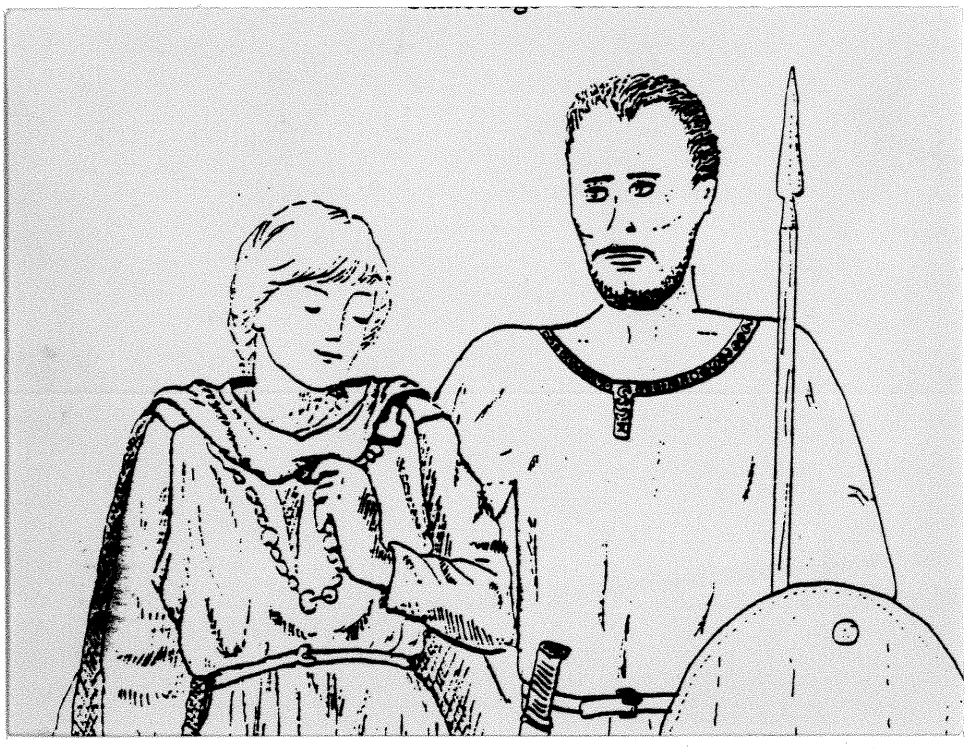
Anglo-Saxon Burials
Haddenham 1990



Cambridgeshire
County Council

Rural Strategy

ANGLO-SAXON BURIALS
THE THREE KINGS, HADDENHAM 1990

TL46487547

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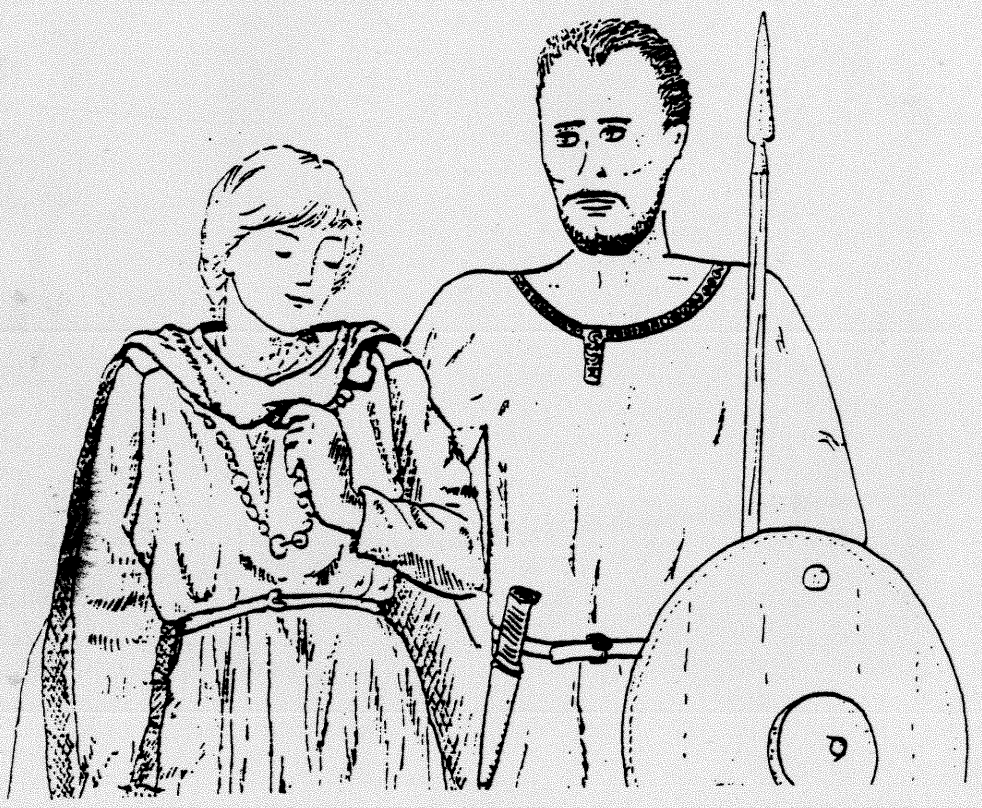

