay were broken. One of them, however, has a small fragment of TLS wood (as on the eyelets) surviving at one end. There is a cleat plate, Δ4, which appears to have broken off the end of this stay but has no surviving traces of wood.

There is one further single cleat plate encased in a metal binding (Δ1) from the foot of the grave. It is unlike any other cleat found in association with the bed-burials. The position of the metal binding (Fig 3.52) indicates that this cleat either repaired a break or joined two pieces of wood end-to-end.

The more limited range of evidence from grave 60 would be consistent with a simple structure consisting of a frame which bore the eyelets, with the headboard stay(s) attached at one end. Once again, however, the presence of textile apparently underneath one of the eyelets implies that this structure overlay something in the grave rather than simply supporting the funerary deposit.

6.9.4 Comparative evidence

The bed-burial phenomenon in early Anglo-Saxon England has recently been the subject of a detailed review by George Speake, in connection with his publication of the example from Swallowcliffe Down, Wiltshire, excavated in 1966 (Speake 1989). Speake identified seven practically certain examples of this type of burial, in which eyelets or functionally equivalent staples were present, and two further possible cases. Adding the two graves from Edix Hill brings the total up to only eleven. Since the identification of a bed-burial depends upon the original use, the survival, and the recognition of iron fittings, it is not unlikely that the incidence of bed-burial is somewhat understated by this evidence. It may be, for instance, that what are tentatively identified as coffin fittings could have come from a bed or bier, while there is evidence for all-wooden beds from continental and Scandinavian burials (see below). Conversely, iron cleats and carrying rings may have been attached to coffins. A grave from Bishop's Court, Dorchester-on-Thames, Oxon (May 1977, 63) with nine waisted cleats is a good example of a deposit in which we cannot know what the fittings represent.

The distribution of these burials reveals two areas of concentration: one group in the Cambridge region and a westerly group in Wiltshire and Dorset. A single but certain outlier is the burial at Lapwing Hill in the Peak District in Derbyshire (Speake 1989, fig 90). The Cambridge-region group now numbers five certain examples: Edix Hill graves 18 and 60; Cherry Hinton, Cambs, grave 4; Shudy Camps, Cambs, grave 29; and Ixworth, Suffolk (Speake 1989, 98–102; Lethbridge 1936, 10–12; Smith 1857, 162–4). Speake identifies a possible sixth example in Shudy Camps grave 24.

Structurally, the Anglo-Saxon beds show considerable variety of form. The Swallowcliffe Down bed appears to have been particularly elaborate, with a frame apparently composed of two planks joined by cleats on all four sides, attached to the uppermost of which were eyelets that faced into the bed and held a suspended nailed wooden lattice mattress base. There was also a pair of twisted headboard stays, and an iron handrail on either side of the bed (Speake 1989, 82–98). The presence of headboard stays is further paralleled only in the three further certain bed-burials from the Cambridge area. Cleats, however, seem to be very consistent features of the construction of Anglo-Saxon beds, with only the Lapwing Hill grave and Edix Hill grave 60 lacking evidence of any. Even more regular is the presence of eyelets or staples, the only dubious case in respect of which is the tentatively identified bed-burial investigated by 19th century antiquarians at Roundway Down, Wilts (Speake 1989, 107–10 and refs).

Even within such a small corpus, we can point to what may be special similarities amongst the beds of the Cambridge region. Like Edix Hill grave 18, Cherry Hinton grave 4 produced eleven eyelets, apparently disposed down the sides and at the top. These too were above a set of cleats. The plan of the Shudy Camps bed-burial shows the staples either standing vertically or leaning slightly outwards, suggesting that they had stood the same way as the eyelets in grave 18 (Lethbridge 1936, fig 5).

Despite the variety and the uncertainties of reconstruction noted here, there is a distinct contrast between the range of typical iron fittings used to make the Anglo-Saxon beds identified up to now and the continental Merovingian-period beds made of lathe-turned wood from Cologne Cathedral and Oberflacht, Kr Tuttlingen, Baden-Württemberg (Werner 1964, 209, fig 6; Schiek 1992; Paulsen 1992, esp 41–60). These continental examples cannot be the precursors of the Anglo-Saxon beds, and the possibility that the latter may be related to a Scandinavian tradition merits serious consideration. A planked bed with some ironwork fixtures from an exceptionally rich male burial under barrow 2 at Högom, Selanger parish, Medelpad, Sweden, provides interesting parallels to several features of Anglo-Saxon bed-burials (Ramqvist 1992, 47–50). The Högom bed measured *c* 2.5m × 1m. Various iron mounts, rivets, and nails were found, mostly by the foot of the bed. There were also eyelets, designed to be nailed to wood, which are unlike those from Edix Hill, Cherry Hinton or Swallowcliffe Down but match the type from Lapwing Hill, which, like Högom, was in fact a male burial including weaponry.

The Högom grave is the only recorded bed-burial of the Migration Period or earlier in Scandinavia. The lack of further finds from 6th century Scandinavia and England could be due to a failure to recognise diagnostic ironwork, or to the use of planked beds without metal fittings such as are known from Viking-period Scandinavia (Speake 1989, 112–15). The Högom bed had no cleats or headboard stays, but the use of eyelets, in particular ones attached in the same way as at Lapwing Hill, is sufficient to suggest that, like boat-burial, both the practice of bed-burial and the form of the beds in 7th century England were influenced by a Scandinavian tradition, now represented for us by the Högom bed alone.

In Anglo-Saxon England, bed-burial is recorded only as a 7th century practice, and is associated in most cases with indisputably rich burials, several of them beneath barrows. However three of the eleven possible examples identified by Speake, Cherry Hinton grave 4, Shudy Camps grave 29, and Winklebury Hill, Dorset, were practically unfurnished apart from the bed. The phenomenon of bed-burial is probably best perceived as a variation on coffin burial in which display of the body was an important element. Although the young woman buried in grave 18 at Edix Hill showed signs of leprosy, this appears to have been in an early stage (see above, 4.6.4.1), and it is perhaps over-imaginative to postulate that the bed-burials are associated with invalids in any regular way. Seven of the eleven graves are identifiably those of females, and only Lapwing Hill is definitely male, although Lethbridge (1936, 10) believed the skeletal remains from Shudy Camps grave 29 indicated a male. The only other item in this grave was a small copper-alloy pin found at the neck. The occupant of Cherry Hinton grave 4 is identified as a 10- to 12-year-old juvenile.

The Edix Hill bed-burials confirm for us that this practice was a regular though rare one in the later furnished cemeteries of the early Anglo-Saxon period in certain areas. They considerably strengthen the case that the rite was used primarily for female burials, as well as the more obvious point that bed-burials are relatively rich. In respect of the structure of the beds, however, one has to admit that they leave us rather more confused than we may have been before.

6.10 Girdle groups: reconstruction and comparative study by Audrey Meaney

In the graves of some women (most of mature age, but including some adolescents over fourteen years old) there are groups of objects, usually placed between the waist and the knees, which were evidently suspended either from the waist or from the shoulder, and which have a character of their own. The most remarkable of the artefacts are ivory or antler rings, and chatelaine chains, while the most common are iron keys or latch lifters, and iron or copper-alloy rings (Table 6.13). Sometimes there is evidence that some or all of these (and sometimes other objects like beads) were in a bag which served as a kind of pocket.

6.10.1 Girdle groups with ivory bag rings

Remains of three elephant-ivory rings, which were probably used to form a rigid opening for the top of such bags (see above 5.3.3 and 6.3.7), were found in the Edix Hill excavations in Phase I graves. In grave 13 small fragments of an ivory ring (probably incomplete when buried) were found at the waist, together with a very small knife and fragments of two or three iron latch lifters, one which had a looped top and an angular hooked end (hereafter referred to as 'finger-crooked' (Fig 3.36)). All the latch lifters were suspended on a small iron ring. The position of the latch lifter suggests the bag suspended from the ivory ring was worn slightly towards the back on the left.

In grave 69 (Fig 3.55) only about two-thirds of the ring survived and it appears to have been already incomplete when placed in the grave. Nevertheless, the shape of the whole ring was preserved. It was found below the right knee, and must either have been put there deliberately before the body was placed in the grave, or dropped into the grave under the body. If so, the cord from which it was suspended must have been so long that the bag normally hung about mid-calf.

The fact that a double copper-alloy plate, with iron rivets, lay partly underneath the ivory ring may be evidence that the bag lay mouth up. Within the area of the ring was a little copper-alloy strip and a fragmentary iron ring. Farther up the leg, was another, larger iron ring. Across the gap in the ivory ring was an iron knife. A copper-alloy buckle plate with an iron loop lay partly on top of the knife blade. At the tip of the knife were two copper-alloy strap-mounts with copper-alloy and iron rivets, and a square iron rod, to which the mounts were fastened with rivets. The rod may have been the remains of a broken latch lifter, but it is fragmentary and it shows no sign of an angular termination. Fragments of fittings of copper-alloy plate, associated with unidentified organic remains, were found inside the ivory bag-ring and may have been attached to its suspension straps (compare grave 79 below).

Though fragmented into seven segments, the ivory ring in grave 79 appears to be complete (Figs 3.19 and 3.57). Associated with the ivory ring was a set of three iron latch lifters, with 'finger-crooked' terminations and with loops at the top, all suspended from an iron wire ring with a 'slip-knot'. It seems possible that the iron ring was tied (with string?) to a stout copper-alloy ring which shows obvious wear marks on one side and which was lying partly on and

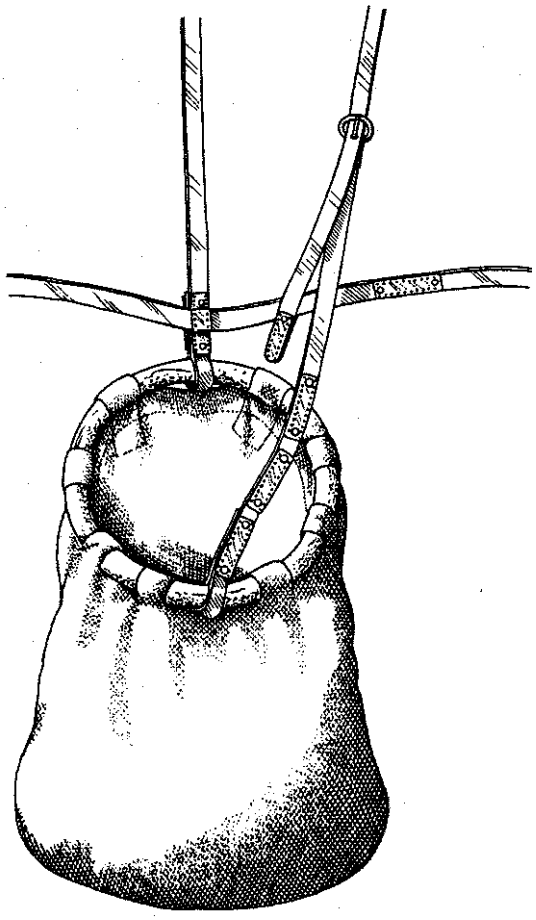


Figure 6.9 Reconstruction of strap / bag from grave 79 (J Richards)

partly outside the ivory ring. Near the iron ring (but inside the ivory ring) was an amber bead, and lying beside the leg bone and near the hook of one of the latch lifters was a group of beads and a small rectangular piece of copper-alloy sheet, with rounded ends, impressed dots and iron rivets at either end.

It would therefore appear that the bag suspended from the ivory ring lay mouth down, but partly across and over the leg, with the beads at the bottom of it (Fig 6.9). Lying high within the ivory ring was a copper-alloy cosmetic brush tube, and also within the ivory ring on the floor of the grave, were three more small copper-alloy plates identical to that described above. In the same area as these plates, in a line across the ivory ring, were five little studs with iron rivets, one lying beneath the ivory ring. Outside the ring were more little copper-alloy plates: two, which overlay each other, have rivets only at one end and are thinner and shorter than the four mentioned above and may have been tag ends. Next to them was a strap-runner, concave side up, and to the side was another copper-alloy plate with similar rivets and impressed dots.

Several other small copper-alloy plates were found along the body (Fig 3.80) and the best explanation appears to be that the plates were decorationsor fastenings on a long strap, which passed over the right shoulder, and the bag in wear hung by the left hip but towards the back (Fig 6.9). When the body was laid in the grave, it would appear that the bag may have been held up to lie over the left leg, but its mouth fell downwards at the side of the hip.

6.10.2 Girdle group with antler ring

Another complex girdle group with a ring was in grave 83 (Fig 3.58). It was lying across the sacrum, and on top was a stout iron rod with large loops at either end. Beside it was a group of three identical iron latch lifters, with long shafts and twisted stems, 'finger-crooked' terminations (more right-angled than usual), and looped tops formed by twisting the ends. All the latch lifters and the looped implement seemed to have been suspended from an iron wire ring, now broken. Beneath the latch lifters was another apparently shorter iron rod, with a flat hammer-shaped termination, resembling the 'tool amulets', usually of silver or copper-alloy, found in some 7th century Anglo-Saxon women's graves. Its head-end may have been shaped like the top of a pair of spectacles, and through the junction area was a piece of iron wire identical to that on which the latch lifters were hung. Therefore all these four objects had certainly been fastened together.

Under this group was an antler ring. Beneath which were two smaller iron rings and at the bottom of the pile was a larger iron ring. It was too small, however, to have allowed the passage of a hand, and so cannot have acted as a bag ring in the same way as an ivory ring did. It seems clear that they must have been tied together in a loose group with something which has not survived. It is possible that this group was associated with a bag of cloth, as textile remains were found on the latch lifters; its mouth must have been towards the right, at the end where the group was tied together.

Though the girdle group in grave 83 as a whole resembles that in Burwell grave 76, the bone or antler ring there was regularly shaped and had ring-and-dot ornamentation, like those in other Final Phase burials. Antler rings or whorls, which preserve the natural shape of the burr, have elsewhere been found in earlier graves, and as often in cremation urns as in inhumation burials. A ring which looks very similar to that in grave 83 (but slightly larger) was in grave 150 at Long Wittenham, Berks (Meaney 1981, 139).

6.10.3 Other groups with 'finger-crooked' latch lifters

Several other burials (as well as graves 13, 79, 83, and perhaps also 69, already discussed) contained 'latch lifters' made of square-sectioned iron rods with angled ends. In some of these, as in graves 13, 79, and 83, the 'latch lifters' were multiple, usually

Table 6.13 Table of girdle groups

				Girdle rings						Brooches			
Grave	**Skeleton**	**Age**	**RIAC**	**Ivory/ Antler**	**Metal rings**	**Strap Fittings**	**Latch lifters**	**Rods, etc.**	**Chatelaine chains**	**Cruciform**	**Small long**	**Disc/ Openwork**	**Cast Saucer**
13	20B	25	11	Ivory	1 Fe small	2 Strap-ends	3 Fe FC			1 Cu + form D	1 Cu Xder	1 Cu disc	
69	359	18	7	Ivory	2 Fe	4 + Cu mounts		1 Fe					
79	428	30–34	7	Ivory	1 Fe wire, 1Cu	10 Cu mounts, 6 Cu studs	3 Fe FC						2
83	436	25	6	Antler	4 Fe varied	2 Fe studs	3 Fe FC	1 Fe looped, 1 Fe rod					
10	16B	15–16	4		3 Fe various	1 Cu mount	3 Fe FC, 1 Cu broken	1 Fe					
19	44B	35	6		5 Fe heavy, 2 Cu	3 Strap-ends + frags	Fe frags	1 Fe looped				2 Cu openwork	
78	424	14	5		1 Fe & frags	Cu sheet frags	3 Fe FC	2 Fe, + frags					
38	127	35–45	4		2 Fe			1 Fe rod					
68	354	45 +	6		2 Fe		?Fe frags	? Fe rods					2
47	147	26–70	2					?Fe key or rod					
106	626A	18–20	5		1 Cu	4 Fe studs	1 Fe large T-terminal						2
39	128	16–17	4		1 Fe	2 Shoe-shaped studs	?1 Fe, large, broken				1 Cu Horned	1 Cu disc	
54	161	23–35	5				1 Fe large, G-terminal						
18	42B	17–25	11				1 Fe large, L-terminal						
109	683B	35–45	8		2 Fe small		?1 Fe, hooked terminal		Fe links				
20	45	19	7		1 Cu, 1 Fe small			Fe rods	Fe links				
60	183	25–32	7		1Fe				Fe links, 1 Cu fig 8 link				
91	459	18	7		1Cu sm				1 Cu link, 1 Fe link				
66	322B	25	4 to 8		1 Fe						1 Cu 2 CPO?		
96	547A	25–35	8		1 Fe						1 Cu Tre	1 Cu disc	
3	4	25–35	5		1 Cu wire, 1 Fe	1 Cu strap-end			Fe links		2 Cu CPO		

Table 6.13 Table of girdle groups (*cont.*)

Grave	Brooches	Beads		Buckle	Wrist-clasps	Knife	Miscellaneous	Dating*	Dis-turbed
	Annular/ Penannular	Amber	Other						
13		35	2	1 Fe inlaid	B13a pr	1	7 Cu wire rings	Phase I	
69				1 Fe, Cu plt	1 B13c, 1B7	1		Phase I	
79		145 (5 in bag)	12 (1 in bag)	2 Fe		1	1 Cosmetic brush	Phase I	
83	1 shale ann (Fe pin)	3	10	1 Fe		1		Phase I	
10	2 Cu ann	15	1		3 B7			Phase I	
19		50	22	2 Fe, 1 Fe plt, 1 Cu plt	1 B7, 1 B13a, 1 B13c		2 Cu bucket pendants, 3 Cu tubes	Phase I	
78	1 Cu ann	11	1	1 Cu				Phase I	
38		24	1			1	1 Fe hook	Phase I?	
68		18	1		1 Type A			Phase I	By plough
47									Yes
106		167	13	Fe bkl & plt	2 B13c	1		Phase I	
39	1 Cu ann			1 Ag Kentish, ?1 Fe		1	1 Cu curved strip	Phase I	
54				1 Cu small		1	Fe nail	Phase II	
18			1			1	Box, comb, spindle whorl, astragalus, fossil, glass frag, Fe bucket, weaving batten	Phase II	
109				1 Cu & plt			Antler spindle whorl, pot, box	Phase II	
20	1 Cu penann, small	?12					.5 tweezers	Phase I?	
60	2 Cu ann, small					1	Ag finger ring, Cu pin	Phase II	
91							Necklace Ag rings & beads, gold pendant	Phase II	By plough
66		72	2			1	1 Cu wire ring	Phase I	By 322A
96		12	4			1	Pendant?	Phase I	
3		29		2 Fe, Fe plts	3 B7	1	Cu tweezers	Phase I	

* for discussion on the phasing and date of Edix Hill see 7.1

triple, and where reasonably well preserved, the terminations were 'finger-crooked' as in burials 13 and 79 (see above, 5.3.2).

No complete copper-alloy 'girdle hangers' were found during excavations at Edix Hill. One was found in two pieces by metal-detecting (Fig 3.66 Δ37), and there may have been a broken one in grave 10 (Figs 3.8 and 3.34 Δ6). The complex girdle group included a copper-alloy rod with a hole and an iron rivet at the top for suspension, on a copper-alloy ring. The rod was probably the upper end of an ornamental 'girdle hanger' which was buried in an incomplete state. Beside it were three identical iron latch lifters with 'finger-crooked' lower ends but straight top ends, two iron rings, and a smaller iron ring with two thin rods which may have been attached to it. These may have been cosmetic items, like those in grave 18 at Great Chesterford (Evison 1994, 26–7, 94; figs 22 and 72). Unusual features are that the 'girdle group' was not found below the waist and that it was in the grave of such a young person. As we shall see, however, teenage girls in graves 39 and 78 had girdle groups in more usual positions.

Perhaps the most remarkable of the remaining graves which may have had a set of finger-crooked latch lifters, and certainly had a collection of large iron rings, was grave 19. Over the sacrum of Sk44B (Fig 3.14) were three heavy iron rings. There was thinning of the iron at opposite points on the circumference, and indeed the ring is slightly bowed. There are no metal links in the group, so perhaps the thinning is due to wear from the rings being tied together by tough cord for a long time. Under the edge of the central iron ring was a small copper-alloy split-ring, and inside this was a copper-alloy strap-end one part of which had stamped ornament. A broken piece of curved copper-alloy sheet was found inside the lowest ring. Across this, and corroded to it, was an S-shaped iron implement – more irregular than, but with some resemblances to, the double-looped implement in grave 83. Another 'strap-end' was near part of a wrist-clasp and yet another was outside the upper left arm. A somewhat larger example lay outside the left pelvis. It seems possible that these rings were in a bag which must have hung in front, and the 'strap-ends' were attached either to the bag itself or to its suspension strap, which may have hung from the left shoulder (compare grave 79).

There was another group of rings: one of copper-alloy and two of iron. This set of rings could also have been tied together, but if they were worn as found they must have hung down at the back. Fragments of bent iron rods were found in sieving; one or two fragments appear to be angled in a way that suggests 'finger-crooking'. It seems possible, therefore, that one of the two groups of rings resembled the 'girdle group' of grave 83.

In grave 78 three iron latch lifters ran right across both femurs (Fig 3.80). They lay parallel with two straight rods. Between the left hand and the upper part of the left femur was a group of objects consisting of: an iron ring; two other fragments (corroded together) of curved iron rods; other iron fragments; five fragments of copper-alloy sheet; and a composite object with iron loops and copper-alloy bands with repoussé decoration, and remains of leather and textile. Perhaps these things were in a small bag, and the latch lifters hung below it. Beneath the left armpit was a substantial copper-alloy buckle; whether it was associated with a strap holding the bag and latch lifters is impossible to know for sure.

In two further graves there are iron remains which may have come from several latch lifters, but they are too decayed for absolute certainty. In grave 38 a knife was apparently associated with a small hook of iron wire and an iron rod of square section similar to those of the latch lifters already discussed, but with no sign of angular bends, and so perhaps cosmetic items. There were also two iron rings, one on each side of the body.

Grave 68 had been badly disturbed. There were parts of two iron rings, with parts of suspension loops and other unidentified iron fragments, as well as four pieces of square-sectioned rod.

Another disturbed grave which should perhaps be considered here, though only one rod, without finger-crooking, was found in it, is grave 47. This grave contained parts of two badly disturbed skeletons. Under the pelvis of the juvenile was the broken-off head of a round-sectioned rod or latch lifter in the shape of a shepherd's crook, which may have belonged to the woman. It looks very similar to objects found in grave 18 at Great Chesterford, except that these were square-sectioned; if Cook and Dacre (1985, 92) are right, these were cosmetic items of some sort.

6.10.4 Graves with single heavy keys or latch lifters

All the burials with multiple, usually smallish, 'finger-crooked' latch lifters belong to Phase I (see Chapter 7, below) or, as regards graves 78 and 83, possibly to a transitional period. At least one other burial of Phase I (and another possibly), and two or three of Phase II each had a single iron latch lifter, with differing (usually angular) terminations, but none 'finger-crooked'.

Grave 106 (containing Sk626A and Sk626B) had a heavy iron 'girdle-hanger' with a curved T-shaped termination, across the top of which was an iron knife. At the point of the knife tang there was a solid copper-alloy ring. Though there is no good evidence to show how it was suspended, the inner circumference of the copper-alloy ring is slightly distorted, perhaps from wear. The upper end of the key had no loop or obvious means of suspension, and so it was probably in a bag, especially since textile remains as well as plant stems were found on the iron.

Grave 39 contained 'unidentifiable fragments, iron, including three pieces of square-sectioned curved rod

with mineral-preserved plant stems and textile' and a heavy suspended iron object attached to an iron ring. It is very similar to the top part of the large 'key' in grave 54, and may have been a broken latch lifter. Nearby was a fragmentary piece of curved copper-alloy plate, with one central hole and half holes at each end, which may have been part of an annular brooch. The way in which the objects were lying together probably indicates the original presence of a bag of some sort, carried on the left but with little evidence for the means of suspension. The artefacts associated with it all appear to have been broken, and were perhaps awaiting repair, or maybe they reflect the girl's immature status.

In grave 54, just below the lower right arm, were the remains of an iron ring and a small iron nail at the top end of a huge iron latch lifter whose G-shaped termination was partly beneath the sacrum. Lying across the iron ring was a knife. These objects presumably hung on the left at the back, and were covered by the pelvis when the right half of the body tilted forwards. It is difficult to tell if any of the artefacts may have been in a bag or whether the latch lifter was tied to the ring and hung free. A small oval copper-alloy buckle with a decorated counter-plate lay between the lower arm and the latch lifter at the point where it passed under the pelvis, and may have been associated in some way with a bag, or may have been on a belt. This burial is therefore probably of Phase II.

Grave 18 at Edix Hill was that of a woman who was interred without jewellery but in a rare (and certainly prestigious) bed-burial. The presence of a box in the grave is evidenced by iron fittings, and confirmed by a group of objects in close proximity to each other (see 3.2 above). The group comprised a fairly typical collection for an 'amulet bag' (cf Meaney 1981, 259). Other grave goods included a cut-down sword, presumably used as a weaving-batten, with a large L-shaped iron latch lifter without an obvious suspension loop but with two upward-facing teeth. It is possible that the latch lifter was worn in the position it was found in the grave. It may well be that both the latch lifter and the weaving batten were placed in the grave together.

6.10.5 Graves with chatelaine chains

In some graves there is evidence for chatelaine chains (see above, 5.2.3.7), and in two of these little rods were suspended from the chains. Grave 20 contained a large copper-alloy ring and inside it a small copper-alloy penannular brooch. Scattered around were fragments of iron wire or rods, at least one of which was a figure-of-eight shape, and another was hooked (perhaps a bent nail). Between the upper legs were corroded iron fragments. X-radiographs show that some of these were twisted around on themselves, and were probably links of a chatelaine chain. Other fragments were parts of one or more (square-sectioned) iron rods, one of which appears to be suspended on a small iron ring, but with no sign of angling, and therefore perhaps, once again, a cosmetic item or items. Towards the knees, was half a pair of copper-alloy tweezers on an iron suspension loop, apparently hanging from the chatelaine. Beside the right hip was a cluster of seven amber beads and another cluster of five was near the copper-alloy ring. The former beads were in an unusual position in the grave, and might have been displaced from one of the earlier graves in the complex. Amber beads are not entirely unknown in 7th century graves (for example, at Burwell). Chatelaine chains are most often found in Phase II graves but they are not entirely unknown in 6th century burials (for example in Great Chesterford 21), so this may be one of the 'transitional' examples. The other burials with evidence of chatelaine chains excavated at Edix Hill all belong to Phase II.

Grave 109 included an iron knife with a long blade and an iron ring at the top end of an iron chatelaine chain with figure-of-eight links by the left arm. The chain was probably suspended from a belt, passed underneath the knife, and then flowed down side of the body. Suspended from it, on an iron ring, was an iron rod with a looped upper end and a small curled termination. The chain continued down along the upper leg, finishing just inside and about a third of the way down the femur. It has no obvious terminal, but a little way from the lower end was a copper-alloy coin which may have been in a small bag. If this chatelaine chain's upper end had been at waist level, it would have hung down more or less as far as the knees. The remains in this grave, then, have implications generally for the way latch lifters and bags were worn on the person.

There are a couple of other burials with chatelaine chains, but without evidence of a latch lifter or even a rod. Grave 60, one of the two bed-burials found at Edix Hill, had at least four interlinked iron loops and rings, including a ring and a figure-of-eight link. At the top of the left leg were more fragments of the chain, including a copper-alloy figure-of-eight link and an iron ring all with mineral-replaced textile. This was not a tidy chatelaine chain like that in grave 109, but the burial must have been prestigious, in spite of the lack of beads and brooches.

Grave 91 had been badly disturbed by ploughing. Beyond the foot-end of the grave was a copper-alloy wire ring with a 'slip-knot', interlinked with a loop of copper-alloy, flattened on both sides with a rivet at one end, and a chatelaine link of iron wire with one looped end formed by twisting the wire around the shaft; the other end had probably been similarly formed. This group of objects may have formed the top of a long chatelaine chain, the rest of which was ploughed away.

6.10.6 Girdle groups with iron and copper-alloy rings

Items found in many of these girdle groups are rings of copper-alloy and iron, usually much bigger than

finger-rings but far smaller than bag rings. In some burials the rings are clearly associated with latch lifters, and from their position it seems probable that these were suspension rings, as already discussed. In other graves, their function is not so clear.

In two disturbed burials at Edix Hill, single iron rings were almost the only evidence for girdle groups. In grave 66 the lower skeleton had been disturbed by the superimposed male burial. A heavy ring was by the left thigh near an iron knife. Grave 96 was also a double burial. By the woman's left thigh, was an iron knife with the handle under her right hand. Just above it was an iron ring.

The evidence for a girdle group in grave 3 is perhaps even more equivocal. To the left of the lower spine was an iron buckle-plate and in a line towards the feet was a copper-alloy slip-knot ring and an amber bead, and then the remains of an iron buckle and chatelaine links, and, below them again, an iron ring beside a knife. Nearer the right leg was a double-sided copper-alloy strap-end. Over the upper right leg were three amber beads and a pair of tweezers. Between the knees was a pair of copper-alloy wrist-clasps and an amber bead. It seems most probable that the wrist-clasps were awaiting repair and/or reuse in a little bag hung at the end of a cord or strap on which the knife was also suspended. In spite of the fact that there was only one ring in grave 3, this is a typical girdle group. All these burials belong to Phase I.

The presence of copper-alloy and iron 'girdle' rings in early Anglo-Saxon women's burials have been discussed elsewhere (Meaney 1981, 175–8, figs V dd–V gg). Compare in particular grave 19 at Orpington, Kent, and grave HB2 from Bidford-on-Avon. Dickinson (1993b, 52, fig 6.3) postulated that the rings could have been used as closures for the mouth of the bag, but it is difficult to imagine the mechanism. It is certainly not possible for the rings in grave 19 at Edix Hill to have been used in this way, and it is tempting to come back to Brown's conjecture that maybe a group of rings was regarded as amuletic (in Brodribb *et al* 1972, 109) or perhaps was thrown down in a divination ritual (Meaney 1981, 259–60). Myres argued that maybe rings carried in a bag were 'loose change' to be exchanged for more useful goods when the tinker came around (1978); Evison that they were usually present in girdle groups simply as suspension rings (1987, 119). At Edix Hill, the two groups of heavy rings in grave 19 are the most difficult to explain; nothing seems to have been suspended from them and their weight would surely have been quite a burden.

6.10.7 Discussion

There has been some discussion about the status of the early Anglo-Saxon women who carried keys. Firstly, perhaps, we should consider whether any distinction is visible between the burials with clearly identifiable triple 'finger-crooked' latch lifters (graves 10, 13, 78, 79, 83, and perhaps 19), and those with the single larger latch lifters with varying terminals (graves 18, 54, 106, and perhaps 39). There are almost twice as many of the former as the latter. In mid 19th century excavations at Barrington A, a single hook-shaped iron key was found 'on the left arm of the skeleton', and a knife on the right arm, in grave IV. In grave XXIII, apparently, a triple set of finger-crooked latch lifters was found near the waist 'of a young person'; they were the only grave goods (Smith 1868, 157 and 161, figs 5–7 and pl XXXI).

Multiple groups of keys are not rare, but they tend to vary in shape, and the clear division at Edix Hill – between three finger-crooked latch lifters and a single large key in a few others – is notable. The triple sets of small finger-crooked latch lifters were all found in the earlier series of burials, or in graves transitional between the two phases, the single large keys are found in both Phase I and Phase II graves. Traces of similar distinctions are visible at Morning Thorpe (Norfolk) in particular. These all appear to be Phase I burials, however (Green *et al* 1987).

It is sometimes thought that the reason for wearing groups of keys is to produce a more imposing show, but some of the latch lifters in the triple groups appear to have been in bags. It is also difficult to imagine what kind of lock would need three latch lifters to open it. Perhaps, as Steuer (1982) suggests for pairs of copper-alloy examples, they had an amuletic function. One of these keys on its own would have been very practical as a latch lifter, especially for a smallish chest or box. As Hirst made clear (1985, 88) there seems little practical sense in having three identical examples each time. Finger-crooked iron keys are known from the 6th century grave 51 at Stossen, in the former DDR, and, in copper alloy, in the 5th century graves 157 and 158 at Liebenau in Lower Saxony (Steuer 1982, 228 and 231, figs 21 and 34).

The single large keys would have been more suitable for, say, a house door, and show a higher concern for security in the varying shapes of their terminals. Two out of the three belong to the types of slide-key mentioned by Hirst as current in the post-Roman period: a 'symmetrical T-shaped type' in grave 106, and an 'asymmetrical type of L-shape with a double reverted claw' in grave 18. It is possible that the rod associated with the chatelaine chain in grave 109 (see below) was a broken (albeit small) key of this type. The huge key with a G-shaped terminal in grave 54 is paralleled in what appears to be a 6th century grave (221) at Morning Thorpe, Norfolk.

There has been some discussion about whether early Anglo-Saxon women who are buried with keys were 'ladies of the house' or merely 'housekeepers' (Fell 1984a; 1984b, 59–61, citing Hawkes 1973, 195). It is worth remarking that many of the burials with latch lifters were among the richest at Edix Hill, and the same appears to be true for those containing any kind of girdle group.

About half the identifiable Phase I women had girdle groups whereas the fraction was three-quarters for

Phase II women. In addition, two or three adolescent girls with Phase I grave goods had girdle groups, as did the teenager and the two adults with 'transitional' goods.

In Phase I there are some burials which have a conspicuous display of jewellery, and about 80% of these had girdle groups, whereas only one of those without such a display had a group. It seems beyond doubt that (whatever criteria we use), the wealthier a Phase I woman was, the more likely she was to have a girdle group. The ivory purse-rings are rare enough to be remarkable and their possession carries some implication for their owner's status. Even the one relatively poorly-furnished adult female grave of Phase II, however, had a group.

The girdle group burials were scattered across the whole site, but there were more of them in the north. They belonged to both Phase I and Phase II: graves 54, 68, 69, 78, 79, 83, 91, and 109. It seems, too, that there were girdle groups in all the four 'costume groups' at Edix Hill (see 8.4) . Perhaps we can say, then, that girdle groups were an essential part of the costume of the wealthier Phase I women buried at Edix Hill.

We will never know the full number or variety of the objects which contributed to an early Anglo-Saxon woman's girdle group. The bag and many of the contents, would have been made of textile and/or leather, or consisted of plant remains. Keys or latch lifters exemplify the woman's charge of the house, or of the family's secure chest. Other items such as spindle whorls also had a practical purpose. The rings are the most difficult to interpret, because, though some seem to have been used for suspending keys or other tools, others look as if they were carried for their own sake.

III Analysis and interpretation

Chapter 7 The chronology of the burials

7.1 Introduction: early Anglo-Saxon cemetery chronology

A chronological scheme for the Edix Hill cemetery, covering both the general date-range for its use and the internal relationship between individual burials, has to be based primarily on the analysis and typology of the artefacts found there. As was noted in a number of places in Chapter 5, the conventional typology of the artefact-types found in this cemetery is often associated with more or less firmly established dating for the types. Following on from such dating, stratigraphical observations allow a considerable number of other graves to be assigned to specific phases of burial at the cemetery. No radiocarbon or thermoluminescence dating of material found here has yet been undertaken, nor indeed would such analyses be likely to contribute greatly to the fine chronological study of the site, although the results could be of use in, for instance, indicating the date of the problematic 'Iron Age/Roman' burial, grave 49, or helping to distinguish between Iron Age and Anglo-Saxon potsherds (see above, 5.5.1). One laboratory-based dating method that has been used involves the measurement of gold fineness, but these results can be used to estimate the date of manufacture of the objects concerned only on the basis of typological arguments.

Most of the apparently closely datable artefact-types are dated initially by attribution to a particular phase in a relative-chronological series. The most elaborate and most reliable of such relative chronologies that is of relevance to the Edix Hill finds is that of the Germanic graves of the Rhineland (Böhner 1958; Ament 1976; Ament 1977; Siegmund 1989). The phases of such schemes are, however, normally closely associated with approximate absolute date-ranges (ie date-ranges expressed in terms of years on the BC/AD calendar scale), and it is often only by use of such absolute dates that it is feasible to interrelate the evidence of the various areas and schemes and to discuss their evidence in a comparative way. In Anglo-Saxon archaeology, indeed, while a number of relative-chronological schemes have been used analytically in an *ad hoc* manner for individual regions, sites or artefact-types (eg Vierck 1977; Bakka 1981; Hines 1984; Evison 1987), none has ever achieved wide employment as a conventional and general system, and chronology is consequently usually only discussed in terms of approximate absolute dates. As analysis of the Edix Hill grave groups confirms, this is not least due to the fact that it has as yet proved impossible to establish a reliable fine chronological phasing with any more than two consistently recognisable phases in the material.

Even the graves within the individual cemetery have to be dated according to separate schemes. It is considerably more difficult to discern and corroborate any fine relative chronology amongst the artefacts typical of men's graves (buckles, knives, weaponry) in an early Anglo-Saxon cemetery than amongst those found in women's graves. It is concomitantly impossible to correlate male and female burial chronologies except, tentatively, in either the gross two-phase terms referred to just above or equally gross absolute terms: eg 'probably in the same half-century' (Härke 1992b, 81–2; however the clearest example of how the phasing of male grave goods is derived by extrapolation from conventional absolute datings can be found in Dickinson and Härke 1992, 10–24). Very few children's graves are sufficiently furnished for close dating purposes. A small minority of them can be integrated with the adult male or female series on the basis of grave goods, and rather more on the basis of stratigraphy, but a separate chronology of children's graves is not possible.