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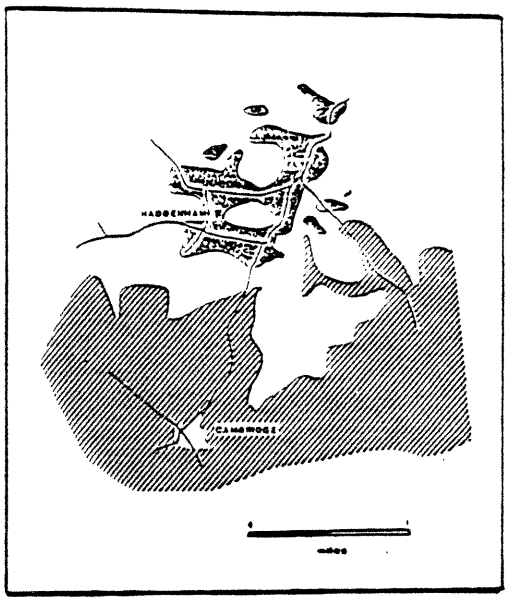
LOCATION PLAN



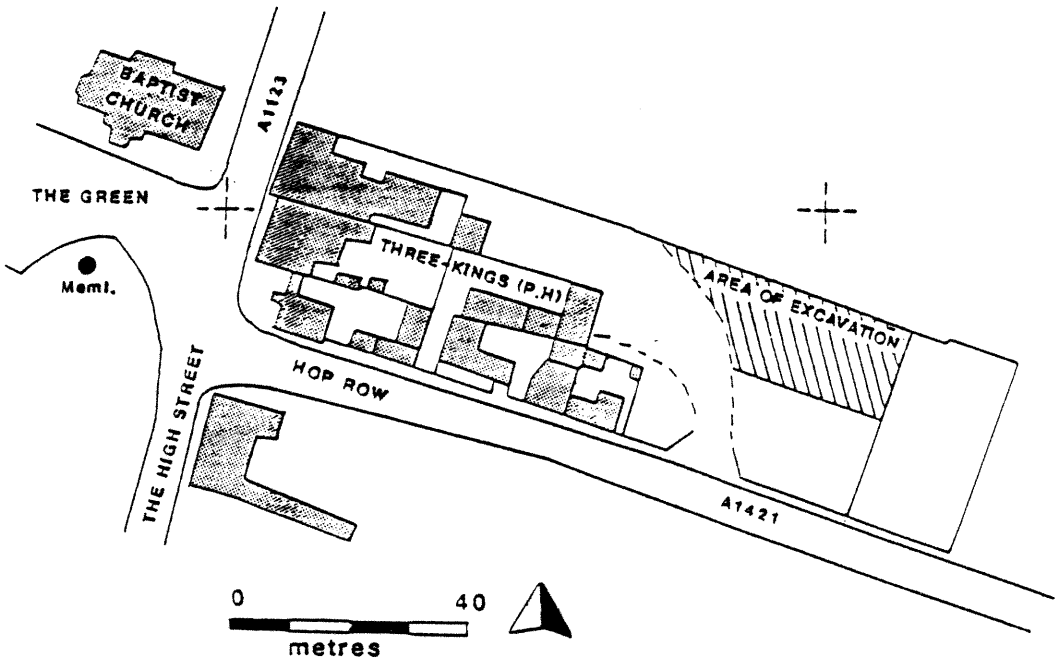
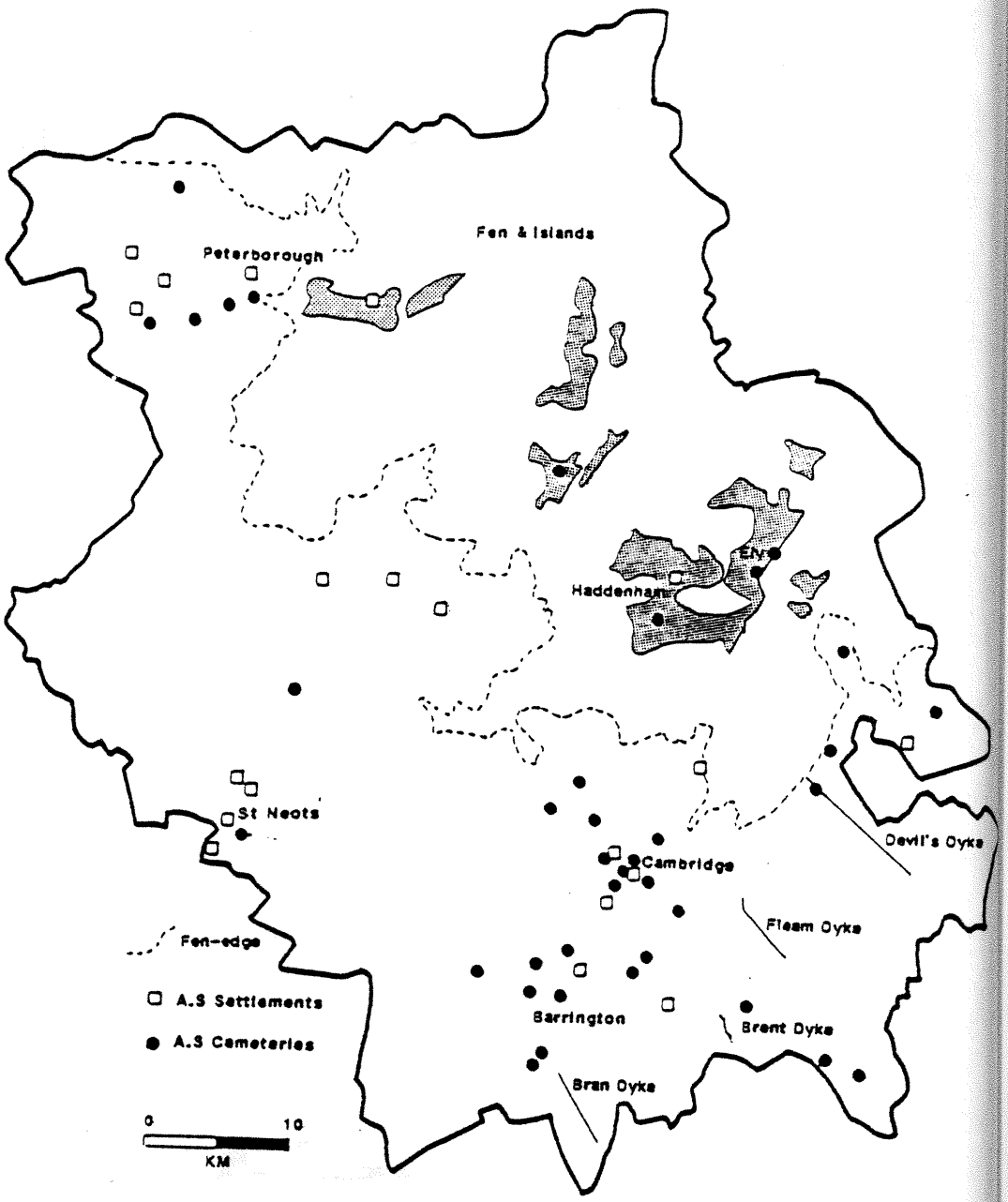


Fig.1



Distribution of Anglo-Saxon Settlements & Cemeteries in Cambridgeshire

Anglo-Saxon Burials at The Three Kings, Haddenham

SUMMARY

An Anglo-Saxon male and female burial with grave-goods, and fragments of nine other skeletons were excavated in the car park of the Three Kings, Haddenham. The excavation was undertaken and financed by the Cambridgeshire County Council Archaeology Section. In response to the discovery of remains noted in the foundation trench of a proposed function hall (Fig.1) by the proprietor, W. Presnell.