The total corpus of early Anglo-Saxon artefactual finds from cemeteries is also characterised by immense diversity. This diversity is partly regional in character, with individual artefact-types or subtypes varying markedly in frequency from area to area. While we can reasonably expect a well-defined artefact-type to have the same date-range wherever it occurs, adequate overlap between well-dated artefact-types and combinations for the integration, say, of Upper Thames, East Anglian, Northumbrian and Kentish sequences has proved very elusive. Within single regions and even at single sites, we can be faced with what for the present we can describe as distinct cultural 'traditions' which can keep even contemporary artefacts frustratingly apart (see below, 8.4). Thus classes of object for which we have relatively good chronologies, either relative or absolute, such as the great square-headed brooch and cruciform or even small long brooches, are, in view of their overall frequency, surprisingly rarely combined in single grave groups (Hines 1997). These problems are especially acute at a site that is as culturally mixed as the cemetery on Edix Hill has long been recognised as being (see Smith 1868, 163–5).

One chronological phase-boundary, however, is very clearly defined, and it is one that seems to be found across the whole of the Anglo-Saxon cultural area in England in the second half of the 6th century. The earlier graves at Edix Hill belong to the phase preceding this material cultural watershed. Only a decade ago, the term 'Migration Period', translating the German term *Völkerwanderungszeit* and Scandinavian *folkevandringstid*, seemed not only an appro-

priate but also a reasonably unproblematic term to use to designate this phase (Hines 1984, 16–32). Recent developments in both German and Scandinavian archaeology have, rather unnecessarily, rendered the meaning of the term in those areas far less clear than it was in the early 1980s. Research on the archaeology of both the Anglian and Saxon areas of northern Germany has included some welcome chronological advances (eg Bantelmann 1988), although there is still a great deal waiting to be done, especially in relation to recently excavated Saxon inhumation cemeteries. Here, however, the terms *Völkerwanderungszeit* and *Merowingerzeit* seem increasingly to be used to denote relatively loosely conceived historical rather than well-defined archaeological phases (cf Willroth 1992). In Scandinavia, meanwhile, where different terminologies have long been used in Norway, Sweden, and Denmark respectively, there is now intense debate over both what was happening in the middle of the 6th century – around the end of the traditional Migration Period – and how best to express this in a chronological scheme (see, for instance, Lund Hansen 1988).

The phase preceding this conspicuous boundary is nonetheless easily defined in the case of female grave goods, and the term Migration Period will be retained here when referring to this phase as a chronological horizon represented across a number of sites. In respect of the internal chronology of the Edix Hill cemetery, the Migration Period is referred to as Phase I (see below, 7.3.1). Its clearest definitive types are its brooches – including all of the types described in Chapter 5 (above, 5.2.1) with the exception of the Kentish garnet disc brooch from grave 37, many of which are interrelated in terms of decorative style. Also particularly characteristic of the female burials of this period are the heavier necklaces, especially those with amber beads and copper-alloy rings or pendants. Some of the belt fittings represented at Edix Hill, such as the tinned shield-on-tongue buckle and shoe-shaped rivets, are known to be characteristic of this period in England, as are all wrist-clasps and, to the best of our knowledge, the bracelet-types found at this site. Considerably less of the range of tools, personal equipment, and vessels described in Chapter 5 can definitely be attributed to this phase, although as far as we are aware ivory purse rings have been found only in graves of this character. As more detailed discussion of the male graves from this site (below) will show, there are very few typically male accessories that can be regarded as diagnostic of this phase, although the Style I decorated shield mount falls into this category, and consequently there are very few individual male grave groups one can confidently assign to it.

Clearly distinguished from the graves of this range are those with features characteristic of Anglo-Saxon burials datable to the late 6th and 7th centuries, a period called the Final Phase (ie of Anglo-Saxon furnished or 'pagan' burial) by E T Leeds (1936, 96–114; cf above, 5.2.3.4) and referred to as Phase II at Edix Hill in the present report. Female dress accessories representative of this range of burials found on this site are the silver necklace rings, certain types of pin, the gold composite scutiform and drop pendants of grave 91, and the Kentish garnet disc brooch of grave 37. Although rare, bed-burials (see above, 6.9.11) appear to be typical of this phase. One of the Edix Hill bed-burials, grave 18, contained a weaving batten, fragments of an iron-bound wooden box, and two Type C knives, the parallels to which are predominantly of the Final Phase. Also typically of this late range is the ceramic vase found with the other iron-bound box in grave 109. Some contemporary accessories typical of male burials can be identified with confidence, such as the Group 6 shield boss from grave 12.

The relationship between the copious set of female burials of Migration Period character and the scarcer range of Final Phase burials is a problem that has not been adequately addressed in Anglo-Saxon archaeology. The two ranges are particularly readily distinguishable because there are extremely few known grave groups of mixed and thus putatively transitional character. This, however, might be explained in either of two very different ways: either that the shift from the Migration Period to the Final Phase was abrupt and thorough wherever and whenever it took place; or that the two phases were in fact separated by an indistinct intervening period. There are certain artefact-types – most notably the annular brooch – that survive from the former phase to the latter, and it has been suggested that inevitably inconspicuous grave groups containing just such artefact-types could form both a bridge and a cushion between the two major sets of burials (Hines 1992, 89). Amongst the recently excavated graves at Edix Hill, for instance, two of the four with annular brooches (grave 78 and grave 83) contained no artefact-types diagnostic of either phase apart from amber beads. Such beads are not typical of Final Phase graves. But we have no evidence that they ceased to be used at exactly the same time as the wide range of Migration Period brooches, and must allow for the possibility that their use could have survived into a transitional horizon. Leeds reports that 'some odd examples' of amber beads were still included in the graves of the Final Phase cemetery at Camerton, Somerset (1936, 111). Edix Hill grave 83, moreover, which contained a rare shale annular brooch, also contained an antler belt ring of a kind apparently paralleled in Final Phase graves at Burwell, Cambs (above, 5.3.3 and 6.10.2; cf also the discussion of grave 20, below, 7.3.1). Nonetheless there was extensive material cultural change at the beginning of the Final Phase. The problematic corollary of this is that the Final Phase is defined by a multiplicity of archaeological criteria, not all of which are ubiquitously present to make the archaeological record substantially and easily comparable across the whole of Anglo-Saxon England.

Consideration of the evidence for absolute chronology underlines the problem. It is in practice impossible to establish a definite date for a Final Phase

context earlier than the 7th century because of the nature of the absolute-dating evidence. Gold standards cannot yield any well-focused dates before about the second quarter of the 7th century, and while the fortunate discovery of a coin- or even dendrochronologically-dated context that could improve the situation is conceivable, it may never happen. New methods of high-precision radiocarbon dating promise to make a substantial difference to our ability to date 7th century contexts but not deposits of the 6th century. Meanwhile, the date of the demise of the Migration Period in England can only be estimated on circumstantial evidence. What does not, however, seem to be in doubt is that this phenomenon took place well before the end of the 6th century.

The relevant absolute dates derive from the contemporary Germanic graves of the Rhineland and southern Germany. Here coin associations have provided a reliable, though not necessarily very precise, range of absolute dates for the equally reliable relative-chronological sequence, effectively covering the entire 6th century (Werner 1935; Böhner 1958; Ament 1977; Roth and Theune 1988; Siegmund 1989). More recently these coin-dates have been supplemented and sharpened, but not radically altered, by dendrochronological dates (Lund Hansen 1988). Closed finds combining material from this area with Anglo-Saxon, northern German or Scandinavian artefact-types permit the inferential absolute dating of finds and phases over a much wider area. Material of continental origin (or copied from there) in Migration Period Anglo-Saxon contexts (outside Kent) is overwhelmingly of types that have come to be taken as characteristic of Ament's phases AMI and AMII, closing in the decade 560–70. Frank Siegmund (1989) effectively moves this turning point in the Lower Rhineland slightly earlier, to his Phase 5 of *c* 555/565 (1989, esp 122–3 and 130–1) although he makes the point that Ament's subdivision of the *ältere Merowingerzeit* into phases AMI–III is very ill-defined. Continental material showing strong Anglo-Saxon influence, such as some square-headed brooches, attests essentially to the same synchronisation (Hines 1997).

This synchronisation, however, directly involves only a small proportion of the characteristic female dress-accessories of the Anglo-Saxon Migration Period, and thus can bear no automatic implication that the end of that phase should coincide with the end of Ament's AMII – even if the latter were precisely defined! Indeed the later 6th century is a relatively dimly lit period in continental chronology, and Ament's phase AMIII (*c* 560/570–600) is probably the most poorly defined and under discussed of all the phases in his now widely used chronological scheme: Ament effectively defined the phase by a set of references in a footnote (1977, 138 note 14). The references are nonetheless comprehensible, and the clearest embodiments of AMIII appear to be Rübenach Phase B (Neuffer-Müller and Ament 1973) and Schretzheim Phase 3 (Koch 1977). Amongst its discernible and apparently consistent characteristics are the first appearance of artefacts, especially brooches, decorated in a distinctly fine form of cloisonné work, including stepped cells; the sax (to which Type C knives are related); and amethyst beads. It is in the same period that Style II ornament breaks through from its newly identified initial occurrence on weaponry in southern Scandinavia on to a wider range of material, including women's brooches (Høilund Nielsen 1997). These are also innovations definitively characteristic of the Anglo-Saxon Final Phase. We have to ask ourselves whether we can identify and measure any time-lag between the appearance of these features in different areas in England and on the continent. If not, can we assume that the shift in England was generally simultaneous with that on the continent?

When the sequence at a single site, like the cemetery on Edix Hill, unquestionably crosses this transition, every effort should be made to shed light on the character of the change, and thus, if possible, to give us a clearer understanding of its relative and absolute date.

7.2 The date-range of the cemetery

Conventional typology and chronology give us a moderately clear picture of the date-range of the cemetery. Burial undoubtedly took place here within the period from *c* 500 into the first half of the 7th century. There is a little evidence one can point to that holds open the possibility of burial beyond that range at either end, but its very paucity renders a wider date-range highly unlikely. The occurrence of Roman artefacts within the total inventory poses a special problem but does not influence the assessment of the date-range of the cemetery. As noted above (5.2.4.1), an unstratified silver-inlaid kidney-shaped iron buckle is the single Germanic find from the site most likely to have been manufactured during the 5th century, although even that date is far from certain. The other silver-inlaid iron buckle, in grave 13, was associated, *inter alia*, with a cruciform brooch of Mortimer's Type D, for which a date some way into the 6th century would normally be assumed. There are, indeed, a number of brooch-types represented here for which later 5th century manufacture is indisputably a possibility, such as the 5-spiral and star-decorated cast saucer brooches, the simpler small long brooches, the cruciform brooches of Type B in the 19th century collections, and the disc brooches. In all of the cases securely provenanced to Edix Hill, however, 6th century manufacture is, on conventional dating, at least an equal possibility.

It is particularly frustrating that we are unable to assign the unstratified Type A cruciform brooch fragment (Fig 5.1) with certainty between the Edix Hill and Hooper's Field cemeteries. It is quite certainly a 5th century product. Very few brooches of this type from England are from secure and datable archaeological contexts, however, and it is known that they can be deposited in contexts considerably

later than their apparent date of manufacture (Hines 1990a, 21–4; cf also below, 9.1 and 9.3.4).

The two earliest-looking grave groups at Edix Hill are two women's graves, grave 53 and grave 96. Both graves contain simple trefoil small long brooches, with a disc brooch in grave 96. Both also contain amber beads, with a single glass bead in grave 96. Grave 96 also contains a scutiform pendant, an artefact-type which is widely attested in 6th century graves but has proved very difficult to assign to late 5th century contexts in Anglian England (Hines 1984, 227–8). On balance, one would conclude that these assemblages are most typical of the early 6th century.

For absolute datings at the end of the cemetery's life we have to rely on objects in two grave groups, grave 37 and grave 91. The former contained the garnet disc brooch of Kentish style which can be correlated with the Kentish chronology by its close but apparently derivative relationship with the Faversham brooch (above, 5.2.1.8). Absolute dates for such brooches are provided not only by a relative-chronological and typological sequence in Kentish finds which has a significant degree of overlap with the contemporary continental sequence but also by measurements of the purity of gold used upon them, which, it has been suggested, declined in a regular manner through the 7th century and can be approximately but in some cases usefully dated by reference to contemporary Merovingian gold coins (Hawkes *et al* 1966; Kent 1972; Brown and Schweizer 1973; Grierson and Blackburn 1986, 108–9; see above 6.5.2). There is unfortunately no estimate of date based on such analysis for either the Faversham brooch, or for its closest relative, a brooch from Dover-Buckland grave 29. In Evison's chronological scheme for that cemetery (1987), the latter grave is dated to the period 575–625. It also contained a gold bracteate decorated in Style II with a measured gold content of 63% (Evison 1987, 181–2). This figure, which is closely matched by that of a second Style II bracteate from the site (grave 134: 59% gold) would, by the criterion of gold fineness, imply a date of manufacture in the 630s or 640s (see especially Brown and Schweizer 1973, 181–3), implying in turn that Dover-Buckland grave 29 might be assigned to later in the 7th century than Evison assigns it. This has only indirect implications for the dating of the Edix Hill brooch. Nonetheless, since that brooch is to be regarded (like the Dover-Buckland brooch) as derivative of the model represented by the Faversham brooch, it appears overwhelmingly probable that it was made in the earlier 7th century and buried by around the middle of that century.

The gold fineness of the pendants from grave 91 has also been measured, in this case showing a markedly higher level (70–90%) than the Dover-Buckland bracteates just referred to. These readings are, on this basis, most consistent with a date of manufacture no later than *c* 635, although they could be considerably earlier. Grave 91 is stratigraphically later than grave 90, but the latter was a very poorly furnished grave with only a knife of Type A, size-group 2, which is of no value for close-dating purposes. Put together, these observations suggest the continued use of the cemetery into at least the second quarter of the 7th century.

7.3 Internal chronology of the burials

7.3.1 Female graves

The presence of Migration Period dress accessories identifies at least nineteen of the 46 osteologically or archaeologically sexed adult female burials as belonging to a prominent group of datable graves from an earlier phase at this site which is designated Phase I (Table 7.1). If we allow the presence of amber beads alone (ie without any other diagnostic artefacts) to qualify a grave deposit for inclusion in this group, a further twelve graves would be added to Phase I, including the two with annular brooches, and, we must particularly note, grave 83 with its antler belt ring. Also included is one child's grave, grave 108, with one amber and fourteen glass beads. Thus nearly two-thirds of the identifiable adult female graves are datable by grave goods to Phase I. Conversely only five, possibly six, of the remaining female graves can be assigned to the later period (referred to as Phase II at this site, and virtually equivalent to the generalised Final Phase) on the basis of their grave goods (Table 7.1). In one of these graves, grave 18, Sk42B is in fact stratigraphically earlier than the burials of three further individuals (Sk41, Sk42A1, and Sk42A2) but these are the severely disturbed interments of two unsexed adults and a three-year-old child. Moreover one, perhaps two, further adult female burials (in grave 1 certainly, and grave 35 less certainly) can be assigned to a late phase on the basis of their stratigraphical relationships with datable male burials (see below, 7.3.2). The 19th century collections testify to many more female burials of the earlier period, but none, with the possible exception of one unstratified pair of shears and one or two pin-beaters, certainly of the later.

As described above, the current understanding of the approximate absolute date-ranges of the periods concerned, both overall and at this cemetery, do not allow for this disproportion to be explained as a direct reflection of the duration of either phase within the overall life-span of the site. It is quite possible that both phases were of practically equal duration here, eg Phase I *c* 500–575, Phase II *c* 575–650. At the other extreme, a duration ratio of 4:1 (Phase I *c* 500–600, Phase II *c* 600–625) is the highest one could even hypothetically entertain, and in general a figure of 2:1 seems as high as one might reasonably imagine. This would just be reconcilable with both the evidence recovered and an assumption of equal representation of all periods of use of the site if all of

Table 7.1 The attribution of graves to Phases at Edix Hill based on grave goods and stratigraphical relationships

	Dated by grave goods			Stratigraphically dated				Dated by grave goods	
	Female			Female	Child/Unsexed	Male		Male	
	Skeleton No	Grave No		Skeleton No	Skeleton No	Skeleton No		Skeleton No	Grave No
PHASE I	4	3	'Main Group' firmly dated by Migration Period dress accessories						
	16B	10							
	20B	13			20A(=20B)				
	44A	19							
	44B	19							
	58B	29				58A (58B)	→	58A also contains a relatively early Group 1.1 shield boss	
	128	39							
	156	53							
	322B	66				322A (<322B)			
	354	68							
	359	69							
	401	74							
	424	78							
	428	79							
	436	83							
	526	93							
	530	95							
	547A	96			547B (=547A)				
	626A	106				626B (=626A)			
	9	5	'Dated' by amber beads		10A (<9)		Possibly dated by small spearheads		
	29	14			10B (<9)				
	31	15							
	45	20							
	127A	38						146	46
								147	47
	184	61							
								188	62
	369	72							
	432	82							
	440A	84			440B (=440A)				
								553	98
								632	107
	679	108							
	687A	110							
	687B	110							
	726	114							
PHASE II			Firmly dated by grave goods	2 (>3B/C)	3A1/3A2 (>2)		Firmly dated by grave goods	3B	2
								3C	2
								19	12
	42B	18			42A1 (>42B)				
					42A2 (>42B)				
	126	37							
								148	48
								151	51
	183	60							
	459	91							
								551	97
	583B	109			683A (>683B)				
			'Dated' by small oval copper-alloy buckle				'Dated' by small oval copper-alloy buckle	52	27
				119 (>148)					
	161	54							
								423	77

the otherwise undatable (unfurnished) female graves could be assigned to Phase II.

An analytical technique that is well suited to the task of uncovering any sequence of change in the female burials on Edix Hill is correspondence analysis. This is a method for computing the overall similarity of each member of a set of units (eg graves) to one another in terms of their composition as an assemblage of variables (eg artefact-types amongst the grave goods), in respect of which they will either match or not match one another (for a general description of the method and its employment, see Baxter 1994, esp 110–39, and Høilund Nielsen 1995). Correspondence analysis will reveal the structure in a set of data in terms of patterns of similarity if there is any such structure to be found; so that, for instance, a group of graves that by the typology used falls into two highly distinct categories will be presented diagrammatically as two clearly distinct clusters. Conversely, correspondence analysis can demonstrate the presence of a continuum in the data if one exists. With a set of data such as the Edix Hill graves, it is possible to hypothesise that there is a continuum from the earliest graves to the latest, and then to attempt to select for analysis only those graves and variables that are most relevant to the demonstration of this structure. This is not manipulation of the data to force an artificial result; it is the selection of data to demonstrate a postulated latent patterning as clearly as possible in diagrammatic and mathematical form. If such patterning is not there, it cannot be demonstrated; the basis, coherency, and interpretation of any pattern discovered remain fully open to criticism. If, in addition, there was a transitional horizon between the Migration Period and the Final Phase represented in the relationship between Phases I and II at Edix Hill, this would be the ideal means to test it.

The best result achieved so far in seeking to demonstrate the sequence of burial activity amongst the female graves on Edix Hill is shown in Figure 7.1 and Table 7.2. Clearly visible in the scatter of points in Figure 7.1 is the basic parabola that represents a good seriation with attested gradual replacement of the types in a data-set analysed by this means. The main group of earlier graves forms a dense cluster to the right of the graph. Four of the five grave groups definitely identified in Table 7.2 as later are found between the apex of the parabola (at the bottom) and the upper left-hand end. The situation is more clearly legible in the matrix representing these grave groups (Table 7.2).

Two artefact-types cross the phase-boundary imposed upon the matrix in Table 7.2, the spindle whorl and the latch lifter. It is interesting that the spindle whorl is suggested to be a predominantly late feature of grave furnishing by this analysis in light of the evidence noted above that weaving battens, shears and pin-beaters are also more frequently encountered in later graves. Other interesting artefact-types associated with later graves are the chatelaine and the small oval copper-alloy buckle. Although the chatelaine is rightly thought of as predominantly a Final Phase type, its possible occurrence in Migration Period contexts is confirmed by the evidence of Great Chesterford grave 21 and Morning Thorpe grave 358 (Evison 1994; Green *et al* 1987). A chatelaine occurs with, *inter alia*, what appears to have been a purse group containing amber beads and a penannular brooch, in the apparently Phase I grave, grave 20, at Edix Hill.

The small oval copper-alloy buckle is a type strongly represented in the Final Phase graves from Melbourn, Cambridgeshire (eg Wilson 1956, pl IVa and c–h) and was identified as typically Final Phase by both Leeds and Hyslop. At Edix Hill, a rather large (14mm wide) oval copper-alloy buckle was found in grave 95 (Phase I) along with another pair of applied saucer brooches with zoomorphic decoration and a large necklace with glass, amber and jet beads, copper-alloy rings and pendants. Small oval copper-alloy buckles also occur in two male graves (see below, 7.3.2), and in grave 54 (Phase II), a rather sparsely furnished grave in which an iron ring, a latch lifter and a knife (the latter unfortunately now lost and of unknown type and size) were found at the waist. It thus appears that latch lifters, chatelaines and oval copper-alloy buckles are amongst the dress accessories that continue from the Migration Period into the Final Phase artefact range. This sample of graves, however, provides no conclusive evidence for the continuity of annular brooches across this divide.

A further important point is that although this analysis suggests that combs as grave goods are characteristically late, in fact we have two definitely late graves containing combs (grave 18 and grave 91) and two further graves in which the comb is the only deposited item remaining in the seriation and which are therefore inevitably placed at this end of the sequence. Grave 14, in fact, also contained five large amber beads and an unusually varied group of seven glass beads, a plain ceramic bowl, and a knife of Type A, size-group 1. It certainly looks like a grave of the earlier phase on this evidence. Grave 105, conversely, is a well-preserved but sparsely furnished grave with only a broken and unclassifiable copper-alloy pin in addition to the comb. The majority of copper-alloy pins from this site are from later graves (above, 5.2.2). A seriously disturbed burial, Sk683A, actually unsexed although it has two glass beads attributed to it, is believed to be stratigraphically earlier than Sk683B, a burial at the same location, grave 109, with the iron-bound box and the ceramic vase. A strong but not exclusive association of combs as female grave goods with the later burials seems to be justified.

Despite the ambiguity of grave 83 (with its antler ring and amber beads, discussed under Phase I graves), there is no sign here of any set of graves, or artefact-types, that we could identify as an intermediary horizon between the larger, earlier set of graves and the smaller number of identifiable Phase II

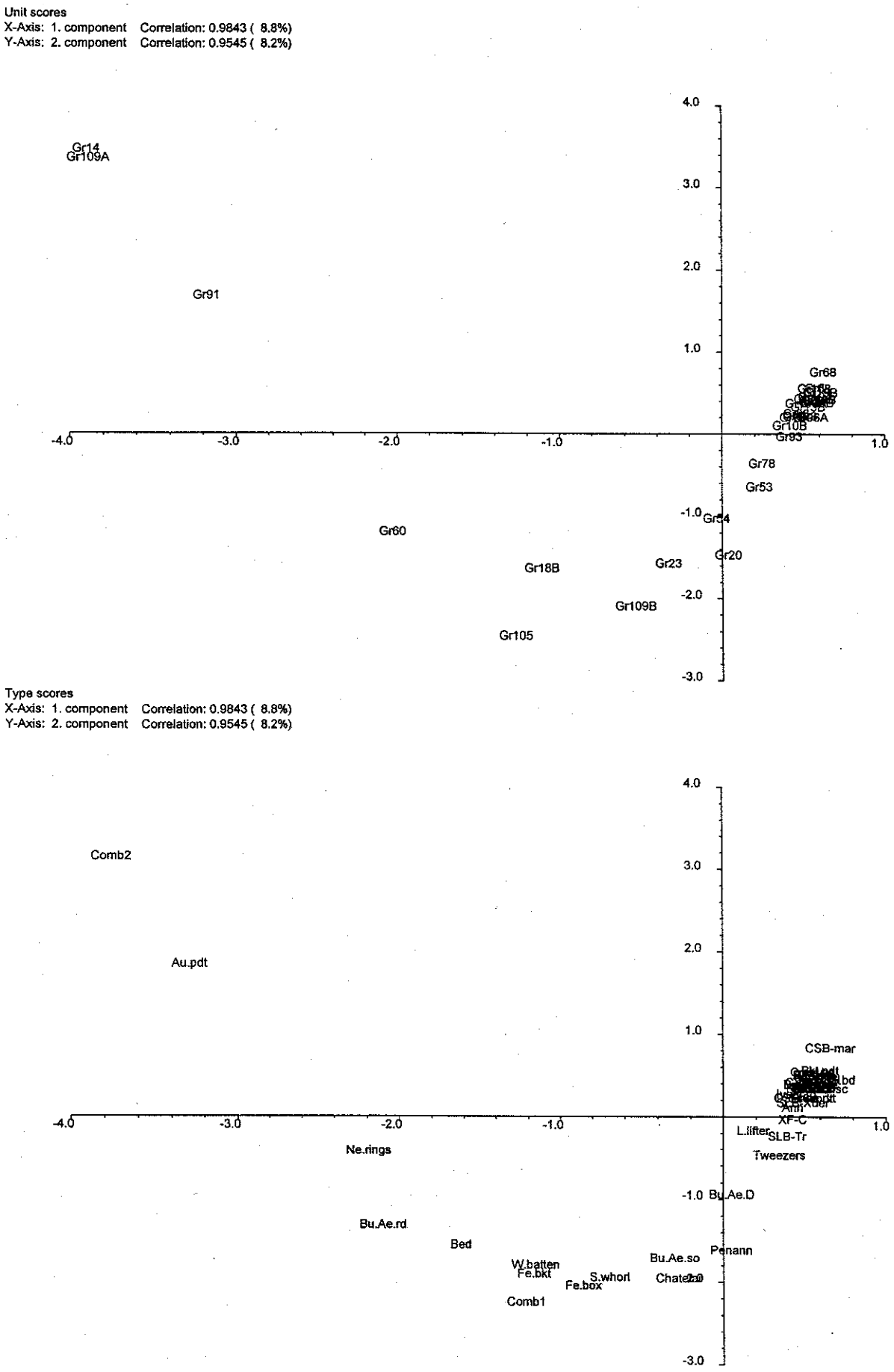


Figure 7.1 Correspondence analysis of female graves from Edix Hill, including the data shown in Table 7.2, using the first and second axes

Table 7.2 Sorted matrix of the data subjected to correspondence analysis and represented in Figure 7.1 Presence or absence represented (values in margin = correspondence analysis coordinates)

Grave	Comb 2	Au pdt	Ne rings (Ag)	Bu Ae rd	Bed	Comb 1	Fe bkt	W batten	Fe box	S whorl	Bu Ae s/o	Chatelaine	Bu Ae D	Penann	L lifter	SLB Tr	Tweezers	Ann	XF C	CSB 6sp	SLB Xder	Ivory ring	CSB 5sp	Bu Fe ov	XF D	B7 cl	B13c cl	Disc B	Scut pdt	R/Y bd	Crystal bd	SLB SH	Calcite bd	SK rings (Ae)	Bu Fe D	Bu S/T	Shoe rvt	B13a cl	Bd tube	SLB X	Ag f/ring	Owk disc	Bkt pdt	Am/GG bd	CSB mar	
14	1														1																															–3,97
109A	1																																													–3,97
91	1	1	1																																										–3,24
60			1	1	1																																								–2,08
105						1																																								–1,32
18B			1		1	1	1	1	1	1					1																													–1,16
109B									1	1	1	1																																		–0,56
23										1			1																																	–0,36
54											1				1																															–0,06
20												1		1			1																													0,06
53													1			1																															0,19
78													1		1			1																													0,21
10B															1			1								1																					0,38
79															1					1		1		1																							0,4
93															1		1		1		1						1																				0,4
83															1			1				1		1						1																0,42
69															1							1		1		1	1																			0,44
106A															1								1	1			1				1		1													0,47
13B															1		1			1		1			1			1			1			1	1			1							0,48
84A																								1																							0,5
96A																1												1																			0,5
39																		1						1				1				1				1	1									0,51
3																	1																						1								0,52
108																														1																	0,53
5																														1			1													0,54
19A																								1		1	1						1							1	1					0,54
29B																																			1												0,55
66B																																									1						0,56
19B																										1	1											1	1			1	1	1		0,57
68																															1														1	0,58
	-3,84	-3,34	-2,23	-2,15	-1,67	-1,28	-1,19	-1,19	-0,89	-0,72	-0,32	-0,26	0,01	0,06	0,2	0,35	0,38	0,39	0,41	0,41	0,45	0,45	0,48	0,48	0,49	0,5	0,5	0,51	0,51	0,51	0,52	0,53	0,53	0,53	0,53	0,53	0,53	0,54	0,55	0,56	0,56	0,59	0,59	0,59	0,6	

burials. Further analyses are continuing with other cemeteries in the region of Edix Hill (especially Barrington B, Great Chesterford, Melbourn, and Shudy Camps: below, 9.2–9.3) to try to shed more light on this problematic issue. Unfortunately, of these sites, only Barrington B has definite evidence of continuity from the Migration Period to the Final Phase like Barrington A/Edix Hill, and here the quality of the evidence recorded in 1880 is considerably poorer (cf below, 9.2 and 9.3.4). None of these sites in fact has the same standard of recording of finds allowing perfect comparison with Edix Hill, although the Great Chesterford material is at least in good enough condition and curation for full comparative assessment. A full account of these as yet incomplete investigations will be published in due course, but it can be reported here that analyses to date gives no further support to the hypothesis of an intermediary stage.

It thus seems probable that Phase I of the female burials at Edix Hill, with Migration Period dress accessories and amber beads, was contiguous with Phase II, which represents the Final Phase. We know of a number of types of dress accessory – chatelaines, annular brooches, and oval copper-alloy buckles – that survived from Phase I into Phase II, with perhaps a diminution of size characteristic of the latter two types. Certain types of personal equipment also appear in both phases, ie knives and latch lifters, spindle whorls and combs, with the latter two perhaps becoming more common in the later period (see also 6.10.7). Metal-bound wooden buckets are likewise found in both phases, although there are indications that buckets with sheet copper-alloy binding strips are more characteristic of the earlier period and iron-bound ones of the latter. This leaves, however, a substantial inventory of material that can be regarded as definitely characteristic of the one period or the other. Thus, if the two phases are contiguous, it seems that there must have been a short period of intense and thorough material cultural change sometime in the second half of the 6th century. It would be very valuable to be able to ascertain the absolute date of this shift.

The identified later female graves are too few and diverse for us to attempt to set up an internal relative chronological sequence based upon typology and grave assemblages. Within the Migration Period finds, however, we have detailed and tested typological sequences and even some absolute date-ranges for certain artefact-types – eg cruciform and small long brooches, great square-headed brooches, continental bow brooches, and belt fittings – together with rather less comprehensive insights in respect of others, such as cast saucer brooches and wrist-clasps. This group of finds has itself been subjected to correspondence analysis in an attempt to test and improve current chronological understanding. The results proved to be extremely complicated, as a pattern of relationships was found amongst the grave groups that seems not to be simply chronological but which rather has to be discussed in terms of the social analysis of the cemetery (below, 8.4). Nevertheless, a chronological trend seems to be detectable even within the Migration Period, with a number of distinct groups characteristic of the very earliest range of burials at the cemetery apparently gradually giving way to a more uniform and quite rich set of grave goods, particularly strongly characterised by annular brooches, Form B 7 clasps, ivory rings, and latch lifters. It is not difficult to imagine how this normalisation of grave furnishing might reflect social and cultural changes anticipating the radical shift to the Final Phase in eastern England – but these must be discussed in more detail in the next chapter.

7.3.2 Male graves

We can safely assume that the male burials at Edix Hill cover essentially the same absolute range (c 500 AD to the first half of the 7th century) as can be attested for the female burials. Here, however, we immediately face an interesting problem in that one male grave, grave 51, which appears from its grave goods to be one of the later graves at this site, is argued from an assessment of the excavation records to be later than one of the female graves, grave 37, which was used to define the later date of use of the cemetery on the basis of the Kentish garnet disc brooch it contained. The stratigraphical analysis (above, 3.2), however, also concludes that these burials must have been 'largely contemporary', so we cannot postulate a substantially extended life for the cemetery in the 7th century on this basis.

It is one of the commonplaces of early Anglo-Saxon archaeology that the less diversely furnished male graves are more resistant to both fine-chronological phasing and dating than the female graves. In some respects this seems especially to be the case with the Edix Hill burials, where there is, for instance, a very low level of typological variation amongst the shield bosses, with nine out of eleven classifiable specimens being of Group 3, dated by Dickinson and Härke (1992) from the early 6th to the mid 7th century – the inferred life-span of the cemetery. Overall, early Anglo-Saxon shield bosses yield more scope for relative dating than spearheads, with which, however, we do have more typological variation at this site. In grave goods alone, however, there is not the variation of type and assemblage present here for correspondence analysis to work as an analytical method.

The two classified shield bosses from recently excavated graves that are not of Group 3 are of types with contrasting date-ranges. The Group 6 boss from grave 12 is of a type dated by Dickinson and Härke (1992) between the late 6th and mid 7th centuries – in other words effectively contemporary with the Phase II of the female burials discussed above. The Group 1.1 boss (grave 29) is of a type believed to originate in the mid 5th century but continuing

through most of the 6th. Conveniently, grave 29 is recorded as contemporary with the Phase I female burial in the same grave. Three further 19th century finds – none from a recorded grave group – are of types dated between the middle of the 5th century and the middle to late 6th, but there is nothing here that need be dated earlier than the 6th century. A substantial proportion of the graves from which all of these shield bosses come were probably contemporary with the Migration Period female graves, although the point must be stressed that we do not yet have a properly integrated phasing of early Anglo-Saxon weaponry and female grave goods, especially dress accessories. Certainly of (relatively late) Migration Period style, however, is the Style I animal ornament and simple twist found on the two ornate, unstratified, shield mounts (Fig 3.29).

The chronology of early Anglo-Saxon spearheads was examined extensively by Michael Swanton (1973), whose conclusions are largely endorsed, albeit with rather limited discussion, by Härke (1992b, 85–7). The implications of their studies are that certain large spearhead-types – in particular Types E4 and C3, both represented at Edix Hill – are characteristic of the late 6th or 7th centuries; more doubtful now is Swanton's suggestion that certain small spearhead-types, such as the D1, F1, H1, and I1 types represented here, are particularly characteristic of a period up to the middle of the 6th century. The pair of Type E4 spearheads in grave 12, with the Group 6 shield boss, confirms the late, presumably 7th century, date of this grave. Grave 51, stratigraphically closely connected to the Phase II female grave, grave 37, and perhaps slightly later than it, contained a Type C3 spearhead. A second Type C3 spearhead was found in the adjacent grave, grave 48, in this case with no independent artefactual evidence to corroborate the late date proposed.

There is no particular evidence to support the dating of the five graves with spearheads of the smaller range to the first half of the 6th century or thereabouts. Although grave 98 was of a man aged 45+ and grave 46 of a man aged between 23–59, the other three (graves 47, 62, and 107) were found with relatively young persons, with osteologically estimated ages of 16–17 and 16 for the former two, while grave 107 is the grave of a five-year-old child. The only other identifiably male burial – actually osteologically unsexed, but containing shield studs, grave 9 – with an estimated age below eighteen contained no spearhead. Stratigraphical evidence shows that grave 62 was earlier than the Phase II female bed-burial grave 60.

The men's burials from this cemetery produced a large number of belt buckles and knives, but few of these are of use for dating purposes on present knowledge. Once again, however, a small number of distinctive types imply a relatively late date for certain graves. Two male graves contained copper-alloy buckles with small oval loops (grave 27 and grave 77), a type strongly associated with female graves of Phase II. In both of these graves the associated finds included only unclassifiable shield boss fragments and no spearheads. It can be noted that grave 27 also produced one of the larger knives from this cemetery, of Type A, although with a blade-length of 115mm this falls only into Härke's size-group 2 and cannot in itself be regarded as characteristic of a late date.

One male grave, however, is certainly datable to Phase II on the strength of the knife it contained: grave 2C, with a knife of Type C and size-group 3. This grave also contained a shield boss tentatively assigned to Group 3. Stratigraphically the burial is part of a substantial complex of graves, including grave 1 containing an adult female, grave 2A, two severely disturbed burials apparently of an adult female and male , and grave 2B, another adult male burial. Of these, grave 2C is stratigraphically identified as either earlier than or contemporary with grave 2B which itself is one of the two male burials from this site to yield a comb amongst the grave goods – an artefact-type identified above as strongly characteristic of the later female graves. It appears that the three burials, graves 1, 2A.1, and 2A.2 were later still than these, but these burials were shallow, and so disturbed that both the sequence and the time-depth involved are virtually indiscernible.

The other male burial from which a comb fragment was retrieved was grave 97. This single-sided comb with a double connecting rib on either side has been identified by Ian Riddler as a distinctively late type, probably 7th century though possibly of the later 6th century (above, 5.3.5). Also in grave 97 was a small Type A knife, of size-group 1.

We can therefore identify later and earlier phases amongst the male graves from this site as we can amongst the female graves. In respect of the male graves, this is achieved by distinguishing a group of later burials; we do not, conversely, have a range of artefact-types that are effectively diagnostic of earlier male burials. We can assume that some proportion of the remaining male graves, both those furnished with classifiable artefacts and those without, derive from the earlier phase, in the 6th century, but cannot easily suggest what proportion that may be. The core of the later group of burials is a set of three graves with strong dating evidence (Table 7.1): grave 12 with the combination of a diagnostic shield boss and spearheads, grave 2 Sk3C with its knife and Sk3B by stratigraphy and the comb, and grave 51 by stratigraphy and its spearhead. Highly probable members of this phase are grave 48 with the second Type C3 spearhead and grave 97 with its distinctive comb.

A degree of correlation between the late phase amongst the male burials and that of the Phase II female burials is provided on the one hand by the stratigraphical relationship between grave 51 and grave 37, and on the other by common artefact-types. The only other definite Type C knives from the site are from the bed-burial in grave 18, while the double-sided comb of the stratigraphically late grave 2B is matched in the Phase II female grave, grave 91 and the chronologically uncertain grave 109A (if it was

not displaced from grave 109B). Comparison with the female graves in respect of small oval copper-alloy buckles also suggests that grave 27 and grave 77 might be added to the later group of male burials, though in these cases there is no independent supporting evidence.

If we accept the small oval copper-alloy buckle as diagnostic of the later female burials too, grave 54 can be added to that group. This provides us, then, with six later female graves and eight later male graves identified in part or whole on the basis of their grave goods (Table 7.1). While, however, we can positively assign nearly two-thirds of the osteologically or archaeologically identified adult female graves to Phase I (the Migration Period), we have failed to define any such phase with distinctive grave goods amongst the male graves. So far as we know, nearly all of the remaining male graves could be dated virtually anywhere within the functioning period of the cemetery. Some must have been contemporary with the earlier-phase female burials, but we can identify, on the basis of stratigraphy, only two which are certainly so. In grave 29 the burial of the man, Sk58A, with his Group 1.1 shield boss is considered to be contemporary with the Phase I female burial of Sk58B, and in grave 106 the male Sk626B, with an undiagnostic Type B knife and Type H2 spearhead, contemporary with the female Sk626A. Beyond this there is only the doubtful possibility that the four adult male graves with small spearheads are relatively early.

It would be improper simply to assume the same proportion between well-furnished male and female graves in the two phases. While we have grounds for regarding the male late phase and the female late phase as largely contemporary, we cannot demonstrate that they began – or indeed ended – at effectively the same date on this site, and therefore cover the same time-span. And while the difference between the six late female graves identified on the basis of grave goods and the eight late male graves identified by the same means need not be of any significance, it serves to draw our attention to the serious possibility that one aspect of the general change reflected by the transition between two phases could have been a greater investment in the furnishing of male graves and a simultaneous disinvestment in female burials. At the heart of the problems involved in the Migration Period/Final Phase transition discussed above there may well have been social and cultural circumstances that critically disrupted continuity in female burial customs. As a matter of fact, stratigraphy adds at least five burials to the fourteen assignable to the later male and female phases on the basis of grave goods. One is that of a child in grave 18 (Sk42A.1), three of unsexed adults (Sk3A.1 and Sk3A.2 in grave 2 and Sk42A.2 in grave 18), and one or two of adult females (Sk2 in grave 1 and Sk119 in grave 35). Thus the number of adult female graves datable to Phase II becomes practically equal to the number of similarly datable adult male graves. The evidence of grave goods and stratigraphy combined, however, still assigns the burials of only nineteen or twenty out of 147 identifiable individuals of the Anglo-Saxon period from the recent excavations in the cemetery (less than one in seven) to the later phase, far too low a proportion to be explained on the basis of the probable duration of the phases. Unless, then, there was a large difference in the size of the community that buried at Edix Hill between the two phases, the inescapable implication of this is that a high proportion of the burials too poorly furnished to be assigned to a phase on the basis of the grave goods may have derived from Phase II. In any attempt to understand the chronology of these burials and its problems, we need therefore to consider the social reconstruction of the community that used this cemetery.

7.3.3 Children's graves

As noted above, two children's graves are tentatively associable with the earlier phase amongst the male and female graves on the basis of their grave goods: grave 107 with a Type H1 spearhead and grave 108 with its single amber bead. A total of five more children's burials, however, can be assigned to Phase I on stratigraphical grounds: those of Sk20A and Sk547B, which appear to be contemporary with the amply furnished Phase I female burials Sk20B and Sk547A (in graves 13 and 96 respectively); Sk440B, which appears to be contemporary with Sk440A (grave 84), an adult female with amber beads; and Sk10A and Sk10B (grave 6) which are stratigraphically earlier than Sk9 (grave 5), another adult female grave with amber beads. Just one child's burial, Sk42A.1 (grave 18), is stratigraphically assignable to Phase II. Only one child's burial is stratigraphically identified as contemporary with an adult male's burial: Sk300B with Sk300A (grave 65), the latter an apparently only slightly disturbed grave in which no grave goods were found, the occupant of which is osteologically sexed.

7.4 The distribution of the graves

A plot of the burials that can be assigned to the later male and female phases immediately seems to suggest a clear distributional concentration towards the north, on and immediately below the point of the promontory of Edix Hill, and less strongly to the east of this (Fig 7.2). The impression is perhaps emphasised by the location of grave 97, one of the late male graves, at some distance to the north-west. It is, however, impossible to identify and argue for any simple horizontal-stratigraphic trend in these burials. The impression of clustering is inevitably enhanced by the absence of later burials amongst the relatively small number of graves in a line following the Iron Age ditch (F304/543) to the south of the hill, while the area immediately to the south of the promontory without late burials (ie approximately

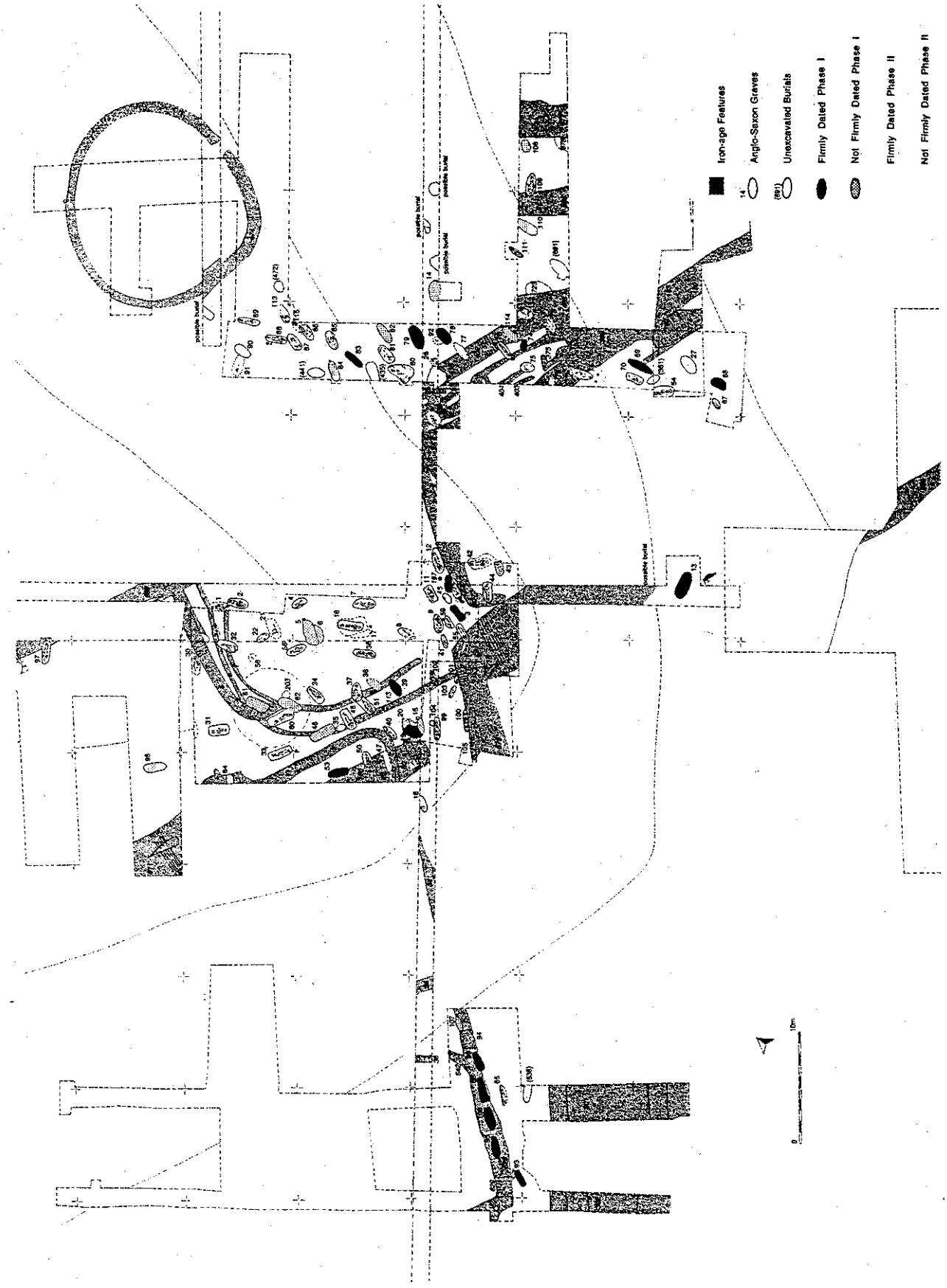


Figure 7.2 Distribution of dated graves at Edix Hill

below grid line 132N) is an area with a particularly strong concentration of children's graves. The chronological distribution of the graves cannot be discussed on its own, but has to be correlated with a possible system of zoning at the site which is examined in detail in the next chapter.

Chapter 8 Social analysis

8.1 Demography

8.1.1 Size of population

From the number of individuals buried in the cemetery and the timespan over which it was used, it should be possible to gain a rough idea of the size of the community that buried its dead on Edix Hill. As noted above, however (5.8 and 7.2), both of these factors can only be estimated, and are hedged around with considerable uncertainty, as, therefore, must be all attempts to discover social patterning within this evidence. We can nevertheless safely suppose that a cemetery containing at least 300 burials was developed over a period of approximately 150 years. Although there is a large imbalance between the numbers of graves that can be definitely assigned to either of the two phases of the site (above, Chapter 7), we have no basis for inferring any growth or shrinkage of this community over the lifespan of the cemetery and can thus only produce an average figure for the size of a notionally unchanging community.

The simplest method for producing a coarse estimate of the average size of the population burying at a cemetery site like this is to multiply the rate of burial per year by the mean age at death of the population. The inferred minimum of 300 burials in 150 years gives a minimum of two burials per year. The mean age at death is about 25. This produces a figure of 50 as the approximate average number of individuals in the community represented by the cemetery at any one time. If 300 is a significant underestimate of the number of burials originally at Edix Hill/Barrington A, these figures could rise, though there is no reason to expect them to do so by more than 20–30%, ie up to a figure which would place the number of burials on a level with the largest comparable Anglo-Saxon inhumation cemetery known to date at Morning Thorpe. This would increase the estimated population to about 65.

A second specific reason for believing this range to underestimate the typical size of the living population at any one time is that the proportion of children's graves (defined below, 8.2.1) amongst those recently excavated, 21%, appears low relative not only to reasonable expectations of child mortality (Weiss 1973) but also to other Anglo-Saxon cemeteries. Corinne Duhig (above, 4.4 and 4.4.2.2) notes that infants in particular seem to be under-represented. Sally Crawford (1991, 125–33 and Table II) provides figures from a group of contemporary Anglo-Saxon cemeteries, some of them large enough to be reliable for comparative statistical purposes. The cemeteries at Portway and Worthy Park, Hants, and Polhill, Kent, provide evidence of mortality rates amongst the under fifteens of over 30%; the comparable figure from Edix Hill is 23%. This allows us to hypothesise, as has often been done elsewhere, that dead children could have been treated in such a way as to leave them under-represented in the main cemetery.

Also recognised as an important factor in demographic reconstruction is the size and time span of the reproductive generation. The size of the reproductive generation is the estimated average number of persons within the community at any one time who contribute to its numerical reproduction. The size of this group is dependent upon the average rate of reproduction: the more rapidly the community can reproduce a new generation of itself, the smaller the reproductive group required to produce a given number of persons and thus burials within a given period. The conventional figure for the time span of a reproductive generation is 16.5 years (Dierkens 1981), although a figure as high as 30 years has been suggested in the context of Anglo-Saxon cemeteries (Boyle *et al* 1995, 115). The simple basic formula for calculating the size of the reproductive generation is to multiply the relevant burial rate per year by the estimated length of the generation span in years.

The relevant burial rate per year is calculated in the same way as the general burial rate given above but should exclude the proportion of burials of children and juveniles who cannot have contributed to social reproduction. With a generation span as low as 16.5 years it appears reasonable that this should exclude those with estimated ages below fifteen. Of the 147 individuals identified in the recent excavations, 33 can be assigned to this age band, a proportion of about 22.5%. Thus the relevant (estimated) death-rate is one of 232.5 burials per 150 years or 1.55 per year. This yields an average reproductive generation sized 25–26. As noted above, the longer the length of the reproductive generation assumed, the larger this figure must be, with proportionate adjustments of the relevant death-rate in every case.

This particular figure is a measure pertaining to the structure of the community in a very abstract form. To relate it to a living community this model parental core consistently reproducing itself generation after generation needs to be considered in the light of, in particular, the overall age structure of the community (see also below, 8.1.2). From the estimated ages of death of the individuals buried in the cemetery, about 40% of those who reached the reproductive age assumed above died by the age of 25. About 33.5%, however, lived to pass the age of 35, by when, according to these assumptions, they would

Table 8.1 Distribution of age at death by gender:
Age bands: A: 0–12; B: 13–25 C: 25–35; D: 35–45; E: 45+

	Masculine	Feminine
A (0–12):	15.5	15.5
B (13–25):	18.5[1]	14.5[2]
C (25–35):	7.5[3]	15[4]
D (35–45):	3[5]	5[6]
E (45 +):	12	6.5[7]

Age group A – 31 children's graves divided evenly between the sexes
[1] Male band B one individual aged 20–30 divided evenly between groups A and B
[2] Female band B four individuals aged at 25 and one individual aged at 19–35 divided evenly between bands A and B
[3] Male band C, see note 1, two individuals aged at 35 divided evenly between bands B and C
[4] Female band C, see note 2, includes one individual aged at 25–23; one individual aged at 35 divided evenly between bands B and C
[5] Male band D, see note 3
[6] Female band D, see note 4, also includes one individual aged at 35–39 divided evenly between bands D and E
[7] Female band E, see note 6

be likely to be grandparents. The coarse overall estimate of the size of the community also included the minimum figure of 22% for those who died before reaching reproductive maturity.

8.1.2 Age structure

The good state of skeletal preservation in the recently excavated graves and the detailed osteological analysis of this material allow us a clear view of the incidence of death in relation to age and sex and thus of the age structure of the living community at least in respect of those treated as adults. Osteology allows the close ageing (to one or two years) of bodies up to the young adult stage of the late teens (see above, 4.3 and 4.4.2). Archaeologically (below, 8.2.1–3), it makes good sense to discuss age within five bands, four of which are of conveniently similar sizes: 0–12 (child: band A), 12–25 (juvenile/adult 1: band B), 25–35 (adult 2: band C), 35–45 (adult 3: band D) and 45+ (adult 4: band E). This reflects the fact that cultural treatment as an adult within this community was afforded to juveniles who would not, osteologically, be regarded as skeletally mature (cf above, 4.4.2). There is a distinct change in the provision of grave goods into a typically adult category around a threshold at twelve to fourteen years of age.

If we assume that the 31 children's graves can be divided equally between male and female, we can observe the pattern of incidence of death shown in Table 8.1. The figures in this table include a small number of individuals who cannot be dated within a single age band but who can be shared between adjacent bands. The most striking difference between the sexes is the high observed incidence of death for women in the age-range 25–35. By the standard χ^2 test we can have only a little less than 90% confidence that this represents non-random variation in the population sampled. However, our number of age-determined graves is estimated to represent about one-third of the total community buried on Edix Hill: a high sample-to-population ratio which justifies us in treating the observed data as significant. It would in any event be wrong to ignore so strong an indication that women faced a considerably higher death-rate than men in the age range of 25–35, particularly as the hazards of childbearing present a ready and adequate explanation for this (see above, 4.4.2.1). A further consequence is that the living population would have had a majority of older men, constituted particularly of the higher number of men in their 40s or above. It will be interesting, therefore, to investigate what role and status this distinctive group within the community may have had (below, 8.2.2). We cannot, of course, take account of the unsexed graves in this analysis, a group from which all identifiable children are automatically excluded (below, Table 8.6). At least seven (33%) of this group belong to the 12–25 age band while slightly more than 40% of the sexable burials fall in that band. It is therefore probable that the unsexed burials are in broad terms a representative cross-section of the population represented by the sexed burials; it should be noted that female bones can be more fragile, rendering their skeletons less easy to sex, and that the more conspicuous female grave goods may have been more susceptible to robbing by 19th century diggers, which would in turn have resulted in considerable damage to the skeletons when they were dug over. There are indeed slightly fewer females (46) of age bands B–E identified by either grave goods or osteology from the recent excavations than males (50).

8.1.3 Health of the population and lifestyle

The height, age at death, and other evidence of the skeletons show that the population buried at Edix Hill was in general terms very healthy. It is possible that a large number of diseases which are not detectable from the skeletal remains could have been prevalent, but there is no osteological evidence for malnutrition nor significant plateaux in age of death that could be attributed to susceptibility to disease (above, 4.6). Neither is there evidence for epidemics

from the archaeological record such as hurried multiple burials or plague pits. Stress indicators such as Harris lines and hypoplasia were found, suggesting a measure of nutritional deficiency and other episodes of stress, but the incidence of this was not serious compared to other populations. Indeed it was found that many of the potentially 'high-status' male burials with weapons also had stress indicators, but there is no evidence that the individuals suffered restricted development as a result of these episodes or any other factors. Such indicators have no detectable link to differential poverty or deprivation within this population.

In some cases, indeed, the community appears to have accommodated those less able to contribute fully to society, and to have respected individuals in spite of obvious disfigurement. This is most evident with the 7th century leper who was given a high-status bed-burial, Sk42B, in grave 18. A number of male skeletons suggest that some men could have been debilitated in life from weapon injuries (see below, 8.2.2) or, in the case of Sk146 (grave 46), cancer. Yet these males were clearly able to continue to live within the community with these conditions for some time before their death and subsequent burial with grave goods which imply no diminution of status because of their condition.

Evidence from the skeletons shows that osteoarthritis was endemic, although the parts of the body where this occurred tended to vary between males and females. Such differences can be attributed to weight distributions and occupational diversity, but in general the level of incidence suggests a community used to hard manual labour. More osteoarthritis has been found amongst the males than amongst the females, and specific evidence relating to joints shows that the sterno-clavicular joint (that between the breast bone and the collar bone) was particularly affected, probably from a range of activities such as lifting, pulling, sawing, chopping and so on, and that right-handedness can be inferred from the predominance of right-sided elbow arthritis, especially in the males.

From our general knowledge and understanding of early Anglo-Saxon settlements and their economy, we can presume agricultural work and woodworking to have been regular and probably dominant aspects of male life, while the frequency of weaponry amongst the grave goods suggests that warfare was an activity at least ideologically strongly associated with male culture. There is little direct symbolisation of basic economic activities in either male or female graves. Farming is only rather uncertainly represented by the pair of shears and the bells found in the 19th century, and its secondary products by the small number of textile-working tools from female graves (above, 5.3.6–7 and 5.7.3). There are, however, other indicators of a productive agricultural regime, including artefactual evidence involving leather and textiles. The pots and miniature buckets may have contained food or drink that could have reflected local production but no analysis has been undertaken of this.

The skeletal evidence is therefore compatible with a vigorous outdoor life, and the generally healthy state of the population implies a well-balanced diet. The community's activities apparently produced sufficient surplus for them to be able to acquire manufactured products, for example jewellery and weaponry, from external suppliers or craftsmen. We cannot yet tell how much of the range of craft skills represented by, for instance, the technological evidence reviewed in Chapter 6 would have been learnt and practised within the community.

The economic base also allowed for the support of members of the community less able to contribute productively. Diseases related to agricultural work do not often survive in the archaeological record. Although worm infestations (or more probably the anaemia of chronic infection (see above, 4.6.3.2)) are indicated by examples of *cribra*, this in fact confirms the good general health of the population as *cribra* implies a strong bodily response combating infection. Tuberculosis has been identified in one case, a disease that can be expected in the context of cattle-herding.

The community's military capacity is apparently reflected by the fact that more than half of the identifiable men were buried with at least one item of weaponry. Injuries to four male skulls (Sk148 (grave 48), Sk447A (grave 85), Sk451A (grave 87), and Sk553 (grave 98)) appear to have been derived from edged weapons, probably swords. That the individuals survived these wounds emphasises the robust health enjoyed by this population. Another male, Sk13A (grave 9), was found to have had a spear-wound in his shoulder. Possible axe damage to a shield is reported from a 19th century find (Babington 1860, 9), but 19th century antiquarians were prone to over-imaginative interpretations of this kind. There is nevertheless clear evidence that men from this community had engaged in battle. The weaponry buried with them therefore cannot be regarded as purely symbolic (see above, 6.6).

8.2 Age and gender groups

8.2.1 Childhood and adulthood

The graves of children under the age of twelve are generally sparsely furnished (Table 8.2). From the age of twelve to fourteen upwards individuals begin to be buried with grave goods more typical of the adult range (Tables 8.3–4). Thus grave 15, the burial of a twelve-year-old girl, has eleven glass and amber beads, while grave 78, the burial of a fourteen-year-old girl, has an annular brooch, twelve beads, a buckle, and a complex belt assemblage including an iron ring and latch lifters. Similarly a fifteen-year-old boy in grave 76 was buried with a spearhead and buckle, and a sixteen-year-old in grave 62 with a buckle, spearhead, knife, and (perhaps) an iron pin.

Table 8.2 Matrix of children's burials (age band A) showing age, skeletal preservation, and grave goods

Grave	Skeleton	Age	NAT	Preservation	Glass bead	Amber bead	Bead tubes	Bone pin	Knife	Buckle Fe D	Buckle Fe unid	Fe ring	Bracelet	Pottery	Spear-head	Nail	Misc
6	10A	6	2	70%	1				1								
6	10B	4	*1	60%								1		Sherds			
8	12	4	3	75%					1			1					Fe frags
13	20A	Infant	3	60%					1		1			1			Fe frags
18	42A	3	1?	2%					?1								
38	127B†	2–3	0–1	1%													
41	133	6–7	0-1	85%													
43	136B	5		15%													
45	139	Ch-Adol	1	1%					1								
56	172	8		60%													
57	175	Perinatal		75%													
59	178	3–4	1–2	85%							?1					1	
61	184B†	Infant		<1%													
65	300B	2	1	2%									1				
67	352	3.5–4		90%													
74	401	<7	2	40%										Disc			Cu-a cl plate
80	430C	<12		<5%													
82	432B†	3–4	0–1	2%													
84	440B	Perinatal		50%													
85	447B	6–7	0–1	50%													
92	466B†	Ch-Adol		<1%													
94	529	9	3	75%				1	1		1						
96	547B	10–11	2?	90%	?2		?1										Scut pendant
101	584	3	1	98%	1												
102	586	10–11	1–1	90%													Fe rod
103	587	8		90%													
104	591	7		15%													
107	632	5	2	35%						1					1		
108	679	1.5	2	80%	14	1								1			
112	719B†	7–12	0–1	2%													
112	719C†	Ch-Adol		<1%													

† Possibly residual

Both the range and the quantity of artefact-types in the children's graves are typically limited. The most frequent items in the form of dress-accessories and tools are associated with a belt: there are buckles in four graves, an iron ring in one, and knives in five or six graves. Other recurrent grave goods are beads, from three or four graves (an association in grave 96 is uncertain), and pottery or ceramic fragments in a further four. The provision of beads involves only one or two glass beads in each case, except for grave 108, a child of eighteen months (Sk679) buried with fourteen glass beads and one amber bead. This grave also contained a plain and relatively coarse pot, as did grave 13, the grave of an infant (ie a child less than one year old). The one other exceptionally furnished child's grave is grave 107, a five-year-old, presumably a boy, who was buried with a Type H1 spearhead and a buckle.

More than half the identified children's graves from the recent excavations have no recorded grave goods, and only 29% have evidence for more than one artefact in the grave. These figures, however, probably give a misleading impression of the proportion of children's graves with no grave goods at all because the average degree of skeletal preservation in the eighteen children's graves with no certain grave goods is low, just over 30%, while only one of the children's graves with two or more grave goods has less than 35% of the skeleton preserved and the average preservation in this set is over 66%. This suggests a correlation between poor preservation (for whatever reason) and lack of grave goods.

The establishment of a cultural child-adult threshold around the age of twelve agrees with the findings of Sally Crawford (1991, 239–45). There is, however, no clear evidence in these finds of a threshold between an infant/young child age group and older children around the age of four to five such as Crawford observed in her broader survey (1991, 235–9). Infants and young children are often found buried with relatively numerous grave goods: see, for instance, grave 13, grave 108, grave 8, and grave 59. Crawford also found that knives are buried with children from the age of two to three, and that their frequency increases markedly after the age of eight to nine (1991, 149–51). Here, however, we have knives with an infant in grave 13, a four-year-old in grave 8 , a six-year-old in grave 6, a nine-year-old in grave 94, in a 'child-adolescent' grave (grave 45), and possibly with a three-year-old in grave 18.

The provision of certain classes of grave goods in children's graves is noteworthy especially in the light of comparative data from other neighbouring cemeteries such as Great Chesterford, Barrington B, Linton Heath, Little Wilbraham, Melbourn, and Shudy Camps (Evison 1994; Foster 1883; Neville 1854; Neville 1852; Wilson 1956; Lethbridge 1936). Beads and knives are generally frequent children's grave goods (Crawford 1991, 149–51 and Table 4). The provision of pottery in the graves of what are identified as 'children' or 'infants' is relatively frequent at Great Chesterford, occurring in eight graves out of 21. This is not, however, particularly well matched at other sites, with, for instance, one example in thirteen graves at Barrington B, one in seven at Melbourn, and two in twelve at Shudy Camps. The slip-knot bracelet found with Sk300B (a two-year-old) in grave 65 is paralleled in graves 31, 34, and 154 at Great Chesterford – all infants' graves – Barrington B grave 78, and Little Wilbraham graves 38 and 165, all of which are also recorded as 'infants'. Linton Heath grave 12 was attributed to a twelve to fourteen-year-old and contained two such bracelets. As noted above (5.2.5.2), this is an artefact-type of Roman-period origin. In this light the apparently Roman type of bone pin from Edix Hill grave 94 and the presence of Roman coins in three Great Chesterford children's graves (graves 34, 111, and 136) also attract attention (cf below, 9.4).

Within the cemetery of Edix Hill there seems to be a particular concentration of children's graves in a quite densely packed area on the brow of the knoll, around and below grid 130N (Fig 8.1; cf below, 8.2.2–3). There is a concentration of immature skeletons found in an area of 200 square metres here in Trench XVI and adjacent parts of Trenches I and X. In fact the bones of eight children buried here constitute 26.7% of the burials in this zone, while children's burials make up 21% of the burials over the site as a whole and thus occur at an average frequency of 19.7% elsewhere. Within this area there were also seven adolescents (ie persons aged thirteen to seventeen), three of whom can be identified as female and one as a male, and nine older adult females as opposed to six adult males. The adolescent presence here is particularly high (approximately 50% of adolescents over the whole site) and in a total population in which males and females are approximately equal there is almost double the number of feminine graves to masculine ones in this limited area. This is therefore a distinct section of the cemetery with a disproportionately high number of immature and feminine burials.

Otherwise the children's graves appear to be quite evenly dispersed throughout the excavated areas. Certainly the demonstrably better furnished children's graves are well spread out. We may note that none of the four children's burials in the group in Trench XII (*c* 450–470E/120–125N) is unfurnished. The distribution of definite examples of double burials of a child and an adult is likewise dispersed, with only two adjacent examples, again in Trench XII (see below, 8.3.4). The compass alignment of the children's graves varies in keeping with the graves on the site as a whole.

8.2.2 Adult male burials

The thorough contrast amongst adult graves between male and female is a well-known feature of early Anglo-Saxon archaeology (cf Chapter 7). Both archaeological and osteological attributions of gender and sex are often probable rather than certain

Table 8.3 Matrix of femine burials showing age, range of identified artefact categories, skeletal preservation, and grave goods

Grave	Skeleton	Age	RIAC	Preservation	X form C	X form D	SLB CPo	SLB SqH	SLB Tre	SLB Xder	ASB Zoo	CSB	Annular	Disc Brooch	Openwork disc	Penannular	Garnet db	Fe pin	Cu-a pin	Bone pin	Red beads	Blue beads	Yellow beads	Green beads	White beads	Gold/Glass beads	Amber beads	Jet beads	Crystal beads	Calcite beads	SK rings (Cu-a)	Bucket pendant	Bead tube	Spangles	Scutiform pendant	Rings (Ag)	Cp sc pendant	Drop pendant	Chatelaine chain	Buckle Fe oval	Buckle Fe D	Buckle Cu-a oval	Buckle Cu-a D	Buckle Cu-a rd	Buckle Cu-a s/o	Buckle S/T	Shoe rivet	Strapend	Fe ring	Cu-a ring	Cu-a clasp	B7 clasp	B13a clasp	B13C clasp	Ag f/ring	S/K bracelet	Fe knife	Tweezers	Latch lifter	Purse ring	Weaving batten	Spindle whorl	Bone awl	Cu-a rim mount	Fe Bucket	Fe box	Pottery	Glass	Comb	Bed	Nail	Coin
1	2	35-59	2	65%																																																				1						1									
3	4	25–35	8	80%			1																				29				1										1								1			1					1	1														2
5	9	25–29	3	90%																	26	5	19	4	7		6			1																											1										Sherds					
10	16A	30–34		80%																																																																				
10	16B	15–16	4	50%									1								1						15																									1							1													
13	20B	25	11	85%		1				1				1							1						35		1		1			1														1					1				1	?1	1	1													
14	29	35–45	4	80%																	2	2	1		2		5																														1										1		1			
15	31	12	1	75%																	2	1					8																																														
18	42B	18–20	11	85%																		1														?1				X	X																1		1		1	1			1	1		1	1	1		
19	44A	18	5	45%			1														1						14			1										1												1		1	1																	
19	44B	35	6	60%											1						1	2		2		17	50					?1	1															1	1	1		1	1	1																		
20	45	19	7	70%												1											12												1											1							?1	1													1	
23	48	25–35	3	10%																								1															1																			1										
29	58B	NA	4	50%							1											7	2		1		3														X							1																								
35	119	19–35		80%																																																																				
37	126	45+	2	75%													1																																								1															
38	127A	35–45	4	40%														1					1				24																						1								1															
39	128	16–17	4	20%				1					1	1																										1						1	1												?1													
42	135	50	2	90%																																				X	X																1															
47	147B	26–70	2	5%																																																								1								Sherds					
53	156	25–29	5	80%					1									?1									26																1														1														?1	
54	161	23–35	5	90%																																									1				1								1		1													1	
55	171	21–25		75%																																																																				
60	183	25–32	7	70%															1																	1			1					1											1		1														1		
61	184A	25–35	2	80%																	3	1			1		16																														1															
66	322B	25	4–8	40%			1												1			2					72				1									?X	?X								?1								?1															
68	354	45+	6	10%								1															18		2											X	X								1		1								?1												?1	
69	359	18	7	90%																																				1								?1	1			1		1			1		1	1													
72	369	NA	1	5%																							10																																														
78	424	14	5	90%									1											1			11																1						1	1									1													
79	428	30–34	7	99%								1									6	5		1			145													1									1								1		1	1													
82	432A	NA	3	75%																							10														1																														1	
83	436	25	6	99%									1								4	1	5				3													1																	1		1	1													
84	440A	25–35	3	9%																		1	1				29													1																															1	
90	458	60+	1	98%																																																					1															
91	459	18	7	10%																		5		2							1					1	1	1																			1												1		1	
93	526	35–459	6	99%	1					1																	17																											1			1	1	1													
94	529	9	3	75%																1																				X	X																1															
95	530	52–59	5	99%							1											13				3	45	1						1								1														1																
96	547A	25–35	5	85%					1					1								1		2			12						1																1								1															
105	592	52–59	2	98%															1																																																		1			
106	626A	18–20	5	95%								1											3	2	1	5	1671		1	1										1														1					1													
108	679	18 mths	2	80%																	4	2	4	1	2																																										1					
109	683B	35–45	8	90%																	1																		1						1												1					1				1	1					1
110	687A	25	2	65%																							2																																												1	
110	687B	25–29	2	55%																							4																																												1	
113	725A	25–35		1%																																																																					
114	726	17–25	1	85%																							17																																													

Table 8.4 Matrix of masculine burials showing age, skeletal preservation, and grave goods

Grave	Skeleton	Age	Preservation	Buckle Fe oval	Buckle Fe D	Buckle Cu-a D	Buckle Cu-a s/o	Shield Boss 1	Shield Boss 3	Shield Boss 6	Shield Boss unid	Spearhead C3	Spearhead D1	Spearhead E2	Spearhead E4	Spearhead F1	Spearhead H1	Spearhead H2	Spearhead H3	Spearhead I1	Spearhead L	Spearhead unid	Knife	Cu-a rim mount	Fe pin	Bucket Cu-a	Glass	Pottery	Nail	Cu-a ring	Fe ring	Comb	Beads
2	3B	NA	55%																					1								1	
2	3C	18	85%		1				1														1	1									
4	8	NA	15%																				1				1						
7	11	25–35	85%	1					1					1									1					1					
9	13A	45+	85%	1															1				1	1									
9	13B	17	80%	1		1					1												1										
11	17	45+	60%																				1	?1					1				
12	19	20–24	90%	1						1					2								1										
16	33	25–35	30%																									(RB sherds)					
24	49	NA	2%																														
26	51B	45+	10%																				?1						?1				
27	52	45+	30%				1				?1												1										
28	57	35–45	40%						1										1				1										
29	58A	NA	40%					1															1										
31	103	45+	75%																				?1					Sherds					
32	110	45+	60%																				1										
33	112	18–25	60%	x	x				1									1					1										
34	117	18–25	80%	1					1														1						1				
36	125	18–23	80%	1	1						1								1				1										
44	137	35	70%																				1										
46	146	23–59	80%	1					1											1			1				1						
47	147	16–17	30%														1											Sherds?					
48	148	25–35	95%	x					1			1											1										
50	150	45+	90%	x	x																		1								1		
51	151	19–25	80%		x				1			1											1					(RB sherd)		1			
62	188	16	80%	1	1								1										1		1								
63	198	22–25	90%	1	1																		1						1				
65	300A	35	95%																														
66	322A	NA	95%	1	1						1							1					?1	1							?1		
70	362	40–44	70%								1																		?1				
71	367	25–35	40%																														
73	372	18–25	50%																														
76	405	15	90%	1	1																1												
77	423	18–23	15%				1				?1																		1		1			
80	430A	18–25	10%																									Sherds?			?1		
81	431	45–49	20%																										1				1
85	447A	25–35	35%																														
87	451A	50–59	60%																										?1				
88	453A	18–25	98%	1	1				1									1					1			1							
88	453B	35–45	3%																														
92	466A	NA	5%																														
97	551	20–30	98%	x	x																		1									1	
98	553	45+	80%	1	1											1							1										
99	576	45+	95%																				1										
100	578	19–25	95%																				1										
106	626B	18	98%															1					1							1			
107	632	5	35%		1												1																
111	688	45+	60%	1																		1											
112	719A	25–35	30%																				?1										
113	725B	NA	30%																														
115	727		99%		1														1														

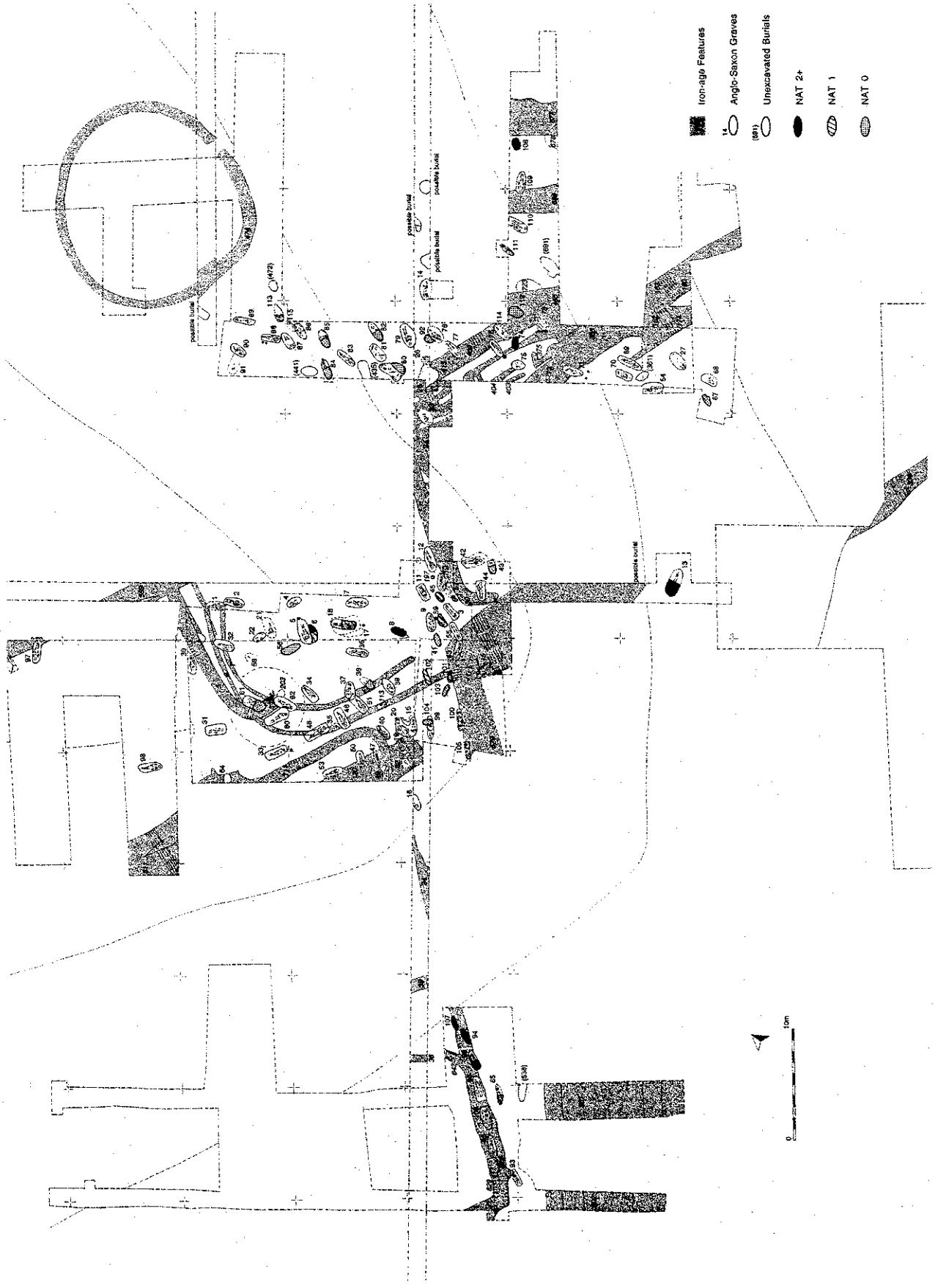


Figure 8.1 Distribution of children's graves

Table 8.5 Male graves according to weaponry, showing the estimated age, stature, and dating

	Grave		Age	Stature (in metres)	Phase
1.	With shield fittings and spearhead				
	7	Sk11	25–35	1.72	
	12	Sk19*	20–24	1.83	Phase II
	28	Sk57	35–45	1.70	
	33	Sk112	18–25	1.74	
	36	Sk125	18–23	1.72	
	46	Sk146	23–59	1.84	Phase I?
	48	Sk148	25–35	1.76	Phase II
	51	Sk151	19–25	1.74	Phase II
	66	Sk322A	NA	1.77	
	88	Sk453**	18–25	1.71	
* Two spears ** The burial of the two-item set with Sk453A is highly probable but not certain					
2.	With shield fittings alone				
	2	Sk3C	18	1.79	Phase II
	9	Sk13B	17	NA	
	27	Sk52*	45 +	1.74	Phase II
	29	Sk58A	NA	1.75	Phase I
	34	Sk117	18–25	1.66	
	70	Sk362	40–44	1.71	
	77	Sk423*	18–25	NA	Phase II
* No shield boss					
3.	With spearhead alone				
	9	Sk13A	45 +	1.61	
	47	Sk147A 16–17	NA		Phase I?
	62	Sk188	16	NA	Phase I?
	76	Sk405	15	NA	
	98	Sk553	45 +	NA	Phase I?
	106	Sk626B	17	1.77	
	107	Sk632	5	–	Phase I?
	111	Sk688	45 +	1.65	
	115	Sk727	20–24	1.79	
4.	With no identified weaponry				
a)	With good skeletal evidence				
	2	Sk3B	23–59	1.69	Phase II
	11	Sk17	45 +	1.60	
	31	Sk103	45 +	1.66	
	32	Sk110	45 +	1.77	
	44	Sk137	35	1.72	
	50	Sk150	45 +	1.73	
	63	Sk198	22–25	1.74	
	65	Sk300A	35	1.77	
	73	Sk372	18–25	1.74	
	81	Sk431	45–49	1.68	
	87	Sk451A	50–59	1.81	
	97	Sk551	20–30	1.74	Phase II
	99	Sk576	45 +	1.75	
	100	Sk578	19–25	1.75	
	112	Sk719A	25–35	1.77	
b)	With poorer skeletal evidence				
	4	Sk8	NA	–	
	16	Sk33	23–35	–	
	24	Sk49	NA	–	
	26	Sk51B	45 +	–	
	71	Sk367A	25–35	–	
	80	Sk430	18–25	–	
	85	Sk447A	25–35	–	
	92	Sk466A	NA	–	
	113	Sk725B	NA	–	

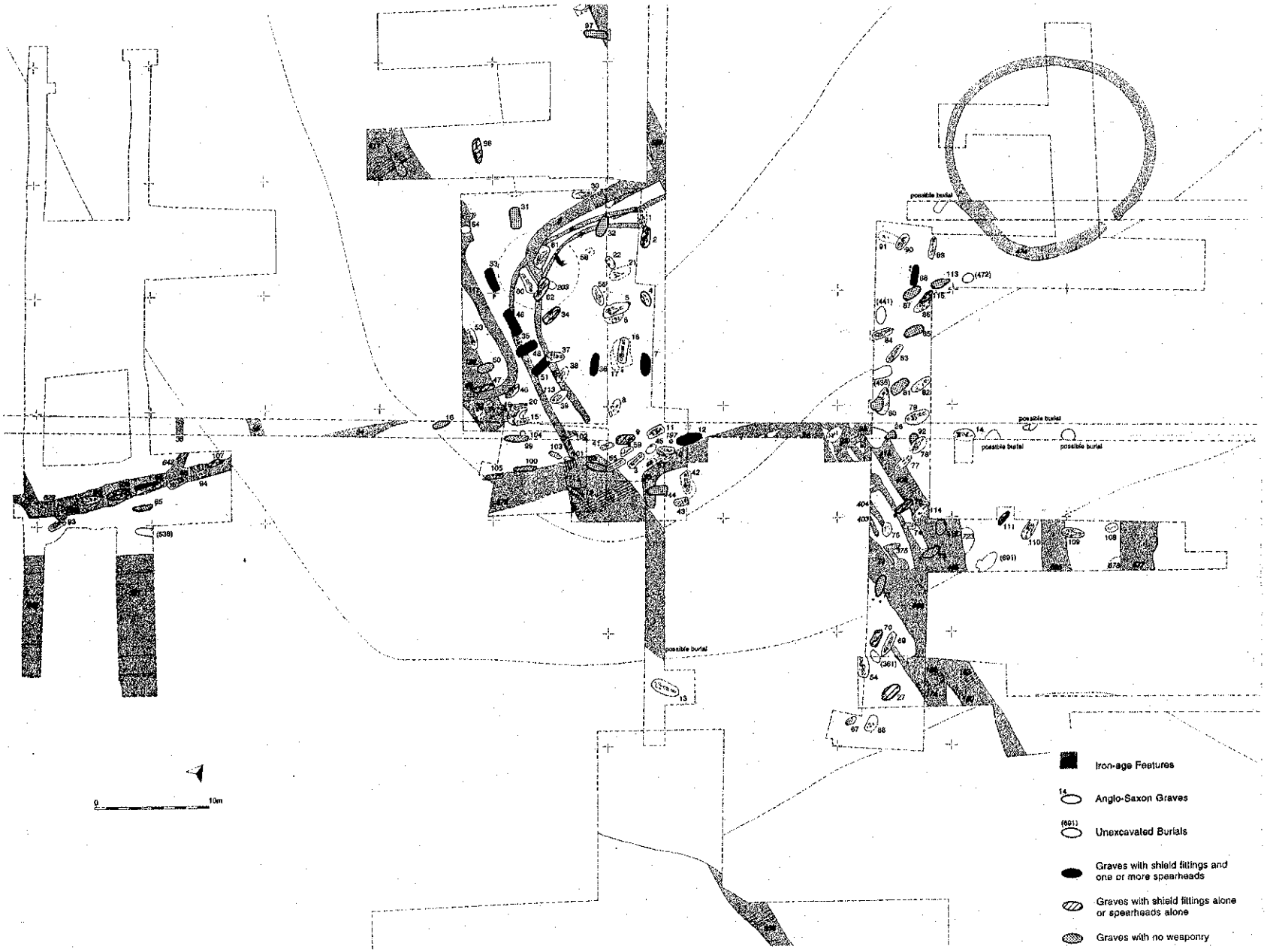


Figure 8.2 Distribution of men's graves showing different collections of weaponry as grave goods

Table 8.6 Graves that cannot be sexed either by bone or artefactual evidence

Grave No.	Skeleton	Age	Preservation	Buckle Fe oval	Knife	Coin pendant	Glass beads	Nail	Pottery	Comb	Copper-alloy clip/mount
2	3A1	Adult	5%	?1	?1						
2	3A2	Adult	2%	?1	?1						
17	41	45 + ?	2%		1			5			
18	42A	18–25	2%		?1	1					
21	46	Adult	50%		1						
22	47	Adult	10%						Sherds		
25	50	18–33	5%								
26	51A	15	60%		?1			?1			
30	100	17	65%		1						
40	130	15–16	80%								
43	136A	Adol–Ad	1%								
52	155	Adult	3%								
58	177	Adult	5%								
71	367B	18–25	2%								
72	369C	16	1%								
75	402	Adult	5%								1
86	450	45 +	20%								
87	451B	15	3%					1			
89	455	17–18	85%								
109	683A	Adult	3%				2			1	

statements, and it is encouraging that there is only one discrepancy between the results of the two methods in relation to the material from this cemetery (grave 23, Sk48). The male graves are characterised by a minimal amount of metal dress accessories and the dominant place of weaponry amongst the diagnostic grave goods, while female graves are characterised above all by a profusion of dress fittings. The majority of the female graves can be gender-classified on the basis of the grave goods, while just over half of the male graves can be identified as such on the basis of the presence of weaponry – the remainder are identified on skeletal evidence alone.

The distinction between graves with weaponry and those without is the primary qualitative division of the male graves as contexts within which artefacts were deposited. The weapon graves themselves can also be subdivided into three basic sets: graves with evidence of both shield fittings and one or more spearheads, graves with shield fittings alone, and graves with spearheads alone.

Following the model of Heinrich Härke's pioneering work on Anglo-Saxon weapon graves (1992b), and making use of the good skeletal evidence available here, these various sets can be examined for any correlation between the age and estimated stature of the deceased and their grave goods (Table 8.5 and above, 4.5). There is a clear association between the shield plus spear group and fully grown men though not those over 45: five examples out of a probable ten are aged 18–25, two 25–35, one 23–59 and one 35–45, while one individual is not aged. The single items of weaponry are predominantly associated with males younger and older than this: thus six individuals aged 15–18 were apparently buried with either shield fittings or a spearhead alone, as were five aged 40 or more. The χ^2 test reveals a probability of no more than 3% that the age-related distribution of weapon sets is the product of chance alone: the greatest 'anomaly' is the uniform provision of single items of weaponry in the graves of young men aged eighteen or under, followed by the prevalence of the two-weapon set in the graves of 18 to 25-year-olds and its absence from that of the over-45s, and the absence of single items of weaponry with those of the 25–35 age band. An osteological estimate of age is available in the case of twenty of the non-weapon graves. At least half of these men (ten) are aged 35+, and eight of those 45+. One further individual in this set (Sk3B) has an estimated age range as wide as 23–59.

There are also differences in the estimated physical stature associated with the groups, with the

shield plus spear group returning a mean height of 1.753m and the non-weapon graves 1.728m. A simple *t*-test indicates that the probability of the shield plus spear group being a random sample of the whole male population in respect of stature is about 6.5%. The consistently implied higher stature of this group can in fact most readily be explained as a function of the age difference. The average estimated height of the males aged 45+ is 1.70m, while the average in the non-weapon graves is not only close to – though, indeed, fractionally below – the mean adult male height from the site overall (1.733m) but is also greater than that of the individuals with single items of weaponry (1.719m). These variations cannot be assessed against the phasing of the site as there is insufficient detectable chronological differentiation in the provision of grave goods in male burials (see above, 7.3.2).

Within the cemetery, the shield plus spear graves have a very distinctive distribution concentrated on the top of the knoll above the area with the apparent concentration of immature and feminine graves (Fig 8.2).

The graves with a single item of weaponry are more widely dispersed, although there are several in quite close proximity to the shield plus spear graves, both in the central area and in Trench XII. The male graves without weaponry appear even more widely scattered. There are a few close to the weapon graves on the top of the knoll, a number lower down in the area of Trench XVI where the apparent cluster of children's and adolescents' graves was noted (above), and perhaps something of a concentration around Trench XIV to the north-east of the site. Excavations and artefact collecting in the 19th century may, however, have distorted this picture. Smith (1868) reports nine burials with spears and two with shield bosses, which may have come from disturbed graves identified during the recent excavations from Trench XIV and its immediate vicinity.

8.2.3 Adult female burials

As noted above, a majority of adult female graves from the recently excavated site contain gender-specific and diagnostic artefacts. Amongst these the substantial difference in adult female accoutrements between Phases I and II has been discussed in detail (above, 7.1 and 7.3.1), with a radically different form of costume characterising the later phase and the provision of textile-working tools and combs also apparently strongly associable with that phase too. This phasing has to be observed throughout any further attempts to analyse socially informative patterns amongst the adult female graves.

The richly but diversely furnished female graves of early Anglo-Saxon cemeteries have long been regarded as a promising source for the investigation of social differentiation in terms of the different range, quantity, and quality of grave goods from burial to burial (eg Shephard 1979; Arnold 1980; 1988, 142–62; Pader 1982; cf Sherlock and Welch 1992, 73–102). A discussion of possible aspects of social ranking in the evidence available from Edix Hill appears below (8.5), but it is necessary, not least for comparison with the analysis of the men's graves (above), to introduce at this point the method used to measure and compare the level of furnishing of the female graves.

Table 8.7 Artefact categories used to produce RIAC scores for graves with women's burials/grave goods attributed to women

Central brooch
Shoulder brooch
Pin
Beads
Copper-alloy slip-knot ring, bead or pendant
Silver necklace ring
Gold pendant
Chatelaine
Buckle
Belt mount (rivet or strap-end)
Belt ring
Clasps
Finger ring
Bracelet
Knife
Latch lifter or girdle hanger
Tweezers
Purse ring
Wooden vessel rim mount
Bucket
Pot
Glass
Weaving batten
Spindle whorl
Bone awl
Funerary bed
Nail
Coin

Previous formulae for calculating the 'wealth' of a grave group have been based on a scoring system, for instance of the number of artefact-types (NAT) found there (Hedeager 1992, 99–121), or a weighted variant of that designed to reflect more closely the relative complexity, cost, and perhaps symbolic value, of different artefacts (eg Shephard 1979; Arnold 1980). Although the latter system is inevitably more discriminating, it does not, for the most part, produce rankings of sets of graves that differ greatly from a simple NAT count (Hines 1997). An NAT count, however, seems to be less suitable a method with a recently excavated set of graves like this one in face of the problem of how to assess the large quantities of, for instance, iron or copper-alloy fragments recorded from many of the contexts. It is moreover inappropriate to give a different 'wealth' score to a grave with two unmatched shoulder brooches – eg grave 13, with a small long brooch on one shoulder and a disc brooch on the other, which are indisputably two different artefact-types – from a grave with a matched pair of shoulder brooches, eg grave 95 with

Table 8.8 RIAC scores of individual female graves at Edix Hill

Grave No	Skeleton No		Score
PHASE I			
3	Sk4	:	8
5	Sk9	:	3
10	Sk16B	:	4
13	Sk20B	:	11
14	Sk29	:	4
15	Sk31	:	1
19	Sk44A	:	5
19	Sk44B	:	6
20	Sk45	:	7
29	Sk58B	:	4
38	Sk127A	:	4
39	Sk128	:	4
53	Sk156	:	5
61	Sk184A	:	2
66	Sk322B	:	4–8 (mixed)
68	Sk354	:	6
69	Sk359	:	7
72	Sk369A	:	1 (mixed)
78	Sk424	:	5
79	Sk428	:	7
82	Sk432A	:	3 (mixed)
83	Sk436	:	6
84	Sk440A	:	3
93	Sk526	:	6
95	Sk530	:	5
96	Sk547A	:	5
106	Sk626A	:	5
110	Sk687A	:	2
110	Sk687B	:	2
114	Sk726	:	1
PHASE II			
18	Sk42B	:	11
37	Sk126	:	2
54	Sk161	:	5
60	Sk183	:	7
91	Sk459	:	7
109	Sk683B	:	8
Unattributed			
1	Sk2	:	2
10	Sk16A	:	0
23	Sk48	:	3
35	Sk119	:	0
42	Sk135	:	2
47	Sk147B	:	2
55	Sk171	:	0
90	Sk458	:	1
105	Sk592	:	2
113	Sk725A	:	0

its gilt zoomorphic applied saucer brooches. The measure adopted here, therefore, is that of the range of identifiable artefact categories (RIAC); the artefact categories in question are detailed in Table 8.7, and the scores of individual graves, and the distribution of scores overall between the different phases and across the different age groups are shown in Tables 8.8–9. It should be noted that this system tends to emphasise the complexity of necklace and belt assemblages as a measure of wealth. The possible symbolic function of some of the items found in these assemblages was in fact noted in Chapter 5.

In Phase I, this analysis reveals a concentration of grave groups around the median RIAC scores of five to six. There are five higher scoring graves, grave 20, grave 69, grave 79, grave 3, and grave 13 in ascending order, but these do not form a distinct cluster, nor do the lower scoring ones: the overall range is close to that of a normal curve. The smaller number of datable furnished Phase II graves generally have a wider range of grave goods but also show a trend towards the median score. Of these graves, grave 18 scores much more highly than the others, but the other bed-burial, grave 60, does not. The low score of grave 37 must be considered in light of the probability that several Phase II adult female graves are so poorly furnished as to be undatable (cf Tables 8.8–9; above, 7.3.1–2).

When compared with the age bands, the Phase I graves show no particularly clear clusters that indicate a correlation between RIAC and age. The under-25s score quite strongly in the median RIAC range (4–7). There is, however, an interpretative problem in relation to the age bands used in that three graves included in Table 8.9 had their occupants aged at either 25 or 35 respectively – in other words right on the boundary between age bands. In Table 8.9 these individuals have been attributed to the younger age bands – ie the 25-year-olds to the 12–25 age band etc. If, however, the opposite is done, the trend towards the median RIAC scores amongst the nine burials remaining in the under-25 age band is even more marked, and the frequency of burials in the RIAC range 6–11 with those aged 25 or over may also appear quite distinct (Fig 8.3). The trend to the median, however, is very marked with the small number of burials (five–six) of the 35+ age group, all of which score in the range four–six. If, moreover, we compare the percentage of graves in the under-25 and 25-and-over age bands with various RIAC scores (Fig 8.4) the result looks considerably more even, though differences remain. There is, altogether, a hint (and no more than that) that women of the 25–35 age band may have been able to attain somewhat higher social standing than women of other age bands, and that concomitantly social differentiation amongst the women of this age band may have been greater than amongst the larger number of younger and the few older women. However, there is no discernible pattern amongst the few furnished Phase II graves. The sample is too small for us to argue that the fact that grave 37 (the

Table 8.9 The distribution of RIAC scores of female graves in relation to phasing and the adult age bands

Age range	12–25			25–35			35–45			45 +		
Dating RIAC	I	U	II	I	U	II	I	U	II	I	U	II
0		1			2							
1	2										1	
2	1			2				1			2	1
3				2	1							
4	2						2					
5	3			2		1				1		
6	1			1			1			1		
7	2		1	1		1			1			
8				1								
9												
10												
11	1		1									

I = Phase I U = Undated II = Phase II

lowest scoring of these graves) is the grave of a woman over 45 is significant.

For comparison with the male graves, the estimated stature of the deceased women has also been investigated. There is probably no significant correlation with RIAC in either phase. However, while the average estimated height of women in Phase I graves is 1.635m, the mean estimated height of the bodies in the median range of RIAC scores in this phase is nearly 11mm higher. Only three graves datable to Phase II yield stature measurements, and these cover a very wide range. One may note, however, that the occupant of the bed-burial in grave 18 was, at an estimated height of 1.70m, unusually tall.

Looking at the distribution of the adult female graves in various categories in light of the patterns already discerned with the children's and the adult male graves, it is immediately striking that the higher scoring Phase I graves are not found in the central area on the top of the knoll (Fig 8.5). Two of the four highest scoring graves are close by this, either virtually on the line of grid 130N (grave 19) or slightly south of it (grave 3) in the area where the immature and feminine graves seem to cluster (above 8.2.1). The Phase I women's graves that are within the central area (grave 5, grave 38, grave 39, and grave 61) are low-scoring in terms of RIAC. But there is a very clear group of the datable – and thus the better furnished – Phase II adult female graves in precisely this zone (above, 7.4; Fig 8.6). It is unfortunate that we cannot undertake a comprehensive phasing of the male graves, and so investigate whether this area could (for some reason) have been a predominantly male zone in Phase I, into which special female burials were allowed only in Phase II. It is also interesting to note that if we hypothesise that a high proportion of the poorly furnished and thus undatable adult female graves are likely to be of Phase II, these too show no stronger correlation with the central area than do the earlier burials (Fig 8.7).

8.3 Kinship

8.3.1 Introduction

Another form of subgrouping within the community that can be expected to be of at least equal importance with the categories of gender and age groups is that of kinship. Kinship ties should, of course, cut across divisions of sex and age: a natural family will normally be both diverse and balanced in these terms. It is perhaps too easy to think of family relationships primarily in terms of consanguinity: relationship by direct descent from a common parent or grandparent etc. Unless, however, marriage is strictly endogamous, 'created' kinship, bringing a new member into a family, such as a wife in a patrilineal, exogamous society, will be of equal importance with consanguinity, while the possibility of other forms of created kinship such as fosterage or adoptive fraternity must be borne in mind too (cf Charles-Edwards 1997). It is not easy to identify such connections in the archaeological record, but recent analyses have given this topic greater prominence in cemetery studies, and it has considerable implications in relation to other forms of social inference (L Jørgensen 1987; 1991; cf 8.4–5, below). Nothing like a comprehensive plot of family

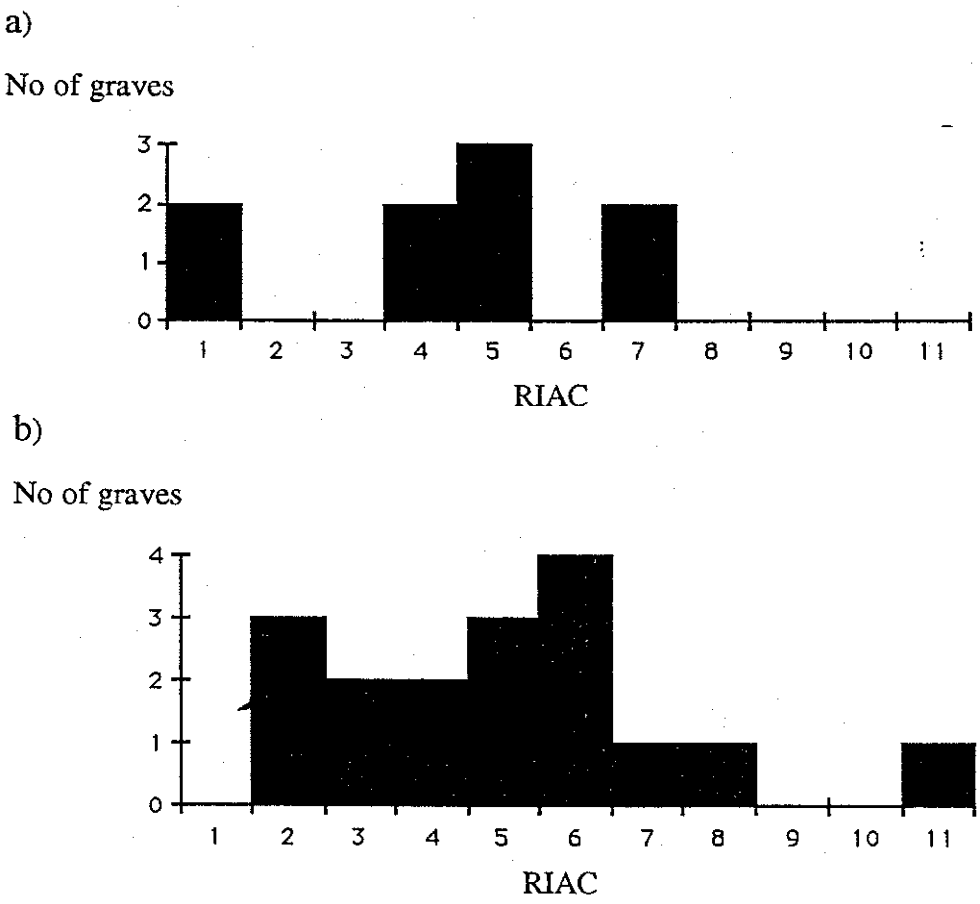


Figure 8.3 Distribution of RIAC scores between age bands amongst Phase I female graves in absolute terms (a = under 25 year olds; b = 25 and over age bands)

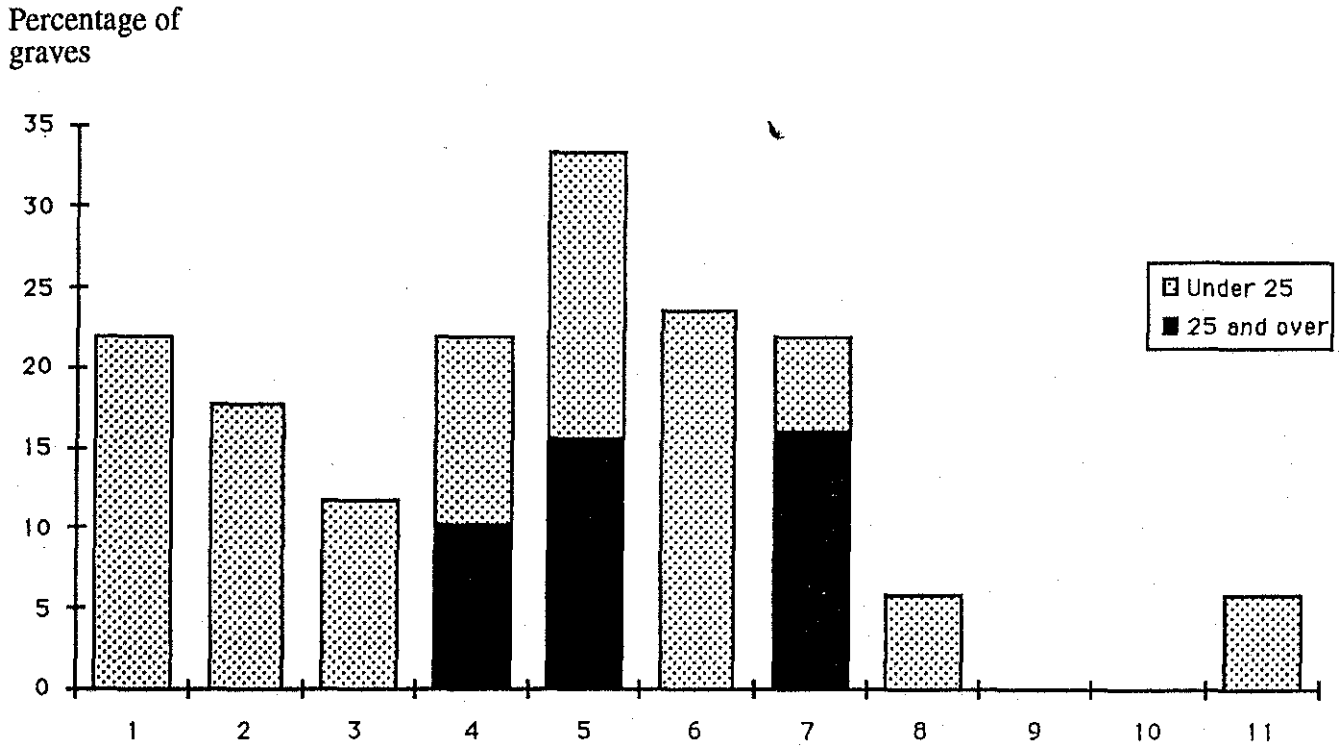


Figure 8.4 Distribution of RIAC scores between age bands amongst Phase I female graves in terms of the percentage of graves in each age band per RIAC score

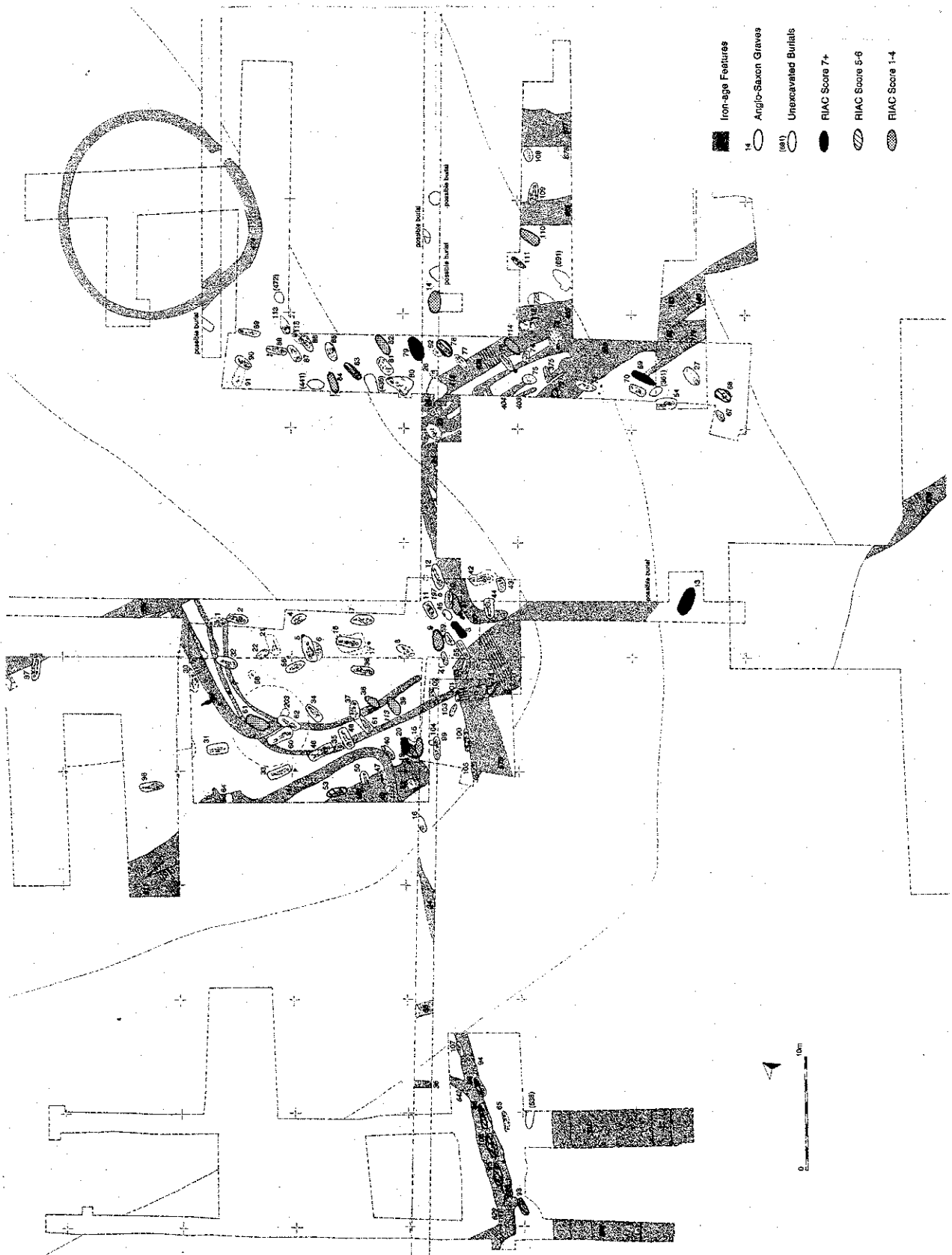


Figure 8.5 Distribution of adult female graves of Phase I showing averaged RIAC scores

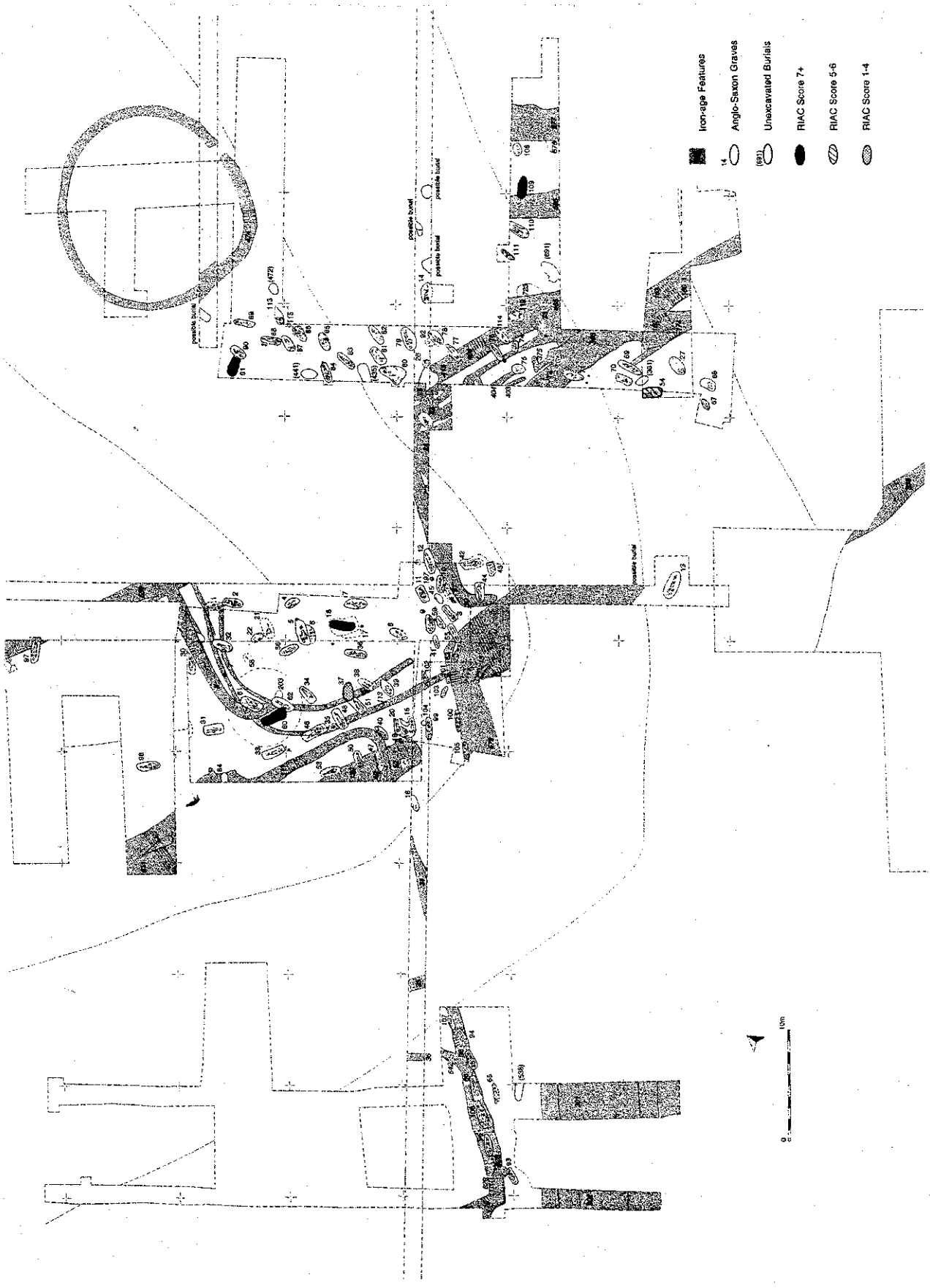


Figure 8.6 Distribution of adult female graves of Phase II showing averaged RIAC scores

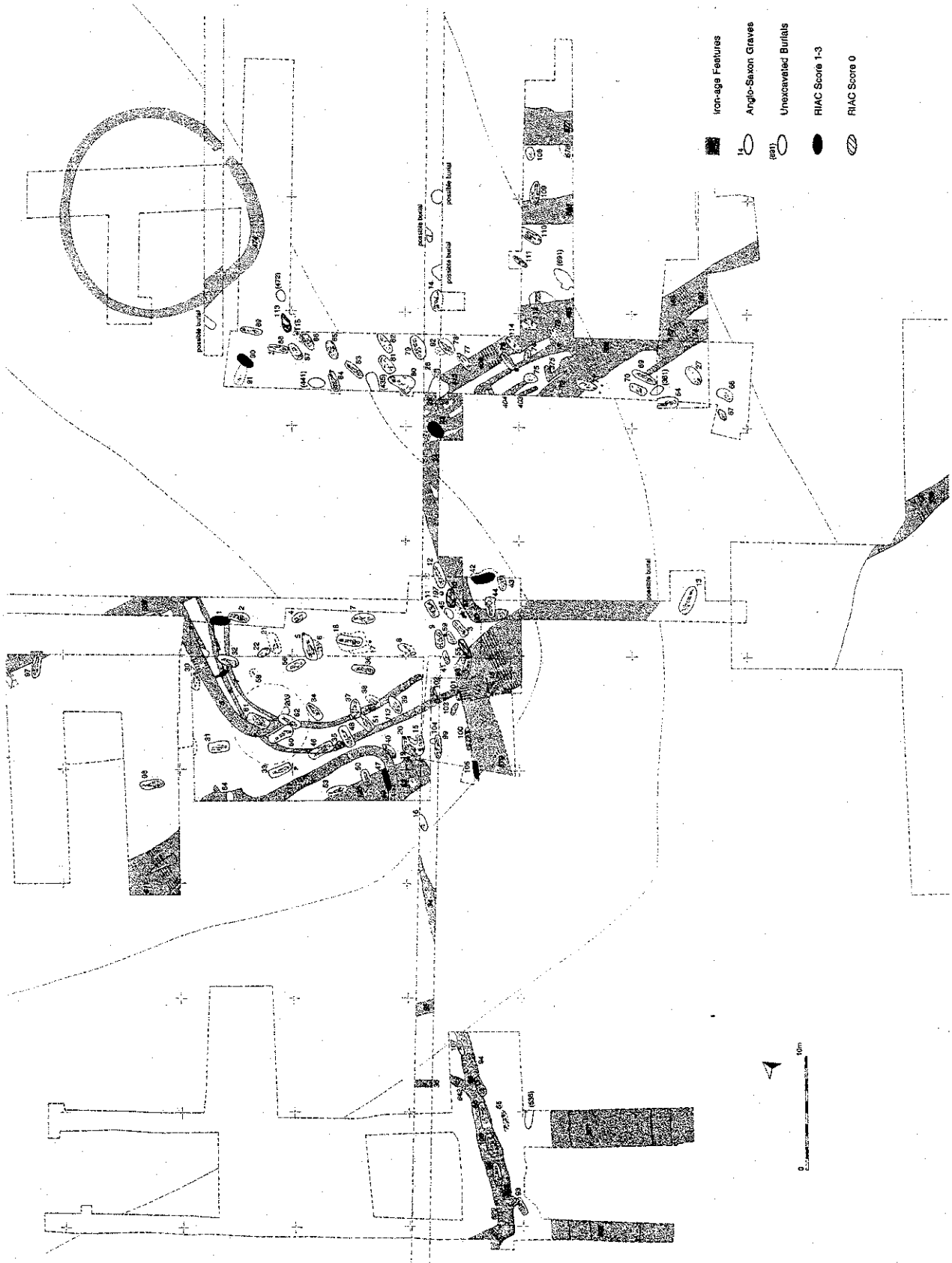


Figure 8.7 Distribution of chronologically unattributed adult female graves showing averaged RIAC scores

Key to Figure 8.8

B17ABCL	:	Form B17a or b clasps
ANGEQUA	:	Anglian equal-armed brooch
XFORMB	:	Type B cruciform brooch
SLBCPO	:	Cross-headed small long brooch
SKRINGS	:	Copper-alloy slip-knot ring
SLBXDER	:	Cross-head derivative small long brooch
AEPIN	:	Copper-alloy pin
OWKDISC	:	Openwork disc brooch
B13ACL	:	Form B 13a clasps
XFORMZ	:	Type Z cruciform brooch
PENANN	:	Penannular brooch
B7CL	:	Form B7 clasps
DISCB	:	Disc brooch
B13CCL	:	Form B13c clasps
SLBTRE	:	Trefoil head small long brooch
AGFRING	:	Silver finger ring
XFORMD	:	Type D cruciform brooch
AELARGRI	:	Large copper-alloy ring
ANN	:	Annular brooch
FEPIN	:	Iron pin
AEGH	:	Copper-alloy girdle hanger
SMALLSHB	:	Small square-headed brooch
B20CL	:	Form B20 clasps
B18CL	:	Form B18 clasps
B1214ACL	:	Form B12 or B14a clasps
SLBSQH	:	Square-headed small long brooch
SHB23	:	Phase 2 or Phase 3 great square-headed brooch
ACL	:	Class A clasps
XFORMC	:	Type C cruciform brooch
XFORMBB	:	Type Bb cruciform brooch
SLBSQDER	:	Square-head derivative small long brooch
ClBARCL	:	Form C1 clasps, Barrington type

relationships can be offered for Edix Hill, but several instances of apparent or possible kinship can be identified.

8.3.2 Genetic relationships

An assessment of the skeletal material was undertaken by Erika Hagelberg, then at the Oxford University Research Laboratory for Archaeology, to see if DNA analysis could identify consanguinity at Edix Hill. Unfortunately the answer was negative. However recent improvements in the PCR (polymerase chain reaction) technique may enable a useful study of the material to be undertaken in the future.

As already noted in Chapter 4, there are other recurrent heritable and non-metric skeletal features which suggest the possibility of genetic relationship between certain individuals (above, 4.5.7; Fig 8.8). There are two possible groups with metopic sutures, three males buried close together, grave 33, grave 46, and grave 48, and two males and a female, grave 12, grave 100, and grave 105. The former set of graves are found within a 9m stretch of ground just west and south of a possible barrow over grave 60. All three burials were similar in terms of the form of the grave and the layout of the body, and all three also belong to the shield plus spear group in terms of grave goods. If, however, the latter phenomenon is primarily age-determined (above, 8.2.2), it may be of little relevance here: none of these three men was of an abnormal age to be buried in this way. Positionally, grave 33 and grave 46 have a strikingly parallel alignment, and grave 48 is on the same line but lies at 90° to the other two graves. It has also been suggested that the extraordinarily contracted and partly disarticulated female burial in grave 35 was inserted into the small space between grave 46 and grave 48. This woman, however, has no associable epigenetic traits.

Close collocation and the same alignment is also shared by another pair of graves of metopic individuals, an adult male and female in grave 100 and grave 105 – the man relatively young (18–25) and the woman unusually old (52–59). These might be associated with Sk19, another metopic male, buried in grave 12 with a shield and two-spear set in Phase II at the age of 20–24, on the same alignment, some 12m away. Neither grave 100 nor grave 105 is definitely datable, although a Phase II date can be suggested for grave 105 on the basis of the pin and comb fragments it yielded. If this old woman was consanguineous with the two young men and treated as a member of the same family we can consider the possibilities of her being their mother, a sister, a cousin, or even a daughter who either did not marry out of this family or returned to it upon widowhood.

There are only three other examples of skeletons exhibiting metopism elsewhere in the cemetery (Sk458 (grave 90), Sk687A (grave 110), and Sk726 (grave 114)), all female and all in fact in the eastern area of the excavations. The alignments of these graves are similar, but so are those of the great majority of graves in this area, following the contours of the hill. This suggests, then, that the clustering of skeletons exhibiting this trait around the central knoll is more than just fortuitous.

Overlapping with the possible group of metopic males Sk112 (grave 33), Sk146 (grave 46), and Sk148 (grave 48) is a group of four males associated by Wormian bones: Sk103 (grave 31), Sk117 (grave 34), Sk148 (grave 48), and Sk188 (grave 62). Approximately 3m south of grave 48 and on the same alignment is the grave (grave 40) of an unsexed fifteen or sixteen-year-old (Sk130) with the same condition, and about the same distance further south but on a fractionally different alignment is a further female in grave 15 (Sk31); a twelve-year-old with Wormian bones and buried with a full set of beads. Grave 62, a male grave, is close to grave 61, a Phase I woman's grave with fragments of the skeleton of a ten-month-old infant, and on the same alignment. These graves are apparently earlier than grave 60, a Phase II woman's bed-burial which may have been sealed by a barrow, and which is also on the same alignment as the nearby graves 33 and 46. Both the stratigraphical sequence and the phase-difference between the women's burials opens up the possibility

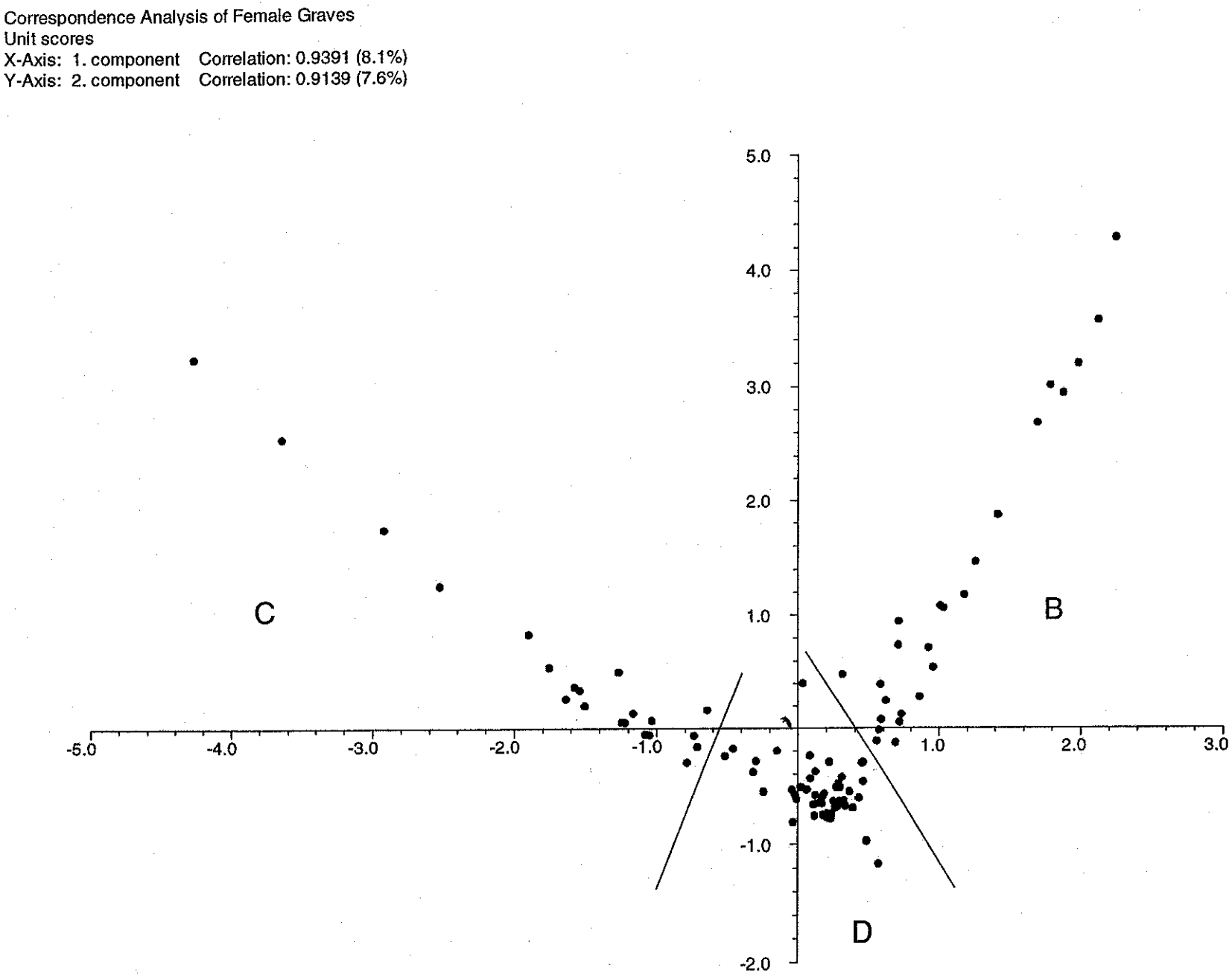


Figure 8.8 (i) Results of correspondence analysis showing costume groups B, C, and D

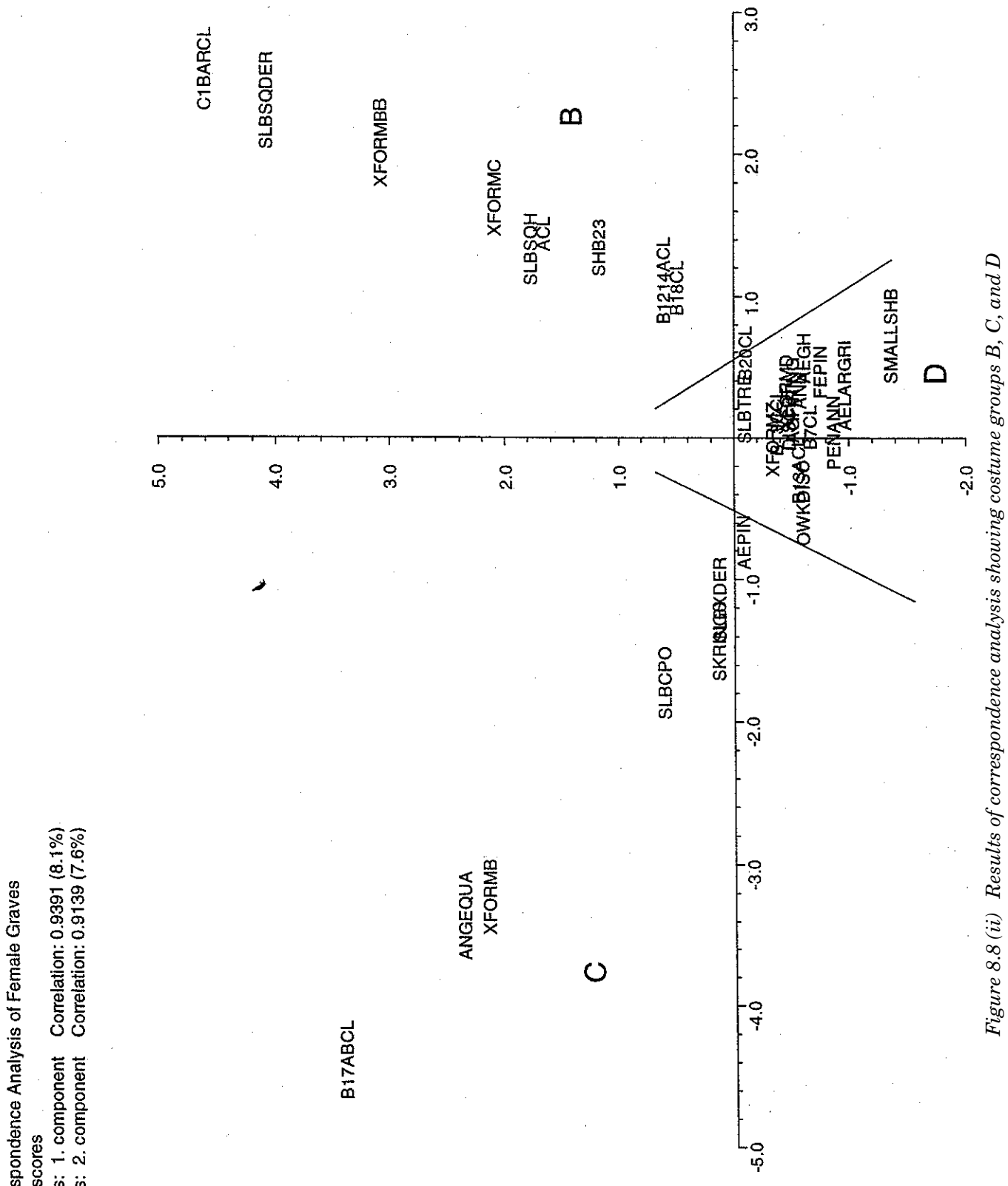


Figure 8.8 (ii) Results of correspondence analysis showing costume groups B, C, and D

that more than one generation of a particular family is represented in this putative group. If this is the case, we could also see here how age determined the weapon-furnishing of the male graves even within a single family. The older man (45+) in grave 31 was buried without weaponry. A sixteen-year-old in grave 62 was buried with a spear, and a (rather short – 1.66m) 18 to 25-year-old in grave 34 was buried with shield fittings. As noted above, three other men within this cluster aged between 18 and 35 were buried with the shield plus spear set.

Two further burials linked by Wormian bones are those of an adult female (aged 21–25: undated), Sk171, and a child of 6–7, Sk133. These two graves (grave 55 and grave 41) lie parallel, only 2–3m apart. Evidently these could be the graves of a mother and child. Thus both the clearest groups with metopic sutures and the individuals with Wormian bones seem to cluster in a north–south band on the crest of the knoll. As the same factors produce both metopism and Wormian bones, the close proximity of burials with one or the other of these conditions reinforces the hypothesis of genetic relationship between the individuals buried in this central area.

It is also striking that the possible genetic links revealed by the evidence considered above are more strongly correlated with juxtaposition in the cemetery in respect of male graves than female graves. In fact another example of Wormian bones is the undated grave (grave 90) of a woman (Sk458) aged over 60 at death, which is also one of the three other examples of metopism. If we postulate female exogamy as the norm, then both the clustering of the distinctive epigenetic traits and the discrepancies in distribution in terms of sex can be taken as corroborating the inference of family relationship.

We could also refer at this point to the evidence of spondylolysis, a condition of complex genetic and traumatic origins (above, 4.5.7.5), but yet another feature shared between two males, Sk146 and Sk148 (graves 46 and 48), who are both also linked by metopism and Wormian bones and are a key pair in the postulated central-area group. This condition is also represented in two women's graves, grave 79 and grave 83. These two graves are quite close to one another, but far removed from the men's graves and the complex of graves with which they are firmly linked in the central area.

A group of four adult women (Sk9, Sk29, Sk44A, and Sk45), all in Phase I graves (graves 5, 14, 19, and 20), and two children (Sk584 (grave 101) and Sk587 (grave 103)), share the relatively strongly heritable anomaly of having an additional vertebra. Of these grave 20 (Sk45) actually cuts grave 19 (Sk44A), but although it is on the same alignment as grave 5 the group of adult graves is otherwise quite dispersed. The two children's graves, however, lay close to grave 19 and grave 20. They also lay end to end, and are suggested to be contemporary (above, 3.2; cf below, 8.3.4). It is difficult to believe that they at least are not the burials of cognates.

8.3.3 Alignment and juxtaposition of graves

A number of possible groups of graves suggested by horizontal and vertical stratigraphy were identified in the stratigraphical report (above, Chapter 3). In some cases these suggested groupings include the possibly genetically connected groups reviewed just above: for instance the graves in Trench X (in the central area on the top of the knoll) including graves 33, 34, 35, 46, 48, 60, 61, and 62 etc. The burials in this area that could be associated with grave 48 by their S–N alignment include both Phase I and Phase II graves, and so strong are the dominant trends of alignment here that it is only appropriate to attribute significance to a common alignment when there is additional evidence for relationship such as the sort of shared epigenetic traits just discussed. However, other aspects of evidence may also support the perception of special relationships amongst these burials, such as the orientation and position of the body, and, in certain cases, the similarity in the estimated age of the deceased and date of the artefacts. Pairs possibly identifiable as spouses in this way include graves 46 and 53, and graves 33 and 60. Neither of the women concerned here show any signs of genetic relationship to the postulated family group within which they were buried.

Slightly to the east but still close to the brow of the hill is a distinctly aligned set of graves, 1, 2, 17, 18, and graves 7 and 36. This set includes as many as six Phase II burials. The general layout of these burials is similar: there appears, for instance, to be a definite parallelism between the two semi-flexed males (grave 7 and grave 36) on either side of the female bed-burial in grave 18. It may have been the case that burial in this zone was monopolised by a single, presumably high-ranking, family at this date, a proposition that gains some support from their juxtaposition to the more distinctively genetically linked group immediately to the west. Of course we have no conclusive evidence for this.

The dominant alignment of burials in Trench XIV as a whole is primarily of no more than topographical significance. The burials generally follow the contour lines here. Quite distinct in many respects, however, is the group of burials in Trench XII which follow the line of an Iron Age ditch at the south-western extremity of the excavated area. Amongst the peculiar features of this group are an unusually high proportion of double or intercutting burials (twelve bodies in eight graves), the strikingly even furnishing of the female graves in terms of RIAC (see Table 8.8), and the relatively high level of furnishing of the children's graves. Similarities can also be observed in the grave goods provided: for instance two of the three female graves have Form B 13c wrist-clasps, and two have particularly heavy sets of amber beads (but see section 8.4, below, for a more widely based analysis of the furnishing of female graves). It again seems reasonable to suggest that this group is a family unit.

Table 8.10 Multiple Burials

Grave	Skeleton	Sex(Age)	Phase
Contemporary			
2	Sk3A.1/3A.2/3B/3C	?/?/M(23–59)/M(18)	Phase II
9	Sk13A/13B	M(45 +)/M(17)	
10	Sk16A/16B	F(30–34)/F(Adult)	Phase I
13	Sk20A/20B	I/F(25)	Phase I
19	Sk44A/44B	F(18/F(35)	Phase I
29	Sk58A/58B	M(–)/F(–)	Phase I
65	Sk300A/300B	M(35)/C(2)	
71	Sk367A/367B	M(25–35)/U(Adult)	
72	Sk369A/369C	F(–)/U(–)	
84	Sk440A/440B	F(25–35)/I(perinatal)	Phase I
85	Sk447A/447B	M(25–35)/C(6–7)	
96	Sk547A/547B	F(25–35)/C(10–11)	Phase I
106	Sk626A/626B	F(18–20)/M(18)	Phase I
110	Sk687A/687B	F(25)/F(25–29)	Phase I
Non-contemporary			
6	Sk10A/10B	C(6)/C(4)	
17	Sk41/	U(Adult)/	
18	42A.1/42A.2/42B	C(3)/U(18–25)/F(17–25)	Phase II
66	Sk322A/B	M(Adult)/F(25)	
109	Sk683A/B	U(Adult)/F(35–45)	Phase II
Stratigraphically connected graves			
15/20	Sk31/45 (see Sk44 above)	F(12)/F(19)	Phase I
101/103	Sk584/587	C(3)/C(8)	

I = infant, C = child, F = adult female, M = adult male, U = unidentified
Estimated age of individuals given in brackets

8.3.4 Graves with multiple burials

Where two or more bodies have been deliberately buried in a single grave it is reasonable to assume some definite relationship between those individuals in the living social world. Careful stratigraphical analysis has identified ten convincing examples of contemporary double burial of this kind amongst the recently excavated graves at Edix Hill and a further four possible but less certain examples (above, Chapter 3; Table 8.10). There are also four cases where it appears that a particular burial plot was deliberately selected for a second burial, and stratigraphical and chronological separation between the burial acts is visible: grave 6; graves 17 and 18; grave 66 and grave 109.

The double burials are characterised by the most profuse variability. The reliable examples show the majority of possible combinations in respect of age and sex. There are two examples of an adult female with an infant, presumably mother and child, and one of an adult female (aged 25–35) with a ten or eleven-year-old child; again the same relationship would be possible. There are two pairings of adult males with adult females, which one can naturally imagine to have been spouses. The skeletons of the pair in grave 29 however, cannot be aged, while the pair in grave 106 have very similar estimated ages: eighteen to twenty in the case of the woman and eighteen in the case of the man. There are two paired adult females, two paired adult males, and one adult male with a two-year-old child. There is no clear example of the apparently contemporary burial of two children in the same grave, although the pairing of children's graves is found in the case of the two adjacent graves (grave 101 and grave 103) which also share the feature of an anomalous vertebral count, and with one pair of superimposed burials (grave 6). There is no other overlap between the definite examples of double burial and genetic associations. Of the remaining apparently deliberately superimposed burials, one (grave 66) involves the graves of

an adult male and an adult female; the others involve adult female, unsexed adult and children's graves.

The age relationships between the pairs in double burials are also quite varied. The most probable example of a double burial related to a death connected to childbirth is grave 84, a woman of 25–35 with a newborn baby. The adult female pairs are aged 18/35 and 25/25–29 respectively while the paired adult males are aged 18/23–59 and 17/45+, suggesting a tendency towards the pairing of an older adult with a younger one.

8.4 Costume groups

As noted briefly in the discussion of the chronology of this cemetery (above, 7.3.1) an attempt to seriate the female graves of Edix Hill and neighbouring cemeteries using correspondence analysis revealed a pattern of groups within the Migration Period burials that could not be regarded as chronological. It proved relatively easy in these analyses to produce an impressive parabola (Fig 8.9), the distribution of plots that may represent a smooth chronological series. Sequences of change in artefact assemblages can, however, follow other scales besides the chronological – they may, for instance, reflect a scale of social standing or an age-scale – and additional evidence is needed to confirm the chronological character of any sequence so identified. In the case of the South Cambridgeshire grave groups this evidence contradicted a straightforward chronological interpretation in a striking way. The sequence places, for instance, the typologically earlier forms of cruciform brooch (Types B and C) at either end while the later forms, Types D and Z, appear in the middle. Thus, instead of a simple 'early –> late' series, we seem to have produced an 'early –> late <– early' configuration.

This implies that the female grave assemblages in this set were initially characterised by (at least) two separate groups of artefact-types which gradually grew together into a more homogeneous group during the Migration Period. This hypothesis was tested by analysing a larger set of data including a group of recently excavated and published contemporary cemeteries from East Anglia – Bergh Apton, Morning Thorpe, and Spong Hill (inhumations), Norfolk, and Westgarth Gardens, Suffolk (Green and Rogerson 1978; Green *et al* 1987; Hills *et al* 1984; West 1988). The results of this investigation support the hypothesis that a series of distinct 'costume groups' can be identified. These are formed of recurrent combinations of artefact-types, in particular specific brooch-types and forms of wrist-clasp. There are mergers and hybrids between these costume groups, and indeed correspondence analysis was primarily employed in the analysis of this data to look for continuity (ie overlap) between grave assemblages, but the results nevertheless imply that the costume groups existed as distinct and real sets of norms. More analysis is needed to clarify details of the distinctiveness of these costume groups, their chronological relationship to one another, and their geographical ranges. The provisional results are presented and discussed here as the basis of an important hypothesis concerning the material culture of the early to middle 6th century in this area, not as a set of proven conclusions.

The groups that emerge most clearly from the correspondence analysis have been labelled costume groups B, C, and D (conveniently corresponding to the types of cruciform brooch that are characteristic of these groups). These are the two wings and the middle of the parabola in Figure 8.8 referred to above. In group B we find recurrent combinations of cruciform brooches of Type B with cross-headed and cross-head derivative forms of small long brooch. Also associated with this costume group in the analyses undertaken so far are wrist-clasps of Form B 17a and B 17b, Anglian equal-armed brooches, and copper-alloy pins: none of them common artefact types either in the set of seriated graves or generally but still contributing to the difference between this group and the others. Costume group B is best represented at Edix Hill by grave 66 with its pair of cross-headed small long brooches and copper-alloy pin. Comparable grave groups are Barrington B graves 80, 85, and 97, Westgarth Gardens grave 55, Morning Thorpe grave 346, and Bergh Apton grave 5 (see Table 8.11).

Two types of cruciform brooch characterise costume group C: Mortimer's Type C and the type with a simple cruciform headplate and spatulate foot which we have included as cruciform brooch Type Bb in the analyses here (cf above, 5.2.1.1). The small long brooches associated with this group are square-headed or square-head derivatives and a wider range of wrist-clasps is also linked to these: the distinctive though not common Forms B 12, B 14a, B 13b, B 18, and C 1 – Barrington type (Hines 1993). There seems to be a tendency for great square-headed brooches to be associated with this costume group as well as costume group A (below). Looked at in the wider context, costume group C is not particularly well represented at Edix Hill though elements of it are found in mixed groups in grave 13, grave 39, and grave 93. Clearer representatives of this group are Barrington B grave 9, Great Chesterford graves 81 and 153, and Morning Thorpe grave 370 (Table 8.11).

Costume group D, from the middle of the parabola, is the largest group in terms of both grave assemblages and the range of characteristic artefact-types. It consists of grave assemblages with cruciform brooches of Types D and Z and annular brooches, while the simple and numerous wrist-clasps of Form B 7 are particularly common here. Less frequent brooch-types associated with this group are penannular and disc brooches. The small number of trefoil small long brooches also find themselves associated with this group. Iron pins are particularly strongly linked to this costume group at Morning Thorpe and Bergh Apton, Norfolk, but also at Great Chesterford.

This group is best represented at Edix Hill by grave 10 with its two annular brooches and Form B 7

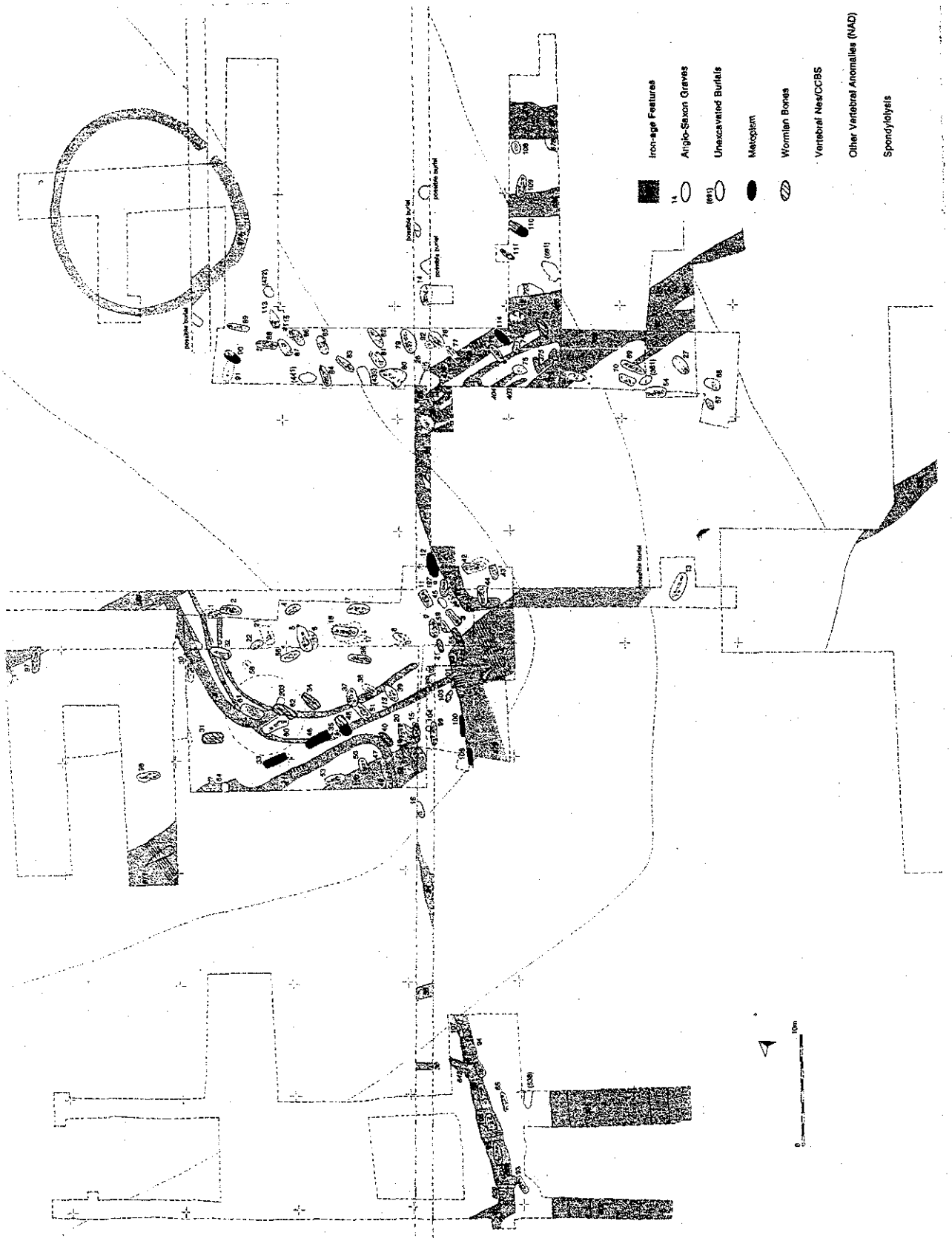


Figure 8.9 Distribution of genetic traits

Table 8.11 Examples of costume groups A, B, C, and D from cemeteries other than Barrington A/Edix Hill

Costume group A	
Barrington B 83	pair of gilt copper-alloy Kempston-type applied saucer brooches
Barrington B 108	pair of zoomorphic applied saucer brooches; 20 beads
Great Chesterford 2B	gilt copper-alloy great square-headed brooch; pair of gilt copper-alloy cast saucer brooches; 81 amber, 27 glass and 2 crystal beads; copper-alloy ring, copper-alloy tube; 2 iron nails
Great Chesterford 126	gilt copper-alloy great square-headed brooch; pair of gilt copper-alloy cast saucer brooches; 1 amber and 4 glass beads; iron firesteel
Harlton (possible group)	gilt copper-alloy great square-headed brooch; pair of gilt copper-alloy cast saucer brooches; pair of gilt copper-alloy wrist-clasps and gusset plates
Costume group B	
Barrington B 80	2 copper-alloy small long brooches: 1 cross-head, 1 cross-head derivative; copper-alloy backplate of small applied saucer brooch; copper-alloy slip-knot ring with attached ear scoop and 2 pins
Barrington B 85	pair of copper-alloy cross-head derivative small long brooches; 10 beads, including 2 amber and 7 blue glass; 2 copper-alloy slip-knot rings, 1 with attached ear scoop and 2 pins
Barrington B 97	2 copper-alloy small long brooches: 1 cross-head, 1 cross-head derivative; 1 bead; copper-alloy square-sectioned rod 120mm long, perforated for suspension
Westgarth Gardens 55	copper-alloy cruciform brooch, Mortimer Type B; copper-alloy cross-head small long brooch; gilt copper-alloy Saxon equal-armed brooch; iron knife
Bergh Apton 5	copper-alloy cruciform brooch, Mortimer Type B; copper-alloy cross-head small long brooch; 1 amber bead; copper-alloy wrist-clasps of Form B 17a
Morning Thorpe 346	copper-alloy cruciform brooch, Mortimer Type B; 2 copper-alloy small long brooches: 1 cross-head, 1 unclassified; copper-alloy slip-knot ring with attached tweezers; 11 glass beads
Costume group C	
Barrington B 9	2 copper-alloy small long brooches: 1 square-head, 1 square-head derivative; 2 pairs gilt copper-alloy wrist-clasps of Form C1-Barrington Type; iron buckle; iron knife; 12 glass (11 red, 1 blue) and 1 calcite beads
Great Chesterford 81	copper-alloy cruciform brooch, Type Bb; copper-alloy square-head small long brooch; 1 amber bead; iron ring; copper-alloy ring; iron latch lifter or girdle hanger fragment; iron firesteel; 8 nails; copper-alloy strip fragment
Great Chesterford 153	copper-alloy cruciform brooch, Type Bb; copper-alloy square-head small long brooch; 6 glass beads; iron nail
Morning Thorpe 370	copper-alloy cruciform brooch, Mortimer Type C; pair of copper-alloy cruciform brooches, Type Bb; 4 amber, 7 glass and 1 crystal beads; iron knife; iron ring; iron girdle hanger; copper-alloy wrist-clasp fragments; (possibly also: iron buckle; stamped urn)
Costume group D	
Barrington B 107	2 copper-alloy annular brooches; copper-alloy spiral ring (finger ring?); 2 pairs copper-alloy wrist-clasps, at least one of Form B7; iron buckle with oval loop; iron knife
Great Chesterford 124	pair of tinned copper-alloy annular brooches; remains of 2 pairs of wrist-clasps, Form B7 and possibly Form B 13a; iron buckle with small oval loop; iron knife; 3 nails; large fragment of folded copper-alloy sheet, perhaps a vessel mount
Morning Thorpe 397	copper-alloy cruciform brooch, Mortimer Type D; pair of copper-alloy annular brooches; 1.5 pairs of copper-alloy wrist-clasps, Form B 7; 17 glass beads; copper-alloy bucket pendant; buckle with copper-alloy oval loop and long, punched, copper-alloy backplate; buckle with iron oval loop and sheet copper-alloy backplate; 2 copper-alloy strap-ends; 2 copper-alloy girdle hangers with suspension loop, cast copper-alloy belt ring; iron knife; bent fragment of rolled copper-alloy tube
Spong Hill 37	pair of copper-alloy annular brooches; iron pin; 7 amber and 30 glass beads; copper-alloy spangle; 2 pairs of copper-alloy wrist-clasp, Form B 7; plain ceramic bowl

wrist-clasps, while Barrington A grave 5 excavated in the 19th century also had an annular brooch and a pair of Form B 7 wrist-clasps. Grave 107 at Barrington B and grave 124 at Great Chesterford are clear examples of this group, along with many graves from Norfolk (Table 8.11). The size and diversity of the group suggest that it might itself reasonably be subdivided, for instance into chronological and regional sections. To attempt that, however, will require a workable typology of subtypes of annular brooches and Form B 7 wrist-clasps to be produced.

Costume group A is not clearly represented in the pattern of relationships underlying the parabola in Figure 8.8, primarily because it is, in fact, even more distinct. It is not represented in the East Anglian material analysed but rather in South Cambridgeshire. Its most distinctive feature is the use of cast saucer or applied disc or saucer brooches. These are relatively infrequently associated with wrist-clasps (as in grave 29, grave 79, and grave 95 at Edix Hill) and are far more frequently associated with great square-headed brooches – as in Barrington A grave 11 from the 19th century – than are small long brooches (Hines 1997). Other examples of the group in the vicinity of Edix Hill are Barrington B graves 83 and 108, Great Chesterford graves 2B and 126, and an uncertain grave group from Harlton (possibly Haslingfield) (Table 8.11).

It cannot escape our notice that these four costume groups are of consistently and thus potentially significantly different cultural origins. The saucer brooches of costume group A are a distinctly Saxon type both in terms of their origins, and their predominance in the Saxon areas of southern England from the 5th century and throughout most of the 6th. The great square-headed brooch became equally popular in both Anglian and Saxon England, although there is definite evidence of distinctly Saxon types being introduced and used, or imitated, in the Anglian Midlands: the Harlton brooch is indeed one such type. The Type B cruciform brooches and cross-headed small long brooches of costume group B are the classical Anglian types found both in Anglian England and Schleswig-Holstein. The square-headed small long brooches and their derivatives and Type Bb cruciform brooches, by contrast, have no clear continental ancestry and thus – despite very occasional parallels in Frisia and Scandinavia – are more likely to be forms developed in England (cf above, 5.2.1.1). The same is even more the case with the diagnostic types of costume group D, with cruciform brooches that are the local typological descendants of cruciform brooches of Types B and C and Form B 7 wrist-clasps – the simplest, most common, and very distinctively Anglo-Saxon form of wrist-clasp. The association of trefoil small long brooches with this costume group is intriguing however, because typologically there is every reason to suppose that the simpler trefoil small brooches are absolutely contemporary with the simpler square-headed and cross-headed small long brooches, with which they can be identical in size and form from the bow downwards. In this sense it would appear that some preliminary stage of costume group D was present from about the beginning of the 6th century alongside costume groups A, B, and C, and that costume group D is not simply a homogenised group that emerged out of and superseded the other three groups as the 6th century progressed.

There are a number of obvious, central topics for further analysis based on these observations. To begin with an attempt should be made to test the consistency of these apparent groups over a slightly wider area in southern Cambridgeshire, including, for instance, the cemeteries of Little Wilbraham and Linton Heath (Neville 1852; 1854), Girton (Hollingworth and O'Reilly 1925) and recently excavated graves at Oakington just north of Cambridge. Comparison with other regions of England will be valuable. Detailed internal analysis of the apparent group D will be useful, not only to look for earlier and later stages as suggested above but also because if a distinct transitional phase between the Migration Period and the Final Phase can be found anywhere it seems most likely to be found here.

These costume groups suggest the concurrency of alternative dress sets amongst the women buried at Edix Hill and several other sites in eastern England in the early to middle 6th century. Analysis of the metallurgical composition of the diagnostic artefact-types and comparison of technical details such as punchmarks does nothing to suggest that the coherency of the dress sets is due to a common source of production, although equally it does not disprove that suggestion. The idea of 'workshop links' also seems difficult to reconcile with the recurrence of costume groups B, C, and D over a wide area between South Cambridgeshire and Norfolk.

As we have already noted, at the level of individual graves the margins between these costume groups are more often blurred than sharp, especially as they seem to grow together in the course of time into costume group D; consequently, it seems difficult to believe that they played some consciously symbolic role such as marking ethnic identity, as one might otherwise suspect in light of their distinct cultural origins. It must be remembered that they have been identified by a quantitative technique that fundamentally searches for consistent sequences of variation between overlapping assemblages rather than highly discrete entities. We must also be aware of our own possible lack of perception in respect of costume symbolism in these contexts – which otherwise we do have reason to believe in (Hines 1993, 90–3) – and we should recognise the *possibility* that even mixed sets could have encoded and transmitted a complex message about the identity or connections of the wearer that would have been far more evident to those familiar with the code than to ourselves.

Amongst the recently excavated graves on Edix Hill the putative costume groups are certainly not distinctively clustered; if anything they are markedly dispersed, as with costume group A in grave 79 to the north of the site and graves 95 and 106 in

Trench XII to the south. By corollary the women's graves amongst the distinct group of burials in Trench XII are conspicuously mixed in terms of costume group: we have examples here that can be associated with each of costume groups A, C, and D, and two more mixed assemblages, one of which has elements of costume group B. It is impossible not to compare this with both the stratigraphical evidence noted above (8.3.3–4) for interpreting this set of burials as something like a 'family group', and the further observations based on epigenetic traits consistent with the idea that female exogamy was the norm (above 8.3.2). All of this would also be consistent with the distinctive dress accessories being associated with the potentially diverse origins of the women in a single family group. Similarly in grave 19 and grave 20, there are two women linked both epigenetically and stratigraphically, and similar in costume group, albeit only in terms of the relatively common costume group D. This is another aspect of the hypothesis requiring careful examination in the future.

8.5 Hierarchy

The idea that a social hierarchy may be reflected by the differences in the furnishing of individual graves in early Anglo-Saxon cemeteries is both a long-standing and a much debated one (for references see above, 8.2.3). The most definite result of this discussion has been to leave us considerably more aware of the complexities involved in any such investigations rather than to produce definite results, positive or negative. If we admit the principle that there can be a link between the complexity of burial as a whole rite – the expenditure of material, labour and time involved – and the social status of the deceased, we have immediately to acknowledge that archaeologically we can observe only part of a *claim* to status expressed in this way. In competitive social circumstances, for instance, a particularly conspicuous act may owe considerably more to the ambitions of those responsible for it than to the real status in life of the person buried. It would still then have social implications, but not those it directly asserts. There may, moreover, have been other rites and practices that leave little or no archaeological trace (see above, Chapter 3).

Beyond this there are problems in evaluating and comparing grave assemblages. The range of evidence is of course determined by the conditions for its survival, and is restricted largely to metal and bone artefacts. It is possible that some – perhaps many – of those buried even without dress accessories of this kind could still have been buried in a costume in which the textiles and other organic components were every bit as expensive to produce or obtain as the metal or bonework: silks, intricately woven wool or linen, pelts, and feathers. Traces of many such materials have been found in mineral-preserved form in the recently excavated graves, although only, of course, in the context of metal artefacts. As noted above (8.2.3), the simplest quantification of artefact-types or categories represented in a grave group is in practice as good a basis for large-scale qualitative comparison of graves as more elaborate systems weighted to take account of the apparent rarity, value, or condition of an artefact or its possible symbolic significance. We may also note again that costume accessories constitute about half of the artefact categories from which the RIAC scores are derived, and that the arguably symbolic necklace area can contribute significantly to a higher score. Grave groups achieving the highest range of RIAC scores, however, tend to do so on the basis of the presence of artefacts that do not fall under the heading of dress accessories.

To look at a functioning system of ranks we also need to compare effectively 'contemporary' burials: to generalise female burials between *c* 500 and *c* 650 AD into one group is likely to produce a seriously distorted picture. Yet in practice we need to group burials into comparable phases, and can in fact only divide the female graves into two such categories – Phases I and II – while we cannot effectively subdivide the men's graves at all.

Next we have to recognise that an individual's apparent status seems to change through their life. We have already noted that the status implied by a relatively well-furnished burial can be gained and lost with age (above, 8.2). Children's graves are typically sparsely furnished. Male graves are most likely to be most richly furnished – with two items of weaponry – between the ages of 18 and 35, while there is a suggestion that women could achieve their highest status in these terms between the ages of 25 and 35 during the Migration Period. The possibility that the incidence of death within the nuclear family unit is an important factor, ie the first to die of the parental husband-wife pair receiving the richer burial, has also been mooted (Jørgensen 1987; 1991). Such a practice could not alone account for the low furnishing of the graves of older men (over 45), as it appears that the majority of those dying in the 25–45 age range are likely to have survived their spouses, if we can assume that spouses were likely to be of equal age (Table 8.1). We have no basis for a proper quantitative comparison of male and female grave assemblages, but the possibility that men were likely to outlive their wives may in general terms be a significant factor in the wider range of artefact-types consistently found in female graves compared with male. The presence in the cemetery of older males with healed head wounds apparently caused by edged weapons but buried without weaponry implies that they may have passed out of a weapon-bearing category, perhaps having handed on their arms to a successor.

What, then, is there left for us to look for in terms of social hierarchy at Edix Hill? In so far as fragmentary glimpses of possible family groups have been identified, we might try to look for consistent differences in the status of such putative families.

Two sets of graves, each with two to three men and one woman in a bed-burial, in the central area on the top of the knoll, catch attention: grave 33, grave 46, grave 48, and grave 60; and grave 7, grave 36, and grave 18 (above, 8.3.2–3). Irrespective of the age factor, these men's burials are as richly furnished as any men's burials on the site, and the two bed-burials are the outstanding female burials of Phase II. What we do not know is whether or not these represent the most honoured deceased members of a single dominant family, or two (if not more) families of equal status in this period.

Despite all the reservations listed above, it has to be noted that within the age bands for particular sexes there are differences in grave furnishing that might be related to social rank and not explicable solely in terms of immediate, accidental, family circumstances. As noted above (above, 8.2.3; Fig 8.3a), the under-25 female graves of Phase I tend to cluster on and around the median RIAC scores. However, two or three graves in this age group were distinctly less well furnished, one of these, admittedly, that of a twelve-year-old girl, but another that of a 25-year-old; to these might be added one undated unfurnished female grave and perhaps a further number from amongst the 21 unsexed adult burials on the site, most of which are severely disturbed and represented by only small amounts of the skeleton but six of which have 50% or more of the skeleton remaining (Table 8.6). In the age range 25–35, while four to six graves run from the median RIAC score upwards, virtually the same number, four or five, have RIAC scores of two or three, as have three undated female graves of this age group. For chronological reasons, however, there is a strong likelihood that a majority of the undated female graves are to be assigned to Phase II (above, 7.3.1). If all of the undated graves are put together in a set with the datable Phase II graves it produces a range with considerably greater differentiation than in Phase I, with seven graves at RIAC 0–2 and four graves with an RIAC score of 7 or higher. But even admitting such hypothetical dating, we have no way of telling whether this pattern would represent a greater exclusivity in the provision of expensive burial (ie sharper social stratification) or a shift of emphasis in well-furnished burial from female to male graves (cf the Final Phase cemetery at Melbourn, Cambs below, 9.3.3).

Turning to the men, the majority of those who died between 18 and 45 (fourteen) were buried with weapons (above, Table 8.4), and most of these with two items of weaponry: the shield plus spear set. However at least seven men in this age range were buried without any identifiable weaponry. There is very little difference in the average stature of the men of this age group buried with and without weaponry: the mean estimated stature of those with two items of weaponry was just 6mm more than that of those with no recorded weaponry (see above, 8.2.2).

The conclusion has to be drawn that, despite the presence of such apparently special graves as the two female bed-burials, one of which was occupied by a woman with leprosy, there is no substantial and unambiguous evidence from the cemetery for deep and pervasive social stratification within the community that buried its dead on Edix Hill. It is possible that the community became visibly less egalitarian between the early 6th and the mid 7th century, a development that would agree with the concurrent historical consolidation of the Anglo-Saxon aristocracy, but the archaeological reflection of this process at this very local level is highly uncertain.

It appears rather that the primary natural variables of age and sex are those which are most clearly and consistently enculturated in the burial practices within this cemetery. A third factor of a similar character, family relationship, may also have played a detectable role, at least in the location and alignment of graves. What, if anything, the female costume groups reflect in terms of identity amongst the adult women buried here, can only be established with more analysis.

Chapter 9 The Edix Hill cemetery in its regional context

9.1 Location and probable settlement pattern

The choice of Edix Hill, a promontory of chalk with a knoll rising some 4m higher than the surrounding Gault Clay, as the site for a cemetery can be attributed to several factors. Firstly, the location stood out in an otherwise flat landscape and was visible from a considerable distance, especially from the possible Roman road, Mare Way, that ran along the ridge of Chapel Hill. The spring line at the foot of Chapel Hill was probably where the settlement was situated in a convenient position to utilise the water source, the dry chalkland to the north, and the lowlands south by the river and the cemetery would also have been visible from these springs. Secondly, the low-lying land around Edix Hill would have been extremely wet during the winter months, and until relatively recent times was considered poor quality agricultural land, perhaps even moorland. Thirdly, the existence of Iron Age features and possible Roman activity might have attracted Anglo-Saxon attention to this spot. Some burials were found to have been deliberately laid along an infilled Iron Age ditch, and other ditches may have had a direct influence on the alignment of other burials. The cemetery was therefore situated in a prominent position in an area peripheral to the community, half-way between the best location for settlement at the base of the chalk escarpment and the River Rhee. Streams feeding this river ran southwards on both sides of Edix Hill approximately half a kilometre away, and these may have acted as boundaries defining the territory of the community, giving it a range of resources in a north–south transect from the crest of Chapel Hill and the Roman road down to the river in an area similar to the modern parish of Orwell.

Hooper's Field immediately north of Barrington village probably represented the cemetery of the neighbouring community to the east, and to the north over Chapel Hill the contemporary cemetery at Haslingfield represented a third community. Fox noted the similarity between the assemblages from each of these cemeteries and labelled them the 'Chapel Hill group' (1923, 250–9). From other archaeological evidence we can identify or infer the presence of further settlements to the east across the Rhee at Foxton, Harston (*Appesford*) on the Hoffer Brook (Malim 1993), and Little Shelford, while Melbourn to the south represents a further community on the southern side of the river. North-west of Edix Hill, 18th century and recent finds of Anglo-Saxon burials would suggest that another community lived in the vicinity of Wimpole in the tract of land between Ermine Street, Akeman Street, and Mare Way (Horton *et al* 1994). Finds at Grantchester, Trumpington, and in various parts of Cambridge extend this pattern downstream beyond the confluence of the Rhee, Granta, and Cam.

For the purposes of placing the finds from Barrington A/Edix Hill in a regional context a brief but careful survey has been made of apparently contemporary sites in the area south of the city of Cambridge around the rivers Cam and Rhee: a zone (with the exclusion of the problematic finds from the city of Cambridge itself: Fox 1923, 242–9) within a radius of approximately 15km from Edix Hill (Fig 9.1).

9.2 The Barrington cemeteries: Barrington A and Barrington B

While we do not have perfect evidence for the location of the Anglo-Saxon cemetery known as Barrington B, excavated in 1880 in a 'Hooper's Field' (see discussion in 1.3 above), there is little real doubt that it was located in a field just north of the western end of the present village of Barrington (Fig 1.5), 1.5km east of Edix Hill and the 19th century site of Barrington A. Barrington B was found and excavated in the context of coprolite digging, but by good fortune or virtue of the fact that it was dug some twenty years after Barrington A, better records of the finds are available (Foster 1883). At Barrington A/Edix Hill the burials of between 147 and 176+ individuals have been recorded so far, and it is estimated that the original number will have been well over 300 (above, 6.10 and 8.1). At Barrington B, 114 graves were recorded, which with six double burials represent 120 individuals. Both the Ashmolean and the Cambridge University Museum collections have a number of finds from the 19th century which are provenanced only to Barrington and which could derive from either one of these sites. However the quantity of these is not so great as to make a serious difference to our estimates.

The date-range of the Barrington B cemetery seems to have been exactly the same as that of Barrington A/Edix Hill. There is nothing from Barrington B which suggests that burial began there any earlier than at Barrington A. As on Edix Hill, there is fugitive and imperfect evidence of cremation burials at Barrington B in Foster's statement that 'very few cinerary urns have been found' on the cemetery site (1883, 9). At least six graves at Barrington B produced finds of the types that are primarily assigned to the Phase II at Edix Hill: small oval copper-alloy buckles from graves 46, 62, 63, and 74; Kingston disc-head copper-alloy pins from graves 22 and 46; and a Type C knife from grave 112. An unstratified find illustrated by Foster (1883, pl X.1)

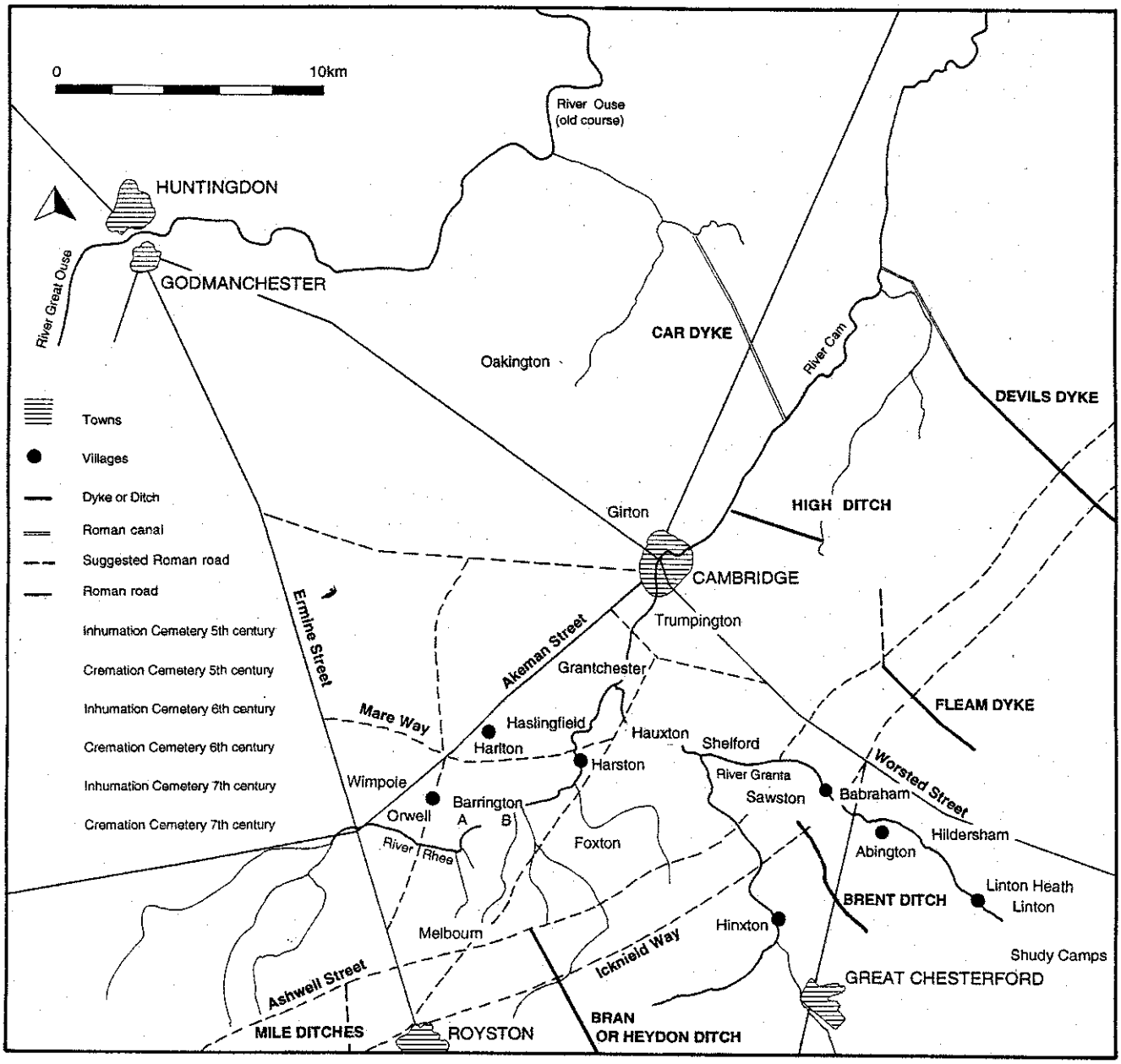


Figure 9.1 Plan of South Cambridgeshire showing sites referred to in this chapter

is a composite scutiform pendant. Late 6th or 7th century artefacts provenanced only to Barrington are hanging-bowl fittings (Brenan 1991, cat nos 4 and 80; for dating, *ibid* 65–74) and a silver broad-band annular brooch with four red cabochon glass or garnet settings (MacGregor and Bolick 1993, no 10.18).

The artefactual range at the two cemeteries is generally very similar, with certain distinct parallels noted in the descriptions of both the finds (see above, 5.2.1.2, 5.2.5.1, and 5.5.1) and the costume groups (above, 8.4). Barrington B has two sword graves recorded (graves 60 and 67), whilst in the British Museum are two swords from Barrington A, one of which could derive from the sword grave found *c* 1840 and later recorded by Babington (1860). A few noticeable differences between the sites cannot as yet be regarded as anything more than curious. Barrington B does not have any of the silver bracelets that are such a conspicuous feature at Barrington A. Conversely there is at least one Migration Period artefact-type that is so well represented at Barrington that the site has given its name to the subtype, wrist-clasps of Hines's Form C 1 'Barrington type' (Hines 1993, 68). These, however, are exclusively or predominately associated with Barrington B and not with Barrington A/Edix Hill (although in the catalogue of Hines 1993, 125, a specimen of this type in the Ashmolean collection is mistakenly attributed to Barrington A).

Similar and closely located though Barrington A and B undoubtedly were, we have concrete reasons to regard them as the cemeteries of separate communities, the one presumably occupying essentially what is now the parish of Orwell and the other in

Barrington – the latter perhaps at the tantalisingly glimpsed settlement site that seems to have lain in what is now the location of the vicarage and church in the village (above, 1.2). Our perception of the cemetery on Edix Hill has changed immensely as a result of the recent excavations, and it is practically futile to compare the results of these modern excavations with evidence derived only from 19th century excavation at Barrington B. Nonetheless one clear question to be considered in any future investigations of the two sites is whether the apparently greater numbers of datable and thus relatively well-furnished Final Phase burials on Edix Hill could represent the superiority of that community in this phase. In the Migration Period, these appear to have been two relatively equal communities, possibly divided by the stream running south into the Rhee just east of Edix Hill which is shown on 18th century Inclosure maps (Figs 1.4 and 1.5). There is at present no reason to imagine that their coexistence was anything other than peaceful and cooperative. Presumably exogamy would have been likely to take place between such neighbouring communities.

9.3 Other sites of the South Cambridgeshire region

9.3.1 Haslingfield

A large quantity of finds in the Ashmolean, British, and Cambridge University Museums come from a cemetery at Haslingfield some 4km north-east of Edix Hill on the other side of Chapel Hill, a local high point rising to between 65 and 70m above sea level (approximately 40m higher than Edix Hill). Regrettably evidence for the circumstances of the finds at Haslingfield is extremely poor. The only intact grave groups from the site comprise a small group of cremation burials deposited in the Ashmolean Museum with at least some of their contents *in situ*. There is also what is probably a single inhumation grave group including a great square-headed brooch, a pair of saucer brooches and a pair of wrist-clasps and gusset plates with a given provenance of Harlton, a village 2km west of Haslingfield, though Fox argued that this collection was probably from the same site as the Haslingfield finds (1923, 257–8). It has also been suggested that finds in the University Museum, Cambridge, originally labelled as having come from Hauxton, a village 3km east of Haslingfield, should be attributed to Haslingfield (but see below, 9.3.4).

It is a matter of considerable importance that while cremation burial is only vaguely hinted at on Edix Hill and at Barrington B, it is fully attested by surviving finds from Haslingfield, albeit not in great quantity. The Ashmolean collection comprises fourteen cremation urns with burnt bone *in situ* (1886.1349–62), while two further vessels in the University Museum, Cambridge (Z21284; AR1886.28) and indeed a large stamped *Buckelurne* from 'Hauxton' (AR1890.21) may have contained cremations. It is conceivable that the more conspicuous presence of cremation here reflects an earlier phase of burial than at either of the Barrington cemeteries. Another important find from Haslingfield is a gilt silver Saxon equal-armed brooch (Evison 1977, fig 3d). This brooch-type itself clearly derives from about the middle of the 5th century, although, as Westgarth Gardens, Bury St Edmunds, Suffolk, grave 55 shows, such early brooches can be buried well into the 6th century (West 1988; cf above, 5.2.1).

In all other respects the quantity and range of the ungrouped finds from Haslingfield implies the presence there of a Migration Period cemetery of a size and character distinctly similar to Barrington A/Edix Hill. The numbers of small long brooches from the two sites are very similar, with 42 from Haslingfield and 45 from Barrington A/Edix Hill. There are more cruciform brooches known from Haslingfield than the latter site (14:9) and more disc brooches (12:7) but markedly fewer applied disc or saucer and cast saucer brooches (8:22). The numbers of annular and penannular brooches and wrist-clasps are very similar.

The quantity of weaponry recorded from Haslingfield, however, is relatively low, probably because of the neglect of ironwork in 19th century collecting already inferred in connection with Barrington A. A total of fourteen spearheads has been preserved, and at least six shield bosses: a further four shield bosses and a shield grip in the British Museum (OA 6578–84) are uncertainly attributed to Haslingfield. Once again there are two swords from the site, in the University Museum, Cambridge, and a separate sword pommel in the Ashmolean. The collection in Cambridge also includes an axe-head from Haslingfield (UM 27.688): an unusual item which is, however, also present at Girton College, grave 9 (Hollingworth and O'Reilly 1925, pl IV.4).

There is only a little evidence for burial continuing beyond the Migration Period here. The Ashmolean collection, however, contained fragments identified as the remains of one or more work boxes, a typical Final Phase type (MacGregor and Bolick 1993, 233), while the University Museum, Cambridge, has an item identified as a textile-working tool, as well as a heddle, and a cowrie shell. The British Museum collection includes an incomplete knife of Type B (OA 4912) with a surviving blade length of 125mm and which was very probably therefore of size-group 3.

Another interesting parallel between Haslingfield and the Barrington sites is a set of finds that suggest that at least one early Anglo-Saxon settlement site has been disturbed here. There are three pin-beaters attributed to Haslingfield, two in the Ashmolean Museum (1886.1369–70) and one in the British Museum (83.7–5.114). The University Museum, Cambridge, has two loomweights provenanced from Haslingfield (Z16371 and Z21285). Furthermore the Ashmolean Museum has two pin-beaters and a loomweight with a given provenance of Harlton

(1909.5955 and 6580c–d). The Ashmolean collection also includes eight spindle whorls from Haslingfield and one from Harlton, an unusually large collection to have come from one cemetery alone (1886.224 and 1363–8; 1927.5955n; 1941.801).

As at the Barrington sites, there is a quantity of Roman metalwork associated with the Haslingfield finds. Of course we have no record of how much of it, if any, was deposited in Anglo-Saxon grave contexts. The objects include two bow brooches and a spoon in the Ashmolean Museum (1909.1374 and 1927.455 and 753), and one disc brooch from the British Museum. The British Museum in fact has a diverse collection of Roman objects – the disc brooch, a spoon bowl, a finger ring, a copper-alloy pin, a key, and a strap-end (74.3–26.13, 19, 25, and 28–31) – which would form a coherent burial assemblage in themselves.

9.3.2 Great Chesterford

Approximately 15km south-east of Edix Hill is the site of a Roman small town, the presence of which is embodied in the modern name of Great Chesterford (Fig 9.1). An Anglo-Saxon cemetery which was superimposed upon a Romano-British extramural cemetery has been partly excavated. The remainder of this cemetery is believed to have been lost to gravel digging and the M11 motorway (Evison 1994).

In the case of Great Chesterford, the differences from the range of finds at Barrington A/Edix Hill are rather more striking than the similarities. Cremation is well represented here with 33 excavated cremation burials alongside 161 inhumation graves. There is also a distinctly earlier phase of inhumation burial than at either of the Barrington cemeteries. This is represented by a group of six graves (graves 10, 24, 33, 113, 115, and 140) which between them contain a range of characteristically 5th century material and nothing diagnostically later. The finds in these include pedestal urns, a glass palm cup, two silver-inlaid kidney-shaped iron buckles, a pair of floriate-cross applied saucer brooches, and a spearhead of Swanton's Series B. None of these grave groups individually *must* be dated to the 5th century, but collectively they strongly imply the presence of a later 5th century phase at this site. It is impossible to date cremation urns with the same degree of confidence, but an example like urn C25 from this site with its standing arch decoration is one of a number of types that could very well derive from the 5th century (Myres 1977, 28–31).

Conversely, there is no reliable evidence for burial in this cemetery continuing into the Final Phase. Vera Evison assigned six graves to a latest phase of burial on the site which she dated to the second half of the 6th century (550–600 AD). In one case (grave 37: a woman's grave) this was on the basis of the presence of a continental type of radiate head brooch with a lozenge-shaped foot known as *Typ Hahnheim*. However the most recent chronologies of material from the Rhineland and Alamannic Germany assign such brooches to the last decade of the 5th and the early 6th century (Roth and Theune 1988; Siegmund 1989). Thus the late dating of the child's grave (grave 118) immediately adjacent to grave 37 (both of which contained identical pots) must also change. Grave 97 is dated late on the basis of containing saucer brooches with rather coarse and degenerate-looking 'radial bar and astragal' designs which Tania Dickinson (pers comm) suggests could belong anywhere from the late 5th to later 6th century. There is no clear reason at all for dating the other three cases (graves 32, 100, and 101) to a late phase except perhaps stratigraphy in the case of graves 32 and 101 which were shown to cut other graves. Consequently, there is nothing here to align the latest known burials at Great Chesterford with the Final Phase as it is clearly defined at the Cambridgeshire sites.

The range of grave goods reveals a number of interesting differences from the burials at Barrington A/Edix Hill. Pottery is notably more frequent in the inhumation graves, occurring in 29 out of 161 contexts. The Great Chesterford women's graves yielded a substantial collection of cruciform brooches of Type Bb with one parallel at Barrington B. A striking difference in respect of male equipment is the occurrence of iron fittings in the belt area variously identified as purse mounts or fire steels (Evison 1994, 26; Brown 1977). Even at this relatively short distance from Edix Hill, we find the cemetery of a community with distinctly different traditions. Nevertheless a comparison between Great Chesterford, just over the border in northern Essex, and the South Cambridgeshire cemeteries is a valid one, particularly because Great Chesterford is far removed from the other 5th and 6th century Anglo-Saxon burial sites around the southern and eastern coasts of Essex and is definitely linked to the northern or Anglian material culture traditions by details such as the wearing of wrist-clasps by some women here, the type of great square-headed brooch found in grave 2B (group XVI: Hines 1997), and the range of cruciform and small long brooches predominantly with spatulate feet. However the additional differences in date range and the incomplete evidence from both Edix Hill and Great Chesterford make any further social comparisons between the sites effectively impossible.

9.3.3 Melbourn

Melbourn, located just 4–5km due south of Edix Hill (Fig 9.1), differs from all of the sites discussed so far in this chapter by being one of the classic Final Phase cemeteries on a site with apparently no Migration Period burials. The excavations of 1952 (Wilson 1956) identified 30 individuals in 28 graves, although a small number of additional finds in the University Museum, Cambridge, and David Wilson's own report, note that further graves had been destroyed without being recorded. It seems unlikely, however,

that a substantial number of Migration Period burials could have been involved here without any record or evidence for them surviving.

It is to be presumed that burial at Melbourn overlapped chronologically – perhaps substantially so – with the later phases of burial at Barrington A/Edix Hill and Barrington B. It is interesting in this case that at least as many of the 28 graves from Melbourn are intrinsically datable to this period on the strength of their contents as at Barrington A/Edix Hill, and more than at Barrington B. At least nine of the Melbourn graves are datable in this way: women's graves III, VI, IX, XIB, and XIX; men's graves XIA, XII, and XVIIIB; and grave VIII which is recorded as 'male(?)' but which may well be female; a further five are arguably so (women's graves VII, XXVIII; men's graves XIV, XXII, and XXVI) though their grave goods are not as strongly diagnostic. Thus only between 32% and 50% of the Melbourn graves are datable by grave goods to the Final Phase, and therefore by association a further 50%–60% of unfurnished graves may also have been of this date. These figures imply for us that the eleven–fourteen graves of this phase datable by grave goods at Barrington A/Edix Hill are likely to be accompanied by at least the same number which are from this phase but not datably furnished, and perhaps up to 35% or more, which would bring the total of Final Phase (Phase II) graves there to 30–35.

The range of grave goods at Melbourn is similar to that at Edix Hill – witness the small oval copper-alloy buckles, the copper-alloy pins, drop pendant and silver wire necklace rings, and iron-bound wooden boxes, *inter alia*. Apart from the absence of bed-burials, the burials at Melbourn do not differ markedly in RIAC scores from those of Phase II at Edix Hill. The richest female grave at Melbourn by this criterion, grave IX, returns an RIAC score of 8. There are, however, only two unfurnished women's burials at Melbourn, plus two unsexed burials: grave XXI, a robbed burial with no recorded grave goods, and grave XXIV, with a fragmentary skeleton suspected to be male on the basis of the size of the femur and containing only a knife. One man's grave, grave XII, contained both a shield boss and a spearhead; the skeleton is described as that of a 'muscular male'. On the whole, the Melbourn burials do not give an impression of any great hierarchical differentiation within this community. Of the two unfurnished women's graves, one (grave IV) is identified as that of a 'very old female', while the other, grave XXVII, that of a fourteen-year-old, is suspected, in fact, of being later in date than the other burials.

9.3.4 Other Anglo-Saxon sites in the area

Various records and a small quantity of finds testify to a further number of early Anglo-Saxon burial sites within the same region as that defined by the larger sites described above. North of Barrington but south of the city of Cambridge itself, on opposite sides of the River Cam, there is evidence of cemeteries at Grantchester and Trumpington. The collection of material from Trumpington is distinguished by three cruciform brooches, two of Types A and B, one of which is particularly early in form (Reichstein 1975, nos 800–2; Åberg 1926, 33–6). As with the metal-detector find of a Type A cruciform brooch from either Edix Hill or Hooper's Field discussed above (5.2.1) and the Haslingfield Saxon equal-armed brooch, however, the presence of a single unstratified specimen of a 5th century brooch-type like this has to be interpreted cautiously in estimating the date-range of the cemetery itself. The only possible evidence for Final Phase burial at Trumpington is a small knife with a blade reminiscent of Type C, though it is not on the whole a typically late knife of this type. Gravel digging at Grantchester is reported to have produced a collection of knives, spearheads and an Anglo-Saxon pot, apparently a carinated bowl (Fox 1923, 249; cf above, 5.5.1); a more recent metal-detector find reportedly from Grantchester is the headplate and bow fragment of a Group XVI great square-headed brooch of the mid 6th century (Hines 1997). In 1971 a sunken hut was found beside a defensive ditch and bank at Grantchester and can be dated to the early Anglo-Saxon period by finds including a small long brooch and pottery (Alexander and Trump 1972).

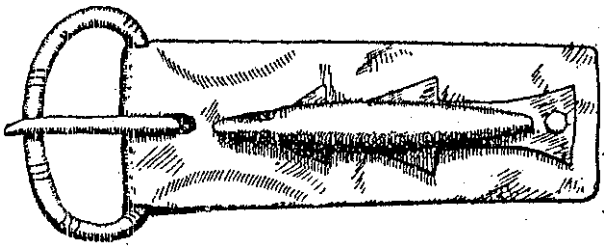


Figure 9.2 Foxton, Cambridgeshire. Copper-alloy buckle (Fox 1924) Scale 2:1

About 4km west of Edix Hill at Wimpole on Ermine Street (now the A1198 trunk road) a small group of burials was excavated in 1989, at least one of which can be identified as early Anglo-Saxon: the burial of a woman with wrist-clasps, an annular brooch and glass and amber beads (Horton *et al* 1994). This is also the location of a late Roman settlement site, which it has been suggested may have been a *mutatio* or horse-changing station. Other burials have been found in the vicinity too but they cannot be positively identified as Anglo-Saxon.

At Foxton, about 3km south-east of Barrington B, nine inhumation burials have been excavated, at least two of which had identifiably Anglo-Saxon grave goods (Fox 1924; Meaney 1964, 65). They were sparsely furnished, and, in an interesting parallel to Edix Hill, were found to overlie a late Iron Age cemetery and settlement site. The attribution of at least one of these burials to the Final Phase may be suggested on the basis of the copper-alloy buckle it contained. This had a small oval loop, 13.5mm wide,

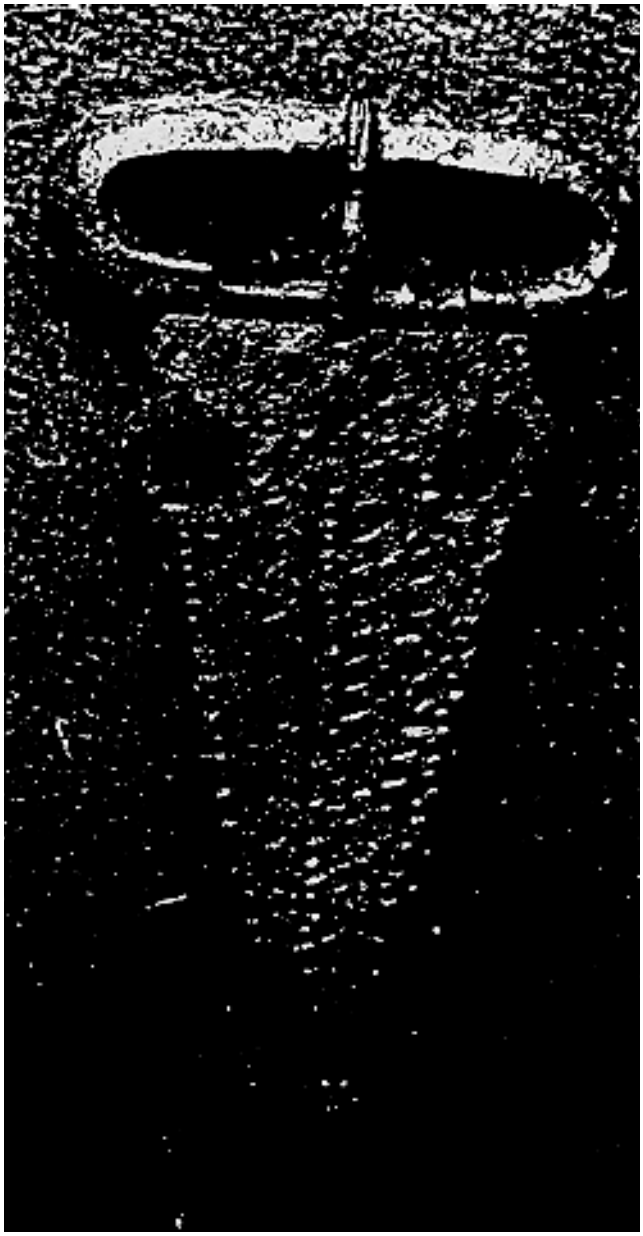


Figure 9.3 Shelford, Cambridgeshire. Copper-alloy buckle. Scale 2:1

and a naturalistic model of a fish attached to a long rectangular back plate (Fig 9.2). This design is distinctly reminiscent of a group of 7th century buckles from Kent (Crundale, Eccles, and Faversham: Webster and Backhouse 1991, 24–5; Smith 1923, 43–4). The size, shape, and dimensions of the Foxton buckle could, however, fit in a late Migration Period context, while the fish motif can also be paralleled with earlier 6th century artefacts such as a couple of great square-headed brooches from Alveston Manor and Ragley Park in the Warwickshire Avon valley (Hines 1997).

To the east of Barrington along the River Cam north of Great Chesterford there are scanty records of Anglo-Saxon burials at several sites. These include Hauxton, Shelford – apparently Little Shelford – Sawston, and Hinxton, all within Cambridgeshire (Fox 1923, 259–60). The finds from Hauxton appear to represent burial, apparently at more than one location, over a wide range of the Anglo-Saxon period. Material attributed to Hauxton in the University Museum, Cambridge, includes a cross-headed small long brooch, three disc brooches, a shield stud and a spearhead, four knives, a large stamped *Buckelurne*, and various iron nails and fragments. Of the knives three are of Type C, and two of them were illustrated by Thomas McKenny Hughes (1891). These two knives appear to have been found in a single grave pit with, *inter alia*, an unusual T-shaped axehead and a key. Nearby was a cremation in a rare, large, splay-sided bowl.

The remains of at least two grave groups from Shelford were presented to the University Museum, Cambridge (1934.988A–D), but some of the finds are at present missing and possibly confused. Burial dating to the 6th century here is definitely represented by a pair of gilt copper-alloy zoomorphic applied saucer brooches, amber beads, and wrist-clasps. Of apparently a later date is a copper-alloy buckle with a long, triangular, punch-decorated backplate, a form which in general was introduced only in the last decades of the 6th century (Fig 9.3).

The most reliably recorded early Anglo-Saxon burial at Sawston is what appears to have been a very rich sword grave from Huckeridge Hill, with two copper-alloy bowls, potsherds, a sword, an incomplete shield boss and what appears to be a shield stud, and a mysterious S-shaped copper-alloy object (Clarke 1817; Fox 1923, 259–60). This assemblage can be assigned to the Migration Period on the basis of the type of shield boss it contained and the two copper-alloy bowls, both of which were probably imported from the Rhineland: one of the type known as a *Perlrandbecker* (Evison 1987, 104), the other a 'Vestland cauldron' (see most recently Künzl 1993, vol 1, 231–47). The existence of a larger cemetery here is implied by the report of the previous discovery of iron spearheads at this site.

Further upstream, at Hinxton Hall, 1km north of Great Chesterford, excavations have recently taken place at an early Anglo-Saxon settlement site with sunken huts, at least one timber-framed building, and annular loomweights. It appears that there may be several phases of Anglo-Saxon settlement represented here, and post-excavation analysis is required before a more detailed understanding of this site will be available (Leith and Spoerry forthcoming). Another recent find from Hinxton, about a kilometre north of the Hinxton Hall site, is a great square-headed brooch, unstratified although reportedly above another sunken hut (Evans 1993). This is a rather individualistic artefact, although nevertheless securely datable to well within the 6th century.

Further east along the Granta there are known burial sites at Linton Heath and Hildersham, while an early Anglo-Saxon sunken hut has been excavated at Linton (Collins 1980) and early Anglo-Saxon pottery found at Little Linton Farm (Taylor *et al*

1995; Bray 1992). Part of an Anglo-Saxon settlement site has been excavated at Bourn Bridge between Babraham and the Abingtons (Pollard 1996). The diagnostic artefacts recovered from this site included a copper-alloy pin with a looped head, iron box fittings, annular loomweights, pottery, some of which was stamped or incised, stone spindle whorls, a pin-beater, and double-sided composite combs. Close to the source of the Granta at Shudy Camps is the site of a famous Final Phase cemetery excavated in 1933 (Lethbridge 1936).

More burial sites, predominantly of the 7th century, have been recorded further to the south-west, beyond Melbourn from Barrington, in southern Bedfordshire and northern Hertfordshire, along the Icknield Way route which E T Leeds so famously identified in 1912 as a line of communication in the very early Anglo-Saxon period between East Anglia and Cambridgeshire and the Upper Thames region (Leeds 1912; Kennett 1972; 1973). A teasing metal-detector find is the headplate of what appears to be a Type A cruciform brooch (the early type also paralleled by stray finds from Trumpington and either Edix Hill or Hooper's Field: above, this section, and 5.2.1.1), from Bassingbourn, 5km west of Melbourn. It has also proved impossible to find much reliable information about a secondary Anglo-Saxon interment furnished with what appears to be a Type C1 or D1 spearhead in a prehistoric barrow at Therfield Heath west of Royston, Herts (Fox 1923, 266; Phillips 1935). According to Swanton's chronology (1973) a Type C1 spearhead could support a 6th century date for the burial, while Type D1 is well represented in 7th century contexts. From St Ippollitts and Letchworth, Herts, come a total of eleven graves, three of which were furnished with the characteristic Final Phase weapon-type, the one-edged sword, *alias* sax. Also datable exclusively on the basis of weaponry is what appears to have been a large cemetery at Astwick, Beds, where large numbers of skeletons were recorded in 1886, together with a sword, a shield boss of Dickinson and Härke's Group 7, five spearheads, a knife and several minor iron objects (Kennett 1972). The diagnostic grave goods in the burials create a definable contrast between these cemeteries and the latest burials at Barrington A/Edix Hill, Barrington B and Melbourn. Whether this difference is chronological, social, or cultural, will have to be left to future research.

9.4 Overview

The early Anglo-Saxon communities around Barrington and Orwell lived in an area that had seen extensive Iron Age and Romano-British settlement. From Orwell, Barrington, and Haslingfield, there are finds of Roman pottery and/or metalwork that testify to Roman period settlement, while there was a villa at Harlton. Given the absence of graves that can be dated with confidence to the 5th century at these cemeteries, it seems likely that some form of sub-Romano-British culture and population survived down towards the year 500 in this area. In this context, it is interesting to note that there is practically no evidence of early Anglo-Saxon material culture in the higher land stretching north-westwards from Chapel Hill and the rivers Cam and Rhee to the Romano-British small town of Godmanchester. During the early Anglo-Saxon period this might therefore have remained the territory of a British community, continuing a pattern of villas and occupation evident in the Roman period (Taylor 1973; Wilkes 1978).

We cannot as yet propose even an outline of the progress of Anglo-Saxon cultural colonisation in the area south of Cambridge with any great confidence. Great Chesterford is clearly a relatively early site, with its phase of late 5th century burials described above. Here it is possible that the relationship between the Roman features in the cemetery and the Anglo-Saxon burials has been reconstructed in some detail, as Evison (1994, esp 36–43) deduces that the earliest Anglo-Saxon burials may have been carefully located in still visible tumuli covering Romano-British cremation burials. At Haslingfield and Trumpington, two more sites closely associated with significant elements of the late-Roman cultural landscape, there is a possibility of equally early burial established for us by the presence of a single definitely 5th century artefact-type in either case. It is also a temptation to suspect that the clearer evidence for cremation burial at Haslingfield may be of chronological significance and imply a relatively early beginning for Anglo-Saxon burial there but this cannot as yet be proved. From either Barrington A/Edix Hill or Barrington B, meanwhile, we also have an isolated 5th century cruciform brooch of the same date as the early brooch from Trumpington, while a further headplate fragment of a cruciform brooch apparently of this early type has been found at Bassingbourn, about 7.5km south-west of Edix Hill. These individual finds of relatively early artefacts need not, of course, have the same chronological implications at every site, but in no case do we have sufficient contextual information to undertake an informative comparison. It is the case that our most substantial evidence of later 5th century activity would support a model of early Anglo-Saxon penetration focused on Romano-British sites down the River Cam, but the recent metal-detector finds emphasise how easily disrupted such loosely founded inferences are.

Across all the sites of the South Cambridgeshire region, the question of the cultural interrelationship between the Anglo-Saxon and the preceding Romano-British contexts is an intriguing one. Both Barrington cemeteries had sherds of Iron Age and Romano-British pottery in grave fills, while Barrington A/Edix Hill, Barrington B, Haslingfield, Trumpington, and Great Chesterford all appear to have had Romano-British metalwork deposited in Anglo-Saxon graves. The most striking recurrent feature of this kind is the use of the Romano-British type of slip-knot copper-alloy bracelets as a feature

of children's dress – as either an anklet or an armring – at Edix Hill, Barrington B, Great Chesterford, and other nearby sites (see above, 5.2.5.2 and 8.2.1). Such bracelets were also found at Haslingfield, but their burial context there is, of course, unknown. This phenomenon has to be assessed in the light of the female Anglo-Saxon costume groups and their distinct cultural origins identified and discussed above (8.4). It seems that a costume feature that was part of a Romano-British cultural inheritance was adopted by the early Anglo-Saxon communities and given a particular function in children's costume. It is not a very common feature of children's costume at any single site, but the recurrence of examples in different cemeteries must be significant. Sally Crawford's study (1991) of children's burials over a much wider area of Anglo-Saxon England appears to identify relatively few other examples of children with bracelets, which implies yet more emphatically that there may be some special local development here. Altogether there seems in this region to be scope for a detailed examination of a localised example of the Roman/Anglo-Saxon cultural transition. Such work will be much more informative if or when DNA or other genetic analytical techniques can produce further information on the demographic history of the area from the well-preserved skeletal material.

In the Roman Period, Cambridge itself was the site of a fortified small town which Burnham and Wacher (1990, 246–9) classify as a 'minor defended settlement'. It appears that Cambridge continued to serve as at least a regional focus for settlement and economic and social activities through the early into the middle and later Anglo-Saxon periods. Haslam (1984) has proposed that both the royal manor recorded at Chesterton in the Domesday survey and the minster church of Cambridge could have had much earlier origins, dating back to the 8th century if not earlier. Certainly the striking concentration of 5th and 6th century cemeteries within the suburbs of modern Cambridge (Fox 1923, 242–9) testify to a clustering of early Anglo-Saxon settlement around the old fortified town and river crossing point.

Amongst the most important and durable features of the cultural landscape inherited by the early Anglo-Saxon period from the Roman (and earlier) periods was an extensive communications network, including a system of Roman roads which seems still to have been used in the early Anglo-Saxon period (Fig 9.1). Ermine Street was the main north–south arterial route, while a series of roads running east–west led into Cambridge and further east. In addition, minor tracks must have crossed the landscape, linking settlements and providing access to the main roads and river crossings; many of these are probably preserved in the medieval road pattern and relatively ancient names such as Lun Way (above, 1.2). Indeed the River Rhee may have been navigable through Barrington and Malton as far as Arrington Bridge/Wimpole on Ermine Street during Anglo-Saxon times.

E T Leeds (1945, 79–85) drew attention to the apparently key place and role of the South Cambridgeshire region in a network of cultural relations, exemplified particularly, as he saw it, by the development of small long brooches, which followed Ermine Street and the *Via Devana* from Cambridge to Godmanchester and other Roman roads westwards from there. Including the local river system, there would have been a comprehensive transport network for the movement of people and products, not only within the locality but also, through the Wash fenlands, overseas to and from the continent. The Icknield Way route has long been thought to have provided a similar major channel of contact between the Upper Thames area to the west and East Anglia to the east (Leeds 1912). The cemeteries at Barrington show clear cultural links with both of these areas, and indeed within the wider zone defined by this communications network including Northamptonshire and reaching westwards to sites along the Warwickshire Avon. The way in which the Cambridgeshire Dykes cut across and seem designed to control movement along this corridor is striking. Radiocarbon dating has recently demonstrated that at least one of the Dykes (Fleam Dyke) was constructed in the late or immediately post-Roman period and was rebuilt at least twice during the 6th century (Malim *et al* 1997). The most open west–east route in this period may therefore have been along Ashwell Street/Street Way at the northern end of the Icknield Way zone, along the northern terminals of the Dykes and through the band of settlements that appear to have been established on the spring line there.

In the 6th century, there appear to have been neighbouring communities of similar size and status burying their dead on Edix Hill (Barrington A), in Hooper's Field just outside Barrington (Barrington B) and at Haslingfield. Equivalent communities may have been burying at the many other sites in the immediate vicinity noted and discussed above, although as yet the smaller amount of material recovered from those sites means that we have to allow for several possibilities. The communities burying there may have been smaller; they may have come into being considerably later than those who used these major sites; they may indeed have been communities which used the typically early Anglo-Saxon burial rite – and other Anglo-Saxon cultural features – considerably less conspicuously than the Chapel Hill communities. We do not have sufficient evidence to compare the size of the contemporary community burying at Great Chesterford, but, as noted above, the traditions of this group were noticeably different from those of Fox's Chapel Hill group. Even between Barrington A/Edix Hill, Barrington B and Haslingfield some differences in the range of artefact-types have been noted.

In the following phase, the Final Phase, there is again evidence for neighbouring communities of broadly the same size at Barrington A and Barrington B, and now also to the south at Melbourn.

There is clear evidence of continuity of burial between the two phases around Hauxton and possible evidence for a new site coming into use at Foxton. There is very slight evidence for continuity into this phase at the more northerly cemetery sites of Haslingfield, Shelford, and Trumpington. The paucity of the evidence from these northerly sites has to be evaluated in light of the facts that (1) Final Phase burial was equally if not even more impalpable at Edix Hill before the recent excavations, and (2) the overall amount of evidence from Shelford and Trumpington is very slight. The hints of continuity that the archaeological record gives us are sufficient to suggest that continuity of use of these burial sites is more likely than a shift of burial to a new, complementary Final Phase cemetery for most of these communities. We cannot conclude therefore that there was a contrast in burial practice between the more northern group of cemeteries and those to the south of Chapel Hill in this phase.

The appearance of Anglo-Saxon furnished burial of the Final Phase in effectively new territory beyond the bounds of the South Cambridgeshire region of the Migration Period does, however, appear to be quite certain. It is represented at a number of sites in northern Hertfordshire and southern Bedfordshire, and at Shudy Camps near the Cambridgeshire/Essex border. Similarly Melbourn, apparently a new burial site of the Final Phase, lies south-west of Barrington and Orwell (although a little further south-west from here is Bassingbourn with its early cruciform-brooch fragment). Again it lies beyond the scope of this study to pursue the possible explanations of this geographical expansion of Anglo-Saxon culture in great detail. It is, however, reflected in several other parts of England: in Surrey, in south-western England, the Peak District, and so on. The material remains do not immediately suggest what the relationship between the communities using the older, established sites and those burying at the new ones may have been. The differences noted above between the Hertfordshire/Bedfordshire cemeteries referred to and contemporary South Cambridgeshire sites are in fact more striking than the similarities.

Altogether, then, we have at present no strong evidence for any regional hierarchy of sites within a visible network of relationships in either of the main chronological phases of burial identified at Edix Hill, but a comprehensible order of chronological priority amongst the sites can be tentatively suggested. Various aspects of the evidence nonetheless suggest – with varying degrees of probability from case to case – that there was a distinct similarity in size, material culture, and wealth between the major sites of the Chapel Hill area, and thus implicit equality in terms of status between the communities that buried there. The next historical point at which we see a comprehensive picture of the density and pattern of rural settlement here is in the Domesday surveys of the later 11th century. The problems involved in any attempt to compare early Anglo-Saxon archaeological evidence and that of the Domesday records are, of course, many and great. We cannot assume that any of our cemeteries or settlements represent the whole population of an area commensurate in size with the territory of the Domesday vill in which they are situated, although it is striking that we usually have just one early Anglo-Saxon burial place to each of the Domesday vills around the Barrington/Orwell area: ie at Orwell and Barrington, Haslingfield and possibly Harlton, Foxton, Grantchester, Sawston, Shelford, Melbourn, and Wimpole. If the reconstructions from either end of the Anglo-Saxon period bear any comparison at all, they suggest considerable demographic and economic development between the 6th–7th centuries and the 11th. The inferred population burying at Edix Hill, for instance, numbers about half that of the Domesday population of Orwell. Although we can see no clear hierarchy between the sites in the early Anglo-Saxon period, by the second half of the 11th century not only did the hidage of Barrington outstrip that of Orwell by 150%, but that of Haslingfield was double that of Barrington.

The value of such comparisons lies principally in demonstrating the relevance and potential of combined early Anglo-Saxon cemetery and settlement site evidence to produce a coherent picture of an area. The problems created by the loss of evidence in the form of the destruction of sites and finds and the absence of records makes a stronger case for the careful preservation and analysis of what is left than for dismissing the exercise as futile. If the apparent changes in rural demography noted above are valid, there are major implications for any attempts to construct models of early Anglo-Saxon rural settlement and economy by interpolation between the apparently intense use of the countryside in the Roman period and Domesday. Thus the relatively rich but regrettably often poorly recorded and curated early Anglo-Saxon archaeology of this area has historical importance in a context much wider than that of Anglo-Saxon studies alone.

Bibliography

Åberg, N, 1926 *The Anglo-Saxons in England, during the early centuries after the invasion*. Cambridge: Heffer

Adams, J C, 1961 *Outline of orthopaedics*. Edinburgh and London: E & S Livingstone Ltd

——, 1969 *Outline of fractures*. Edinburgh and London: E & S Livingstone Ltd

Ager, B M, 1985 The smaller versions of the Anglo-Saxon quoit brooch, *Anglo-Saxon Stud Archaeol Hist,* **4**, 1–58. Oxford: Oxford University Committee for Archaeology

Alexander, J, & Trump, D, 1972 *Grantchester 1971: A preliminary report on excavations*. Board of Extra-Mural Studies, Cambridge and Department of Extra-Mural Studies, London, unpubl report

Ament, H, 1976 Chronologische Untersuchungen an fränkischen Gräberfeldern des jüngeren Merowingerzeit im Rheinland, *Bericht der Römisch-Germanischen Kommission,* **57**, 285–336

——, 1977 Zur archäologischen Periodisierung der Merowingerzeit, *Germania,* **55**, 133–40

Andersen, J G, & Manchester, K, 1992 The rhinomaxillary syndrome in leprosy: a clinical, radiological and palaeopathological study, *Int J Osteoarchaeol,* **2(2)**, 121–9

Andersen, J G, Manchester, K, & Shahzady Ali, R, 1992 Diaphyseal remodelling in leprosy: a radiological and palaeopathological study, *Int J Osteoarchaeol,* **2(3)**, 211–19

Anderson, S, 1993 The human skeletal remains from Caister-on-Sea, in M J Darling & D Gurney (eds), *Caister-on-Sea Excavations by Charles Green, 1951–5*, 261–8, *E Anglian Archaeol Rep,* **60**. Norwich: Norfolk Museums Service

Anderson, S, & Birkett, D, 1993 The human skeletal remains from Burgh Castle, in M J Darling & D Gurney (eds), *Caister-on-Sea Excavations by Charles Green, 1951–5* 256–60, *E Anglian Archaeol Rep,* **60**. Norwich: Norfolk Museums Service

Anderson, T, 1996 Cranial weapon injuries from Anglo-Saxon Dover, *Int J Osteoarchaeol,* **6(1)**, 10–14

Arnold, C J, 1980 Wealth and social structure: a matter of life and death, in P Rahtz, T Dickinson, & L Watts (eds), *Anglo-Saxon Cemeteries 1979*, *BAR Brit Ser*, **82**, 81–142, Oxford

——, 1988 *An Archaeology of the Early Anglo-Saxon Kingdoms*, London: Croom Helm

Avent, R, 1975 *Anglo-Saxon Garnet Inlaid Disc and Composite Brooches, BAR*, **11**, Oxford

Babington, C C, 1860 On Anglo-Saxon remains found near Barrington, in Cambridgeshire, *Cambridge Antiq Soc Comm*, **2**, 7–10

Bakka, E, 1981 Scandinavian-type gold bracteates in Kentish and continental grave finds, in V I Evison (ed), *Angles, Saxons, and Jutes: Essays presented to J N L Myres,* 11–38. Oxford: Clarendon Press

Bantelmann, N, 1988 *Süderbrarup: Ein Gräberfeld der römischen Kaiserzeit und Völkerwanderungszeit in Angeln*, Karl-Wachholtz, Neumünster: Offa-Bücher, N F 63

Barber, E J W, 1991 *Prehistoric textiles*. Princeton, NJ: Princeton University Press

Barnes, E, 1994 *Developmental defects of the axial skeleton in paleopathology*. Niwot, Colorado: University Press of Colorado

Bass, W M, 1987 *Human osteology. A laboratory and field manual*. Columbia, Missouri: Missouri Archaeological Society (Special Publication No 2)

Baxter, M J, 1994 *Explorative Multivariate Analysis in Archaeology*. Edinburgh: Edinburgh University Press

Bayley, J, 1987 Qualitative analyses of some of the beads, in Evison 1987, 182–9

Benjamin, B, 1959 Actuarial aspects of human life-spans, in G E W Wolstenholme & N O'Connor (eds), *CIBA Foundation colloquia on ageing and lifespan of animals*. London: CIBA

Berry, A C, & Berry, R J, 1967 Epigenetic variation in the human cranium, *J Anatomy,* **101**, 361–79

Blades, N, 1995 *Copper alloys from English Archaeological Sites 400–1600 AD*: *An analytical study using ICP-AES*, Royal Holloway and Bedford New College, unpubl PhD thesis, University of London

Boddington, A, 1987 From bones to population: the problem of numbers, in A Boddington, A N Garland, & R C Janaway (eds), *Death, decay and reconstruction. Approaches to archaeology and forensic scienc*e, 180–97. Manchester: Manchester University Press

Böhme, H W, 1986 Das Ende der Römerherrschaft in Britannien und die angelsäcsische Besiedlung Englands im 5 Jahrhundert, *Jahrbuch des Römisch-Germanischen Zentralmuseums,* **33**, 469–574

Böhner, K, 1958 *Die Fränkischen Altertümer des Trierer Landes*, *Germanische Denkmäler der Völkerwanderungszeit* Ser B, 1, 1 and 2. Berlin: Gebr Mann Verlag

Bone, P, 1989 The Development of Anglo-Saxon

Swords from the Fifth to the Eleventh Century, in S Hawkes (ed), *Weapons and Warfare in Anglo-Saxon England*, 63–70. Oxford University Committee for Archaeology, Monograph **21**

Boyle, A, Dodd, A, Miles, D, & Mudd, A, 1995 *Two Oxfordshire Anglo-Saxon Cemeteries: Berinsfield and Didcot*, Thames Valley Landscape Monographs **8**. Oxford: Oxford Archaeological Unit

Bray, S, 1992 *Saxon and Medieval features at Little Linton Farm, Linton*, Cambridgeshire County Council Archaeological Field Unit Report **75**, Cambridge

Brenan, J, 1991 *Hanging Bowls and their Contexts, BAR Brit Ser,* **220**, Oxford

Brodribb, A C C, *et al*, 1972 *Excavations at Shakenoak Farm, Part III, Site F,* Oxford

Brooks, S, & Suchey, J M, 1990 Skeletal age determination based on the os pubis: a comparison of the Acsádi-Nemeskéri and Suchey-Brooks methods, *Human Evolution,* **5(3)**, 227–38

Brothwell, D R, 1961 The palaeopathology of early British man, *J Roy Anthropol Inst,* **91**, 318–44

——, 1972 *Digging up bones,* 2nd edn. London: British Museum (Natural History)

——, 1987 Decay and Disorder in the York Jewbury skeletons in A Boddington, A N Garland & R C Janaway (eds), *Death, decay and reconstruction. Approaches to archaeology and forensic scienc*e, 22–26. Manchester: Manchester University Press

Brothwell, D R, & Browne, S, 1994 Pathology in J M Lilley, G Stroud, D R Brothwell, & M H Williamson, *The Jewish burial ground at Jewbury,* 457–94. London: CBA for York Archaeological Trust

Brothwell, D R, & Powers R, 1968 Congenital malformations of the skeleton in earlier man, in D R Brothwell (eds), *The skeletal biology of earlier human populations*, 173–203. London: Pergamon Press

Brown, P D C, 1977 Firesteels and pursemounts again, *Bonner Jahrb,* **177**, 451–77

Brown, P D C, & Schweizer, F, 1973 X-ray fluorescent analysis of Anglo Saxon jewellery, *Archaeometry,* **15**, 175–92

Brun, N, & Pernot, M, 1992 Opaque red glass of Celtic enamels from continental Europe, *Archaeometry,* **34**(2), 235–252

Burnham, B C, & Wacher, J, 1990 *The 'Small Towns' of Roman Britain*. London: Batsford

Cameron, E, 1991 Identification of skin and leather preserved by iron corrosion products, *J Archaeol Sci,* **18**, 25–33

Chadwick, H M, 1907 *The Origin of the English Nation*. Cambridge: Cambridge University Press

Chadwick, S E, 1958 The Anglo-Saxon cemetery at Finglesham, Kent: a reconsideration, *Medieval Archaeol,* **2**, 1–71

Charles-Edwards, T, 1997, Anglo-Saxon kinship revisited, to appear in J Hines (ed) *The Anglo-Saxons from the Migration Period to the Eighth Century: towards an Ethnographical Perspective,* 171–210. Woodbridge: Boydell & Brewer

Clarke, E D, 1817 Observations upon some Celtic remains, lately discovered by the public road leading from London to Cambridge, near to the village of Sawston, distant seven miles from the University, *Archaeologia,* **18**, 340–3

Colgrave, B, 1956 *Felix's Life of Saint Guthlac*. Cambridge: Cambridge University Press

Collins, A E, 1980 *Linton Gas Pipeline*, *Interim Report 1980*, Great Chesterford Archaeology Group

Cool, H E M, 1983 *A study of the Roman personal ornaments made of metal, excluding brooches, from Southern Britain*, unpub PhD thesis, Univ College, Cardiff

Cook, A M, & Dacre, M W, 1985 *Excavations at Portway, Andover 1973–5, Oxford Univ Comm Archaeol Monogr*, **4**, Oxford

Cowgill, J, de Neergaard, M, & Griffiths, N, 1987 *Knives and Scabbards: Medieval Finds from Excavations in London,* 34–39. London: HMSO

Cox, B, 1976 The place-names of the earliest English records, *Engl Place-Name Soc J* **8**, 12–66

Crawford, S, 1991 When do Anglo-Saxon children count? *J Theor Archaeol,* **2**, 17–24

Crowfoot, E, 1978 Textiles, in Green, B & Rogerson, A, *The Anglo-Saxon Cemetery at Bergh Apton, Norfolk, East Anglian Archaeology,* **7**, 98–106

——, 1983 The textiles, in Bruce-Mitford, R *The Sutton Hoo Ship-Burial* vol **3.1**, 409–479, London

——, 1987 Textiles, in Green, *et al,* The Anglo-Saxon Cemetery at Morning Thorpe *E Anglian Archaeology Report* **36**, 171–75

——, 1988 The textiles in S West The Anglo-Saxon Cemetery at Westgarth Gardens Bury St Edmunds *E Anglian Archaeology Report* **38**

——, 1988 Textiles, from Ardale Anglo-Saxon Cemetery in T J Wilkinson, *Archaeology and Environment in South Essex, East Anglian Archaeology,* **42**, 54–55

——, 1990 Textile fragments from 'relic-boxes' in Anglo-Saxon graves, in P Walton & J P Wild (eds), *Textiles in Northern Archaeology, NESAT,* **3**

Crowfoot, E, forthcoming Textiles in W Filmer Sankey & T Pestell, *Snape Anglo-Saxon cemetery excavations and survey 1824–1991, East Anglian Archaeology*

Crowfoot, E, with Henshall, A S, 1981 Textiles, in A M Cook, *The Anglo-Saxon Cemetery at Fonably, Lincolnshire Occas Pap Lincolnshire Hist Archaeol,* **6**, 89–101, Sleaford

Crowfoot, E, with Jones, J, 1984 Textiles, in Hills, *et al* 1984, 17–29

Crowfoot, G M, 1951 Textiles of the Saxon Period in the Museum of Archaeology and Ethnology, *Proc Camb Antiq Soc,* **44**, 26–32

Crummy, N, 1979 A chronology of Romano-British bone pins, *Britannia,* **10**, 157–63
——, 1983 *The Roman small finds from excavations in Colchester 1971–9*, *Colchester Archaeol Rep,* **2**
Crummy, N, Crummy, P, & Crossan, C, 1993 *Excavations of Roman and later cemeteries, churches and monastic sites in Colchester, 1971–88*, *Colchester Archaeol Rep,* **9**
Cruwys, E & Duhig, C, 1993 A possible case of dental erosion in a skull from the French Congo (People's Republic of the Congo), *J Palaeopathol,* **5(1)**, 47–52
Darby, H C, 1977 *Domesday England*. Cambridge: Cambridge University Press
Darby, H C, & Miller, E, 1948 Political history in L F Salzman (ed), *The Victoria History of the County of Cambridge and the Isle of Ely,* **2**, 377–419. London: Oxford University Press
Davey, B, (ed) 1985 *Birth to old age. Health in transition*. Milton Keynes: Open University Press
Davidson, H E, 1962 *The sword in Anglo-Saxon England*. Oxford: Oxford University Press
Dickinson, T M, 1979 On the origin and chronology of the Anglo-Saxon disc brooch, *Anglo-Saxon Stud Archaeol Hist,* **1**, 39–80, *BAR Brit Ser*, **72**, Oxford
——, 1982 Fowler's Type G pennanular brooches reconsidered, *Medieval Archaeol,* **26**, 41–68
——, 1991 Material culture as social expression: the case of Saxon saucer brooches with running spiral decoration, *Studien zur Sachsenforschung,* **7**, 39–70
——, 1993a Early Saxon saucer brooches: a preliminary overview, *Anglo-Saxon Stud Archaeol Hist,* **6**, 11–44. Oxford: Oxford University Committee for Archaeology
——, 1993b An Anglo-Saxon 'cunning woman' from Bidford-on-Avon, in M Carver (ed), *In Search of Cult: Archaeological Investigations in Honour of Philip Rahtz*, 45–54 Woodbridge
Dickinson, T M, & Härke, H, 1992 *Early Anglo-Saxon Shields*, *Archaeologia,* **110**. London: Society of Antiquaries
Dierkens, A, 1981 Cimitières mérovingiens et histoire du haut moyen âge: chronologie-société-religion, *Acta Historica Bruxellensia,* **4**, 15–70
Duhig, C, 1993 The skeletal material, in B Robinson & C Duhig, Anglo-Saxon burials at the 'Three Kings', Haddenham 1990, *Proc Cambridge Antiq Soc,* **81**, 15–38
——, 1998 The skeletal remains in J Hines & A Taylor, *An Anglo-Saxon cemetery at Oakington, Cambridgeshire, Proc Cambridge Antiq Soc* **86**
——, In prep. The skeletal remains in C Haith, *The Anglo-Saxon cemetery of St Peter's Tip, Broadstairs, Kent* (for British Museum)
——, In press, The human remains, in (ed R Janko), *Ayios Stephanos. Results of excavations in Lakonia 1973–7*, Athens: Annual of the British School at Athens Supplementary Series
Duhig, C, Strouhal E, & Nemecková, A, 1997, A case of secondary carcinoma from a pagan Anglo-Saxon cemetery – Barrington Edix Hill, Cambridgeshire, England, *J Palaeopathol*, **8.1**
Dunsmore, S, nd *The nettle in Nepal. A cottage industry*. Chatham, Kent: NRI
Earwood, C, 1993 *Domestic Wooden Artifacts in Britain and Ireland from Neolithic to Viking Times*, 169. Exeter: University of Exeter Press
Evans, C, 1993 *Archaeological Investigations at Hinxton Quarry*. Cambridge: Cambridgeshire Archaeological Unit Report **88**
Evison, V I, 1955 Early Anglo-Saxon inlaid metalwork, *Antiq J,* **35**, 20–45
——, 1965 *The fifth-century invasions south of the Thames*, London: Athlone Press
——, 1977 Supporting-arm brooches and equal-arm brooches in England, *Studien zur Sachsenforschung,* **1**, 127–47
——, 1987 *Dover: the Buckland Anglo-Saxon cemetery*, *Hist Build Monuments Comm Engl Archaeol Rep,* **3**. London
——, 1994 *An Anglo-Saxon cemetery at Great Chesterford, Essex*, *CBA Res Rep*, **91**. York
Farley, M, & Hines, J, 1997 A great square-headed brooch fragment from Buckinghamshire, *Medieval Archaeol* 1, **40**, 211–14
Fell, C, 1984a A *friwif locbore* revisited, *Anglo-Saxon England,* **13**, 157–65
——, 1984b *Women in Anglo-Saxon England,* London
Finnegan, M, 1978 Non-metric variation of the infracranial skeleton, *J Anatomy,* **125**, 23–37
Fisher, G C, 1979 *Finger rings of the early Saxon period,* unpubl MPhil thesis, Univ Oxford
Floud, R, Wachter K, & Gregory, A, 1990 *Height, health and history. Nutritional status in the United Kingdom, 1750–1980, Cambridge Studies in Population, Economy and Society in Past Time,* **9**. Cambridge: Cambridge University Press
Foster, W K, 1883 Account of the excavation of an Anglo-Saxon cemetery at Barrington, Cambridgeshire, *Cambridge Antiq Soc Communications,* **5**, 5–32
Fowler, E, 1960 The origins and development of the penannular brooch in Europe, *Proc Prehist Soc,* **26**, 149–77
——, 1963 Celtic metalwork of the fifth and sixth centuries AD, *Archaeol J,* **120**, 98–160
Fox, C F, 1923 *The archaeology of the Cambridge region*. Cambridge: Cambridge University Press
——, 1924 Excavations at Foxton, Cambridgeshire, in 1922, *Proc Cambridge Antiq Soc,* **25**, 37–46
Freestone, I C, 1987 Composition and microstructure of early opaque red glass in M Bimson & I C Freestone (eds), *Early Vitreous Materials,* British Museum Occasional Paper, **56**, 173–191

Garn, S M, Silverman F N, Herzog, F P, & Rohman C G, 1968 Lines and bands of increased density. Their implication in growth and development, *Medical Radiography and Photography,* **44**, 58–88

Gilmour, B J J, 1991 *The Technology of Anglo-Saxon Edged Weapons,* Univ College, London, unpubl PhD Thesis

Gindhart, P S, 1969 The frequency of appearance of transverse lines in the tibia in relation to childhood illnesses, *American J Phys Anthropol,* **31**, 17–22

Goodman, A H, 1988 The chronology of enamel hypoplasias in an industrial population: a reappraisal of Sarnat and Shour [*sic*], *Human Biology,* **60(5)**, 781–91

Goodman, A H, & Armelagos, G J, 1985 The chronological distribution of enamel hypoplasia in human permanent incisor and canine teeth, *Archives of Oral Biology,* **30(6)**, 503–7

Green, B, & Rogerson, A, 1978 *The Anglo-Saxon Cemetery at Bergh Apton, Norfolk, Catalogue, E Anglian Archaeol Rep,* **7**. Gressenhall, Norfolk

Green, B, Rogerson, A, & White, S G, 1987 *The Anglo-Saxon Cemetery at Morning Thorpe, Norfolk*, 2 vols, *E Anglian Archaeol Rep,* **36**. Gressenhall, Norfolk

Greep, S J, 1983 *Objects of Animal Bone, Antler, Ivory and Teeth from Roman Britain*, unpub PhD thesis, Univ Cardiff

——, 1995 Objects of bone, antler and ivory from CAT sites, in K, M & P Blockley, S S Frere, & S Stow, *Excavations in the Marlowe Car Park and Surrounding Areas,* 1112–52, *The Archaeology of Canterbury,* **5**

Grierson, P, & Blackburn, M, 1986 *Medieval European Coinage I: The Early Middle Ages*. Cambridge: Cambridge University Press

Grüneberg, H, 1952 Genetical studies on the skeleton of the mouse IV. Quasi-continuous variations, *J Genetics,* **51**, 95–114

Hald, M, 1980 *Ancient Danish textiles from bogs and burials* Copenhagen (English edition *Olddanske Tekstiler* 1950*)*

Härke, H, 1989 Knives in Early Saxon burials: blade length and age at death, *Medieval Archaeol,* **33**, 144–8

——, 1992a Changing symbols in a changing society: the Anglo-Saxon weapon burial rite in the seventh century, in M Carver (ed), *The age of Sutton Hoo*, 149–65. Woodbridge: The Boydell Press

——, 1992b *Angelsächsische Waffengräber des 5. bis 7. Jahrhunderts*, *Cologne Zeitschrift für Archäologie des Mittelalters, Beiheft*, **6**. Cologne and Bonn: Rheinland-Verlag & Habelt

Harris, H A, 1933 *Bone growth in health and disease*. London: Oxford University Press

Haslam, J, 1984 The development and topography of Saxon Cambridge, *Proc Cambridge Antiq Soc,* **72**, 13–29

Hauser, G, & De Stefano, G F, 1989 *Epigenetic variants of the human skull*. Stuttgart: Schweizerbart

Hawkes, S C, 1973 The dating and social significance of the burials in the Polhill Cemetery, in B Philp *(*ed), *Excavations in West Kent 1960–70*, 186–201. Dover

Hawkes, S C, Merrick, J M, & Metcalf, D M, 1966 X-ray fluorescent analysis of some dark age coins and jewellery, *Archaeometry,* **9**, 98–138

Hawkins, D, 1983 The skull in T Sherwood, A K Dixon, D Hawkins, & M L J Abercromie, *Roads to radiology*, 73–86. Berlin: Springer-Verlag

Hawthorne, J G, & Smith C S, (translators) 1963 *On Divers Arts; the Treatise of Theophilus*. Chicago: University of Chicago Press

Hedeager, L, 1992 *Iron-Age Societies: From Tribe to State in Northern Europe, 500 BC to AD 700*. Oxford: Blackwell

Henderson, J, 1990 The scientific investigation of the glass beads from the Apple Down Anglo-Saxon cemetery, in A Down & M Welch (eds), *Chichester Excavations 7: Appledown and The Mardens*, 156–161. Chichester: Chichester District Council

Henshall, A S, 1959 Textiles on the back of a brooch from Blewburton Hill, Berks, in A E P & F J Colins, Excavations on Blewburton Hill 1953, *Berks Arch J,* **57**, 17–22

Hill, P V, & Kent, J P C, 1960 *Late Roman Bronze Coinage*, part 1, London

Hills, C, Penn, K, & Rickett, R, 1984 *The Anglo-Saxon Cemetery at Spong Hill, North Elmham, Part III, E Anglian Archaeol Rep,* **21**. Gressenhall, Norfolk

Hillson, S, 1986 *Teeth* (Cambridge Manuals in Archaeology). Cambridge: Cambridge University Press

Hines, J, 1984 *The Scandinavian Character of Anglian England in the pre-Viking Period*, *BAR British Series,* **124**. Oxford

——, 1990 The runic inscriptions of Early Anglo-Saxon England, in A Bammesberger & A Wollmann (eds), *Britain 400–600: Language and History*, **205**, 437–55. Heidelberg: Carl Winter

——, 1990a Philology, archaeology and the *adventus Saxonum vel Anglorum*, in A Bammesberger & A Wollmann (eds), *Britain 400–600: Language and History,* **205**, 17–36. Heidelberg: Carl Winter

——, 1992 Seriation and the chronology of Anglian English women's graves: a critical assessment in L Jørgensen (ed), *Chronological Studies*, *Arkæologiske Skrifter*, **5**, 81–93. Univ Copenhagen

——, 1993 *Clasps: Hektespenner: Agraffen. Anglo-Scandinavian Clasps of Classes A-C of the 3rd to 6th Centuries A.D.: Typology, Diffusion and Function*. Kungl Vitterhets Historie och Antikvitets Akademien, Stockholm

——, 1994 North-sea trade and the proto-urban sequence, *Archaeologia Polona,* **32**, 7–26
——, 1997 *A New Corpus of Anglo-Saxon Great Square-Headed Brooches*. London: Society of Antiquaries Research Report
Hines, J, & Taylor, A, 1988 An Anglo-Saxon cemetery at Oakington, Cambridgeshire, *Proc Cambridge Antiq Soc*, **86**
Hirst, S M, 1985 *An Anglo-Saxon Inhumation Cemetery at Sewerby East Yorkshire*, *York Univ Archaeol Publ,* **4**, York
Hirst, S M, & Clark, D, forthcoming, *Excavations at Mucking Volume 3: The Anglo-Saxon Cemeteries*. London: English Heritage Archaeological Report
Hoffman, M, 1964 *The Warp-weighted Loom, Studia Norvegica,* **14.** Norsk Folkemuseum, Oslo
Høilund Nielsen, K, 1995, From artefact to interpretation using correspondence analysis, *Anglo-Saxon Stud Archaeol Hist,* **8** 111–43
——, 1997, Animal art and the weapon burial rite. A political badge? in C K Jensen & K Høilund Nielsen (eds), *From Burial to Society*, 129–48. Aarhus University Press
Hollingworth, E J, & O'Reilly, M M, 1925 *The Anglo-Saxon Cemetery at Girton College, Cambridge*. Cambridge: Cambridge University Press
Holst, M, 1993 *Comparing the relationship of biological sexing and evidence for gender from grave goods in Anglo-Saxon burials*. Unpubl BA dissertation, Dept Archaeol, Univ Leicester
Horton, W, Lucas, G, & Wait, G A, 1994 Excavation of a Roman site near Wimpole, Cambridgeshire, 1989, *Proc Cambridge Antiq Soc,* **83**, 31–74
Houghton, P, 1974 The relationship of the preauricular groove of the ilium to pregnancy, *American J Phys Anthropol,* **41**, 381–90
Huber, N M, 1968 The problem of stature increase, in D R Brothwell (ed), *The skeletal biology of earlier human populations*, 67–102. Oxford: Pergamon Press
Huggett, J W, 1988 Imported grave goods and the early Anglo-Saxon economy, *Medieval Archaeol,* **32**, 63–96
Hughes, M J, 1972 A technical study of opaque red glass of the Iron Age in Britain, *Proc Prehist Soc,* **38**, 98–107
Hughes, T McK, 1891 On some antiquities found near Hauxton, Cambridgeshire, *Proc Cambridge Antiq Soc,* **7**, 24–8
Hyslop, M, 1963 Two Anglo-Saxon cemeteries at Chamberlain's Barn, Leighton Buzzard, Beds, *Archaeol J,* **120**, 161–200
Jackson, D A & Ambrose, T M, 1978 Excavations at Wakerley, Northants, 1972–75, *Britannia,* **9**, 115–242
Jørgensen, L, 1987 Family burial practices and inheritance systems: the development of an Iron Age society from 500 BC to AD 1000 on Bornholm, Denmark', *Acta Archaeologica,* **58**, 17–53
——, 1991 Castel Trosino and Nocera Umbra: a chronological and social analysis of family burial practices in Lombard Italy (6th–8th cent. AD), *Acta Archaeologia,* **62**, 1–58
Jørgensen, L B, 1992 *North European Textiles Until AD 1000*, Aarhus
Keepax, C, 1975 Scanning electron microscopy of wood replaced by iron corrosion products, *J Archaeol Sci*, **2**, 145–150
Kemp, S, & Malim, T, 1990 *An Archaeological Survey at Malton Farm, Orwell. Cambridgeshire County Council Archaeological Field Unit Report* **14**
Kelley, M A, 1989 Infectious disease in M Y Iscan & K A R Kennedy (eds), *Reconstruction of life from the skeleton,* 210–22. New York: A.R. Liss
Kennedy, K A R, 1989 Skeletal markers of occupational stress, in M Y Iscan & K A R Kennedy (eds), *Reconstruction of life from the skeleton*, 129–60. New York: A R Liss
Kennedy, K A R, Plummer, J, & Chiment, J, 1986 Identification of the eminent dead: Penpi, a scribe of ancient Egypt, in K Reichs (ed), *Forensic osteology: the recovery and analysis of unknown skeletal remains*, 290–307. Springfield Ill.: Charles C Thomas
Kennett, D H, 1971 Applied brooches of the Kempston Type at St. John's, Cambridge, *Proc Cambridge Antiq Soc,* **63**, 27–9
——, 1972 Seventh century finds from Astwick, *Bedforshire Archaeol J,* **7**, 45–51
——, 1973 Seventh century cemeteries in the Ouse Valley, *Bedforshire Archaeol J,* **8**, 99–108
Kent, J P C, 1972 Gold standards of the Merovingian coinage, AD 580–700, in E T Hall & D M Metcalf (eds), *Methods of Chemical and Metallurgical investigation of ancient coinage*, Royal Numismatic Society, Special Publication No **8**, 69–74
Kent, S, Weinberg, E D, & Stuart-Macadam, P, 1990 Dietary and prophylactic iron supplements. Helpful or harmful? *Human Nature,* **1(1)**, 53–79
Kermode, J I, 1973 Orwell, in C R Elrington (ed), *The Victoria History of the County of Cambridge and the Isle of Ely: Volume* **5**, 241–51. Oxford: Oxford University Press
King, M D, 1988 Roman coins from Early Anglo-Saxon contexts, in J Casey & R Reece (eds), *Coins and the Archaeologist*, 2nd edn, 224–30. London: Seaby
Koch, U, 1977 *Das Reihengräberfeld bei Schretzheim*, 2 vols. Mann, Berlin: Germanische Denkmaler der Völkerwanderungszeit Ser A, Bd 13
Kühn, H, 1965 *Die Germanischen Bügelfibeln der Völkerwanderungszeit in der Rheinprovinz* 2nd edn, Graz: Akademische Druck- und Verlagsanstalt,
Künzl, E, 1993 *Die Alamannenbeute aus dem*

Rhein bei Neupotz. Mainz, Römisch-Germanisches Zentralmuseum: Monographien **34**. 4 vols

Lallo, J W, Armelagos, G J & Mensforth, R P, 1977 The role of diet, disease, and physiology in the origin of porotic hyperostosis, *Human Biology,* **49(3)**, 471–83

Leeds, E T, 1912 The distribution of the Anglo-Saxon saucer brooch in relation to the Battle of Bedford, AD 571, *Archaeologia,* **63**, 159–202

——, 1936 *Early Anglo-Saxon Art and Archaeology*. Oxford: Oxford University Press

——, 1945 The distribution of the Angles and Saxons archaeologically considered, *Archaeologia,* **91,** 1–106

——, 1949 *A Corpus of Early Anglo-Saxon Great Square-headed Brooches*. Oxford: Oxford University Press

Leeds, E T & Pocock, M, 1971 A survey of the Anglo-Saxon cruciform brooches of the florid type, *Medieval Archaeol,* **15,** 13–36

Leith, S F, & Spoerry, P, forthcoming Hinxton Hall: An Anglo-Saxon settlement.

Lethbridge, T C, 1931 *Recent Excavations in Anglo-Saxon Cemeteries in Cambridgeshire and Suffolk*. *Cambridge Antiq Soc Quarto Publ,* New Ser, **3**. Cambridge

——, 1936 *A Cemetery at Shudy Camps, Cambridgeshire*. *Cambridge Antiq Soc Quarto Publ,* New Ser, **5**. Cambridge

Lewis, M, 1994 *The impact of urbanisation: maxillary sinusitis in later medieval populations*. Paper presented at the 16th Annual Conference of the Theoretical Archaeology Group, Bradford, 14–16 December 1994

Liber Eliensis 1848 (Anglia Christiana Society) cc. 62 and 92

Longley, D, 1975 *Hanging Bowls, Penannular Brooches and the Anglo-Saxon Connexion,* BAR, **22**. Oxford

Lovejoy, C O, Meindl, R S, Pryzbeck T R, & Mensforth, R, 1985 Chronological metamorphosis of the auricular surface of the ilium: a new method for the determination of adult skeletal age at death, *American J Phys Anthropol,* **68**, 15–28

Lukacs, J R, 1994 Dental paleopathology: methods for reconstructing dietary patterns, in M Y Iscan & K A R Kennedy (eds), *Reconstruction of life from the skeleton*, 2nd edn, 261–86. New York: John Wiley & Sons

Lund Hansen, U, 1988 Hovedproblemer i romersk og germansk jernalders kronologi i Skandinavien og på Kontinentet, in P Mortensen & B M Rasmussen (eds), *Fra Stamme til Stat i Danmark, 1: Jernalderens Stammesamfund*, 21–35. Aarhus Universitetsforlag: Jysk Arkæologisk Selskabs Skrifter XXII,

McDonnell, J G, 1992 The Knives, in P Ottaway, *Anglo-Scandinavian Ironwork from 16–22 Coppergate, Archaeology of York* **17**

McKinley, J I, 1987 Report on the skeletal material, in Green, *et al* 1987, 188–9

——, 1992 A probable trepanation from an early Anglo-Saxon cemetery at Oxborough, Norfolk, *Int J Osteoarchaeol,* **2**(4), 333–5

MacGregor, A, 1985 *Bone, Antler, Ivory and Horn: The Technology of Skeletal Materials since the Roman Period*. London: Croom Helm

MacGregor, A, & Bolick, E, 1993 *A summary catalogue of the Anglo-Saxon collections (non-ferrous metals)*, *Ashmolean Museum*, *BAR British Series,* **230**. Oxford

Malim, T, 1993 *Anglo-Saxon cemetery, Edix Hill, Barrington – 1991: Interim Report,* Cambridgeshire County Council Archaeological Field Unit Report **92**

——, 1993 An investigation of multi-period cropmarks at Manor Farm, Harston, *Proc Cambridge Antiq Soc,* **82**, 11–54

——, 1998 Prehistoric and Roman remains at Edix Hill, Barrington, Cambridgeshire, *Proc Cambridge Antiq Soc*, **86**, 13–56

Malim, T, *et al* 1997 New Evidence on the Cambridgeshire Dykes and Worsted Street Roman Road. *Proc Cambridge Antiq Soc,* **85** p 27–122

Manchester, K, 1981 A leprous skeleton of the 7th century from Eccles, Kent, and the present evidence of leprosy in early Britain, *J Archaeol Sci,* **8**, 205–9

Manchester, K, nd *Bone changes of tuberculosis*. Notes for palaeopathology course of Bradford University/Smithsonian Institution, Bradford, March-April 1988

Mann, G E, 1993 Myositis ossificans in medieval London, *International J Osteoarchaeology,* **3**(3), 223–6

Manning, W H, 1995 *The Roman Small Finds*, *Report on the Excavations at Usk 1965–1976*, **VII**. Cardiff

May, J, 1977 Romano-British and Saxon Sites near Oxfordshire, *Oxoniensia,* **42**, 42–79

Mays, S A, 1993 Infanticide in Roman Britain, *Antiquity,* **67**, 883–8

Meaney, A L, 1964 *A gazetteer of early Anglo-Saxon burial sites*. London: Allen & Unwin

——, 1981 *Anglo-Saxon amulets and curing stones*, *BAR, Brit Ser*, **96**. Oxford

——, 1993 A gazetteer of Hundred and Wapentake meeting-places of the Cambridge region, *Proc Cambridge Antiq Soc,* **82**, 67–92

Meindl, R S, & Lovejoy, C O, 1985 Ectocranial suture closure: a revised method for the determination of skeletal age at death based on the lateral-anterior sutures, *American J Phys Anthropol,* **68**, 57–66

Merbs, C F, 1994 Trauma, in M Y Iscan & K A R Kennedy (eds), *Reconstruction of life from the*

skeleton, 2nd edn, 161–89. New York: John Wiley & Sons
Møller-Christensen, V, 1961 *Bone changes in leprosy*. Copenhagen: Munksgaard
Møller-Christensen, V & Hughes, D R, 1962 Two early cases of leprosy in Great Britain, *Man,* **287/8**, 176–8
Molleson, T L, 1993 The human remains, in D E Farwell & T L Molleson, *Excavations at Poundbury 1966–80. Volume II: the cemeteries*, Monograph Series, **11**, 142–214. Dorchester: Dorset Natural History and Archaeological Society
Moorrees, C F A, Fanning, E A, & Hunt, E E, 1963a Formation and resorption of three deciduous teeth in children, *American J Phys Anthropol,* **21**, 205–13
——, 1963b. Age variation of formation stages for ten permanent teeth, *J Dental Res,* **42**(6), 1490–1502
Morris, C, 1982 Aspects of Anglo-Saxon and Anglo-Scandinavian Lathe Turning, in S McGrail (ed) *Woodworking Techniques Before AD 1500, BAR Int Ser* **129**, 245–261
Mortimer, C, 1990 *Some aspects of early medieval copper-alloy technology, as illustrated by a study of the Anglian cruciform brooch*, unpub DPhil thesis, Oxford Univ
——, 1991 A descriptive classification of early Anglo-Saxon copper-alloy compositions; towards a general typology of early medieval copper alloys, *Medieval Archaeol,* **35**, 104–107
——, 1996 *Compositional and structural analysis of glass beads from Mucking Anglo-Saxon Cemeteries, Essex*. AML Report 60/96
——, forthcoming, *Compositional and structural analysis of glass beads from Barrington Anglo-Saxon Cemetery, Cambridgeshire*. AML Report series
Mortimer, C, & Anheuser K, 1996 *Analysis of non-ferrous metal artefacts from Barrington (Edix Hill) Anglo-Saxon cemetery, Cambridgeshire*. AML Report 66/96
Mortimer, C, & Stoney, M, 1996 *Decorative punchmarks on non-ferrous artefacts from Barrington Edix Hill Anglo-Saxon Cemetery, 1987–91, Cambridgeshire*. AML Report 62/96
Murphy, P, & French, C, 1997 in Malim T *et al* New Evidence on the Cambridgeshire Dykes and Worstead Street Roman Road. *Proc Cambridge Antiq Soc*, **85**, 78–95
Myres, J N L, & Green, B, 1973 *The Anglo-Saxon cemeteries of Caistor-by-Norwich and Markshall*, *Norfolk*, *Rep Res Comm Soc Antiq London*, **30**. London
——, 1977 *A corpus of Anglo-Saxon pottery of the pagan period*, 1 and 2. Cambridge: Cambridge University Press
——, 1978 Amulets or small change?, *Antiq J,* **58**, 352
Neuffer-Müller, C & Ament, H, 1973 *Das fränkische Gräberfeld von Rübenach*. Gebr Mann, Berlin: Germanische Denkmäler der Völkerwanderungszeit Ser B, Bd 7
Neville, R C, 1852 *Saxon obsequies*. London: John Murray
——, 1854 Anglo-Saxon cemetery on Linton Heath, Cambridgeshire, *Archaeol J,* **11**, 95–115
Nockert, M, 1991 *The Högom find and other Migration Period textiles and costumes in Scandinavia*. University of Umeå Dept of Archaeology
Nordbladh, J, & Yates, T, 1990 This perfect body, this virgin text: between sex and gender in archaeology, in I Bapty & T Yates (eds), *Archaeology after structuralism*, 222–37. London: Routledge
Ortner, D J, & Putschar, W G J, 1985 *Identification of pathological conditions in human skeletal remains,* Smithsonian Contributions to Anthropology **28**. Washington & London: Smithsonian Institution Press
Ossenberg, N S, 1969 *Discontinuous morphological variation in the human cranium*. unpubl PhD thesis, Dept of Anthropology, Univ Toronto
Owen-Crocker, G R, 1986 *Dress in Anglo-Saxon England*. Manchester*:* Manchester University Press
Pader, E-J, 1982 *Symbolism, social relations and the interpretation of mortuary remains, BAR Brit Ser*, **82**. Oxford
Palm, M, & Pind, J, 1992 Anglian English women's graves in the 5th to 7th centuries AD – a chronological analysis, in L Jørgensen (ed), *Chronological Studies*. Inst Prehistoric and Classical Archaeology, Univ Copenhagen: Arkæologiske Skrifter **5**, 50–80
Park, E A, & Richter, C P, 1953 Transverse lines in bone, the mechanism of their development, *Bulletin of Johns Hopkins Hospital,* **41**, 364–88
Parker, S, Roberts, C, & Manchester, K, 1986 A review of British trepanations with reports on two new cases, *Ossa,* **12**, 141–57
Paulsen, P, 1992 *Die Holzfunde aus dem Gräberfeld bei Oberflacht und ihre kulturhistorische Bedeutung*. Stuttgart: Theiss. Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg **41/2**.
Phenice, T W, 1969 A newly developed visual method of sexing the *os pubis*, *American J Phys Anthropol,* **30(2)**, 297–301
Phillips, C W, 1935 A re-examination of the Therfield Heath long barrow, Royston, Herts, *Proc Prehist Soc,* **1**, 101–7
Pick, T P, & Howden, R, (eds) 1988 (American edn from 15th English edn), *Gray's Anatomy* (*Anatomy, descriptive and surgical*). Leicester: Galley Press
Pindborg, J S, 1970 *Pathology of the dental hard tissues*. Copehagen: Munksgaard
Pollard, J, 1996 *Excavations at Bourn Bridge, Pampisford, Cambridgeshire: Part 2, Roman and Saxon*. Cambridge Archaeological Unit Report, **165**

Powers, R, & Brothwell, D R, 1988 Human bones – inhumations. In V I Evison, *An Anglo-Saxon cemetery at Alton, Hampshire*, 59–64. Hampshire Field Club and Archaeological Society: Monograph **4**

Powers, R, & Cullen, R, 1987 The human skeletal remains, in Evison 1987, 197–201

Putnam, G, 1978 The skeletal remains, in Excavations of a Belgic and Romano-British farm with middle Saxon cemetery and churches at Nazeingbury, Essex, *Essex Archaeol Hist,* **10**, 29–117

Ramqvist, P H, 1992 *Högom 1. The excavations 1949–84* Archaeology and Environment 13. Dept Archaeology, Univ of Umeå, Riksantikvarieambetet and the Dept Pre- and Protohistory, Univ Kiel. Neuminster

RCHM 1968 *West Cambridgeshire*, County of Cambridge, Volume **1**, 5. Royal Commission on Historical Monuments, England

Reaney, P H, 1943 *The Place-Names of Cambridgeshire and the Isle of Ely*, *English Place-Name Society,* **19**. Cambridge: Cambridge, University Press

Reichstein, J, 1975 *Die kreuzförmige Fibel*. Karl Wachholtz, Neumünster: Offa-Bücher, NF **34**

Reiß, R, 1994 *Der merowingerzeitliche Reihengräberfriedhof von Westheim (Kreis Weißenburg-Gunzenhausen)*, Germanisches Nationalmuseum, Nürnberg: Wissenschaftliche Beibände zum Anzeiger des Germanischen Nationalmuseums, **10**

Resnick, D, & Niwayama, G, 1988 *Diagnosis of bone and joint disorders*. Philadelphia: W B Saunders

Riddler, I, forthcoming The antler waste, to appear in R J Williams, P J Hart, & A T L Williams, *Wavendon Gate*, Buckingham Archaeol Soc, Aylesbury: Monographs **10**

Roberts, C, 1991 Trauma and treatment in the British Isles in the historic period: a design for multidisciplinary research, in D J Ortner & A C Aufderheide (eds), *Human paleopathology. Current syntheses and future options*, 225–48. Washington, DC: Smithsonian Institution

——, nd *Trauma.* Notes for palaeopathology course of Bradford University/ Smithsonian Institution, Bradford, March-April 1988

Roberts, C & Manchester, K, 1995 *The archaeology of disease*, 2nd edn. Ithaca, NY: Alan Sutton Publishing/Cornell University Press

Rogers, J & Waldron, T, 1995 *A field guide to joint disease in archaeology*. New York: John Wiley & Sons

Rogers, J, Waldron, T, Dieppe, P, & Watt, I, 1987 Arthropathies in palaeopathology: the basis of classification according to most probable cause, *J Archaeol Science,* **14**, 179–193

Rose, J C, Condon, K W, & Goodman, A H, 1985 Diet and dentition: developmental disturbances, in R Gilbert & J Mielke (eds), *The analysis of prehistoric diets*, 281–305. New York: Academic Press

Ross, S, 1991 *Dress Pins from Anglo-Saxon England: their production and typo-chronological development*, unpubl DPhil thesis, Oxford Univ

Roth, H, & Theune, C, 1988 *SW ♀ I–V: Zur Chronologie merowingerzeitlicher Frauengräber in Südwestdeutschland*. Landesdenkmalamt Baden-Württemburg, Stuttgart: Archäologische Informationen aus Baden-Württemburg **6**

Saggau, H E, 1981/85 *Bordesholm. Der Urnenfriedhof am Brautberg bei Bordesholm in Holstein*. 2 vols. Karl Wachholtz, Neumünster: Offa-Bücher, NF **48** and **60**

Salter, S, & Crew, P 1997 High phosphorus steel from experimentally smelted bog-iron ore in Crew, P, & Crew, S, (eds.) Early iron working in Europe, archaeology and experiment, Plas TAN y BWLCH, 1997. Snowdonia National Park

Salzman, L F, (ed) 1938 *The Victoria History of Cambridge and the Isle of Ely: Volume* **1**. Oxford: Oxford University Press

Sampedro, C, 1992 *The prevalence of the preauricular sulcus in the Anglo-Saxon populations from Barrington and Raunds: a new approach*, unpubl MSc dissertation, Univ Bradford

Saunders, S R, 1989 in M Y Iscan & K A R Kennedy (eds), *Reconstruction of life from the skeleton*, 95–108. New York: A R Liss

Schiek, S, 1992 *Das Gräberfeld der Merowingerzeit bei Oberflacht*, Stuttgart: Theiss. Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg **41/1**

Scull, C, 1990 Scales and weights in Early Anglo-Saxon England, *Archaeol J,* **147**, 183–215

Shephard, J, 1979 The identity of the individual in isolated barrows and barrow cemeteries in Anglo-Saxon England, in B Burnham & J Kingsbury (eds), *Space, Hierarchy and Society*, *BAR, Intl Series*, **59**, 47–79, Oxford

Sherlock, S J, & Welch, M G, 1992 *An Anglo-Saxon Cemetery at Norton, Cleveland*, CBA Res Rep, **82**, London

Siegmund, F, 1989 *Fränkische Funde vom deutschen Niederrhein und der nördlichen Kölner Bucht* Phil Diss Cologne.

Smith, C R, 1868 *Collectanea Antiqua*, **6** 'Printed for the subscribers only; and not published'.

Smith, R A, 1923 *A Guide to the Anglo-Saxon and Foreign Tuetonic Antiquities in the Department of British and Medieval Antiquities, British Museum*. London: British Museum

Speake, G, 1989 *A Saxon Bed-Burial on Swallowcliffe Down*, English Heritage Archaeol Rep, **10**, London

Steele, D G, & Bramblett C A, 1988 *The anatomy and biology of the human skeleton.* College Station, Texas: Texas A & M University Press

Steinbock, R T, 1976 *Palaeopathological diagnosis and interpretation*. Springfield, Ill: Charles C Thomas

Steuer, H, 1982 Schusselpaare in fruhgeschichtlichen Grabern: zur Deutung einer Amulett-Beigabe, *Studien zur sachsenforschung* **3,** 185–247

Stewart, T D, 1979 *Essentials of forensic anthropology*. Springfield, Illinois: Charles C Thomas

Stirland, A, 1991 Diagnosis of occupationally related paleopathology, in D J Ortner & A C Aufderheid (eds), *Human paleopathology. Current syntheses and future options*, 40–7. Washington and London: Smithsonian Institution Press

——, 1992 *Asymmetry and activity-related changes in the lower limb of certain human males*, unpubl PhD thesis, Inst Archaeology, Univ College London

Stockwell, E G, 1993 Infant mortality, in F Kiple (ed), *The Cambridge world history of human disease*, 224–30. Cambridge: Cambridge University Press

Stuart-Macadam, P, 1982 *A correlative study of a palaeopathology of the skull*, unpubl PhD thesis, Univ Cambridge

——, 1989a Nutritional deficiency diseases: a survey of scurvy, rickets, and iron-deficiency anemia, in M Y Iscan & K A R Kennedy (eds), *Reconstruction of life from the skeleton*, 210–22. New York: A R Liss

——, 1989b Porotic hyperostosis: relationship between orbital and vault lesions, *American J Phys Anthropol,* **80**, 187–193

Suchey, J M, Wiseley, D V, & Katz, D, 1979 Analysis of dorsal pitting in the os pubis in an extensive sample of modern American females, *American J Phys Anthropol,* **51**, 517–40

Swanton, M J, 1973 *The Spearheads of the Anglo-Saxon Settlements*. London: Royal Archaeological Institute

——, 1974 *A corpus of pagan Anglo-Saxon spear types*, *BAR*, **7**, Oxford

Taylor, A, Malim, T, & Evans, C, 1995 Fieldwork in Cambridgeshire: October 1993-September 1994 – Little Linton, *Proc Cambridge Antiq Soc,* **83**, 169.

Taylor, C, 1973 *The Cambridgeshire Landscape*. London: Hodder and Stoughton

Trotter, M, 1970 Estimation of stature from intact limb bones, in T D Stewart (ed), *Personal identification in mass disasters*, 71–83. Washington, DC: Smithsonian Institution

Turkel, S J, 1989 Congenital abnormalities in skeletal populations, in M Y Iscan & K A R Kennedy (eds), *Reconstruction of life from the skeleton,* 109–27. New York: A R Liss

Tylecote, R & Gilmour B, 1986 *The Metallurgy of Early Ferrous Edged Tools and Edge Weapons, BAR Brit Ser*, **155**. Oxford

Ubelaker, D H, 1989 *Human skeletal remains: excavation, analysis, interpretation*. (Manuals on Archaeology 2). Washington: Taraxacum for Smithsonian Institution

Vierck, H, 1977 Zur relativen und absoluten Chronologie der anglischen Grabfunde in England, in G Kossack & J Reichstein (eds), *Archäologische Beiträge zur Chronologie der Völkerwanderungszeit,* 42–52, Habelt, Bonn

von Endt, D W, & Ortner, D J, 1984 Experimental effects of bone size and temperature on bone diagenesis, *J Archaeol Sci,* **11**, 247–53

Wakely, J, & Duhig, C, 1991 A comparative microscopical study of three European trephined skulls, *J Paleopathol,* **3(2)**, 75–87

Waldron, T, 1985 DISH at Merton Priory; evidence for a 'new' occupational disease? *Brit Med J*, **291**, 1762–3

——, 1989 The effects of urbanisation on human health: the evidence from human remains, in D Serjeantson & T Waldron (eds), *Diet and crafts in towns. The evidence of animal remains from the Roman to the post-medieval periods*, *BAR Brit Ser*, **199**, 55–73. Oxford

——, 1991 Variations in the rates of spondylolysis in early populations, *Int J Osteoarchaeol*, **1(1)**, 63–5

——, 1994a *Counting the dead. The epidemiology of skeletal populations*. New York: John Wiley and Sons

——, 1994b The human remains, in V I Evison, *An Anglo-Saxon cemetery at Great Chesterford, Essex*, 52–66, CBA Res Rep **91**, York

——, 1995 Changes in the distribution of osteoarthritis over historical time, *Int J Osteoarchaeol,* **5(4)**, 385–9

——, nd *The human remains from Headley Drive*, unpubl report

Walton, P, 1992 Textile remains in S T Sherlock & M G Welch, *An Anglo-Saxon cemetery at Norton, Cleveland,* CBA Research Report **82**

Watson, J, 1988 The identification of organic maerials preserved by metal corrosion products in S Olsen (ed) *The Use of the Scanning Electron Microscope in Archaeology*, *BAR Int Ser*, **452**, 65–76

——, 1994 Wood usage in Anglo-Saxon shields, *Anglo-Saxon Stud in Archaeol Hist*, **7**, 35–48

——, forthcoming *Organic material associated with metalwork from the Anglo-Saxon cemetery at Barrington, Cambridgeshire*. Ancient Monuments Laboratory Report series

Watson, J, & Edwards G, 1990 Conservation of material from Anglo-Saxon cemeteries, in E Southworth (ed) *Anglo-Saxon Cemeteries: A Reappraisal*, 97–106

Webster, L, & Backhouse, J, 1991 *The Making of England: Anglo-Saxon Art and Culture AD 600–900*. London: British Museum

Weimer, K, 1993 *Early British iron edged tools: a metallurgical survey*. Univ of Cambridge, unpubl PhD thesis

Weiss, K M, 1973 Demographic Models for

Anthropology, *Memoirs Soc American Anthropol,* **27**
Wells, C, 1962 A possible case of leprosy from a Saxon cemetery at Beckford, *Med Hist,* **6**, 383
——, 1974 Probable trepanation of five early Anglo-Saxon skulls, *Antiquity,* **48**, 298–300
——, 1980 The human bones, in P Wade-Martins, *Excavations in North Elmham Park 1967–1972*, 247–374, *E Anglian Archaeol Rep*, **9**, Norwich
——, 1985 Pathology, in A M Cook & M W Dacre (eds), *Excavations at Portway, Andover 1973–1975. Anglo-Saxon cemetery, Bronze Age barrow and linear ditch*, 63–5, Oxford Univ Comm Archaeol Monogr, **4**
Wenham, S J, 1989 Anatomical interpretation of Anglo-Saxon weapon injuries, in S C Hawkes (ed), *Weapons and warfare in Anglo-Saxon England*, 123–39, Oxford Univ Comm Archaeol Monogr, **21**, Oxford
Werner, J, 1935 *Münzdatierte austrasische Grabfunde*. De Gruyter, Berlin and Leipzig: Germanische Denkmäler der Völkerwanderungszeit, Bd 3
West, S (E), 1969 The Anglo-Saxon village of West Stow: an interim report of the excavations 1965–8, *Medieval Archaeol,* **13**, 1–20
——, 1985 *West Stow: the Anglo-Saxon village*, 1 and 2, *E Anglian Archaeol Rep*, **24**. Ipswich
——, 1988 *The Anglo-Saxon Cemetery at Westgarth Gardens, Bury St Edmunds, Suffolk: Catalogue*, *E Anglian Archaeol Rep*, **38**, Bury St Edmunds
White, R H, 1988 *Roman and Celtic objects from Anglo-Saxon Graves*, *BAR, Brit Ser,* **191**, Oxford
Widdowson, E M, (ed) no date *Cam or Rhee*. Cambridge: Sindall
Wiggins, R, Boylston, A, & Roberts C, in prep Human skeletal remains, in G Drinkall & M Foreman, *The Anglo-Saxon cemetery at Castledyke South, Barton-on-Humber*
Wild, J P, 1970 *Textile Manufacture in the North Roman Provinces*. Cambridge: Cambridge University Press
Wilkes 1978 *The Victoria History of the County of Cambridge and the Isle of Ely Vol 7* Oxford: Oxford University Press
Willroth, K-H, 1992 *Untersuchungen zur Besiedlungsgeschichte der Landschaften Angeln und Schwansen von der älteren Bronzezeit bis zum frühen Mittelalter*. Karl Wachholtz, Neumünster: Offa-Bücher, N F **72**
Wilson, D M, 1956 The initial excavation of an Anglo-Saxon cemetery at Melbourn, Cambridgeshire, *Proc Cambridge Antiq Soc,* **49**, 29–41
Wright, A P M, 1973 Barrington, in C R Elrington (ed), *The Victoria History of the County of Cambridge and the Isle of Ely*, **5**, 147–60. Oxford: Oxford University Press
Zeller, G, 1992 *Die fränkische Altertümer des nördlichen Rheinhessen*. 2 vols. Franz Steiner, Stuttgart: Germanische Denkmäler der Völkerwanderungszeit Serie B, Band 15
Zivanovič, S, 1982 *Ancient diseases*. London: Methuen

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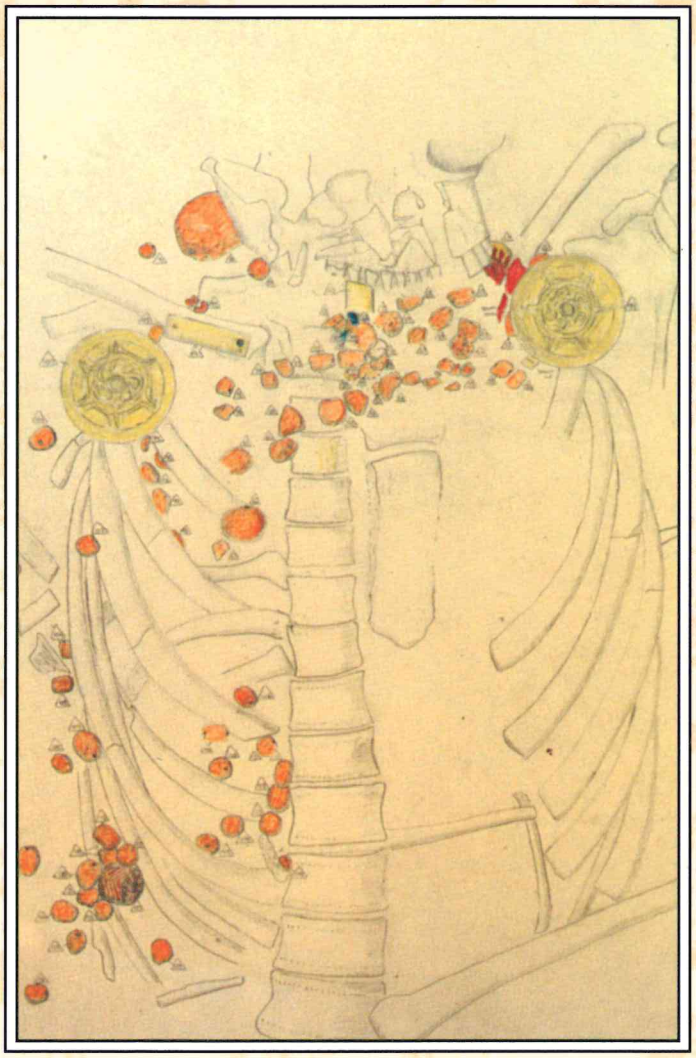
Illustrations are indicated by page numbers in *italics*. The following abbreviations have been used in this index: C – century; f – following.

THE ANGLO-SAXON CEMETERY AT EDIX HILL (BARRINGTON A), CAMBRIDGESHIRE

Barrington has been a familiar name in Anglo-Saxon archaeology since the discovery of its cemeteries in the 19th century. In 1987 the site of Barrington A (Edix Hill) was rediscovered by a metal-detector user. Approximately 50% of the cemetery was investigated as part of the ensuing excavations which recovered skeletal remains of 149 individuals buried in 115 graves from a burial ground which had been used over 150 years during the 6th and 7th centuries. The community appears to have been neither especially rich nor poor, and it is this apparent normality that makes the cemetery population a particularly interesting one to study. Costume groups suggest a community of mixed cultural affinities. In the 7th century a few high status individuals were more evident, including the occupants of two rare 'bed-burials'. The human bone was exceptionally well preserved and has allowed a detailed study of the population buried at Edix Hill to be undertaken.

Standard analysis of sex, age and stature has revealed equal numbers of women and men, some living to more than 45 years of age, with children and adolescents also represented. They were a relatively healthy and robust community, but cases of cancer and leprosy can be identified, as well as battle wounds. The combination of several sets of data suggests that links can be drawn between related individuals within the cemetery.



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