The foundation trench had been levelled to the natural Greensand into which a number of features were cut. The features consisted of a series of modern pits containing human and animal bone, an east-west running ditch and Anglo-Saxon burials (Fig.2).

BACKGROUND

The Haddenham ridge seven miles south-west of Ely, rises to 37 metres above sea level. It is composed of Kimmeridge clay capped by a band of Lower Greensand. The site in question lies on the ridge in the centre of Haddenham village at the junction of the A1123 and A1421 (Fig.1). The ridge is a prominent feature of the Isle of Ely and must have been more so when the surrounding lowlands were waterlogged and the ridge provided a focus for Aldreth causeway for anyone crossing from the south and west.

Recent excavations in Haddenham parish by Cambridge University have provided evidence for continual occupation from the Bronze Age to Roman period. In 1969, excavations at Hinton Hall, Haddenham, produced evidence of Saxo-Norman occupation. However, high water levels prevented further investigation below tenth century levels.

A general paucity of Saxon objects from Haddenham and the surrounding area does not give the impression of there ever being a settlement. A significant exception is Ovin's Cross which until the 18th century was situated opposite the 13th century church. It is now in Ely Cathedral. This is a commemorative stone to Etheldreda's steward who died in 676 and bears the inscription:

"O God, Grant Thy Light and Rest to Ovin. Amen".

This memorial could have been placed in the centre of a contemporary settlement or alternatively at a prominent position on a thoroughfare.

In more recent years the site has been used as a farmyard, allowing an accumulation of rich soil widely acclaimed as producing the best potatoes for miles around.

EXCAVATION STRATEGY

A single trench [40x15m] for the foundations of a function hall had been excavated by the developer (Fig.1). A mechanical digger removed up to a metre of rich, dark topsoil down to the natural Greensand. It was into this that the graves and features were cut. The fill of which was dark and clearly visible.

The landlord, upon discovery, had covered the double burial and surrounding site with a protective layer of rubble. This then had to be removed using a mechanical digger.

The area was then shovel scraped and the features cleaned, recorded and excavated.

THE RESULTS

A number of features were found cut into the natural Greensand. These included a series of modern pits containing an assortment of animal/human bones, and the remains of eleven individuals.

THE BURIALS

The burials, evenly spaced in a line aligned north-south, were concentrated in the south-eastern corner of the site. Some of each burial went into the west facing section (Fig.2), suggesting that burials would continue to the east, in the neighbouring garden.

Orientation of the few burials excavated showed all but one aligned west/east, facing east. The exception was that of Burial 2 which was south-east/north-west. All were supine and extended and cut into the greensand.

The best preserved burial was a double grave (3/4), of a man and woman in a shallow scoop in the greensand (Fig.3). Both had their heads raised on "pillows" of sand. The female's (4) head was unfortunately broken by the JCB during the initial work of the developer.

The remaining burials all had been badly disturbed by a pits (F1,F9) in the bottom of which was a heavy scatter of human and animal bones representing seven individuals (Fig.4).

Preservation and the general condition of the bones was excellent. A skeletal study by Corinne Duhig (Appx.A) found all to have been healthy individuals with the exception of burial 3. This individual suffered from extreme pathological features of the spine, which would have resulted in a numbness and pain down the sciatic nerve during or after exercise.

BURIAL	SEX	AGE	HEIGHT	ORIENTATION	COMMENTS
1a	Female	Adult	5'		from F1
1b	Male	20-22	?		from F1
1c	Male	22+	?		from F1
2	Female	Adult	5'3"	SE-NW	5b is part of 2
3	Male	45+	5'11"	W-E	double burial
4	Female	18-20	5'2"	W-E	double burial
5a	Male	18	?		from F1;part of 7
5b	Female	Adult	?		from F1;part of 2
5c	?	7	?		from F1
6	?	6-12	?	W-E	
7	Male	18	5'	W-E	5a is part of 7
8	Female	7-12	?		spoil heap
9	Female		?		spoil heap

TOTAL NO. OF INDIVIDUALS: 11

Table 1.

BURIAL 2 An adult female on the northern side of the ditch, F8, was in a very poor state of completeness. Having been disturbed by a pit F1 (Fig.3) only the lower legs remained in situ. In the general assortment of bones (5) in F1 were several diagnostic pieces that could be attributed to burial 2.

DOUBLE BURIAL 3/4 This was the only undisturbed burial to have been excavated. It contained two almost complete skeletons of a 45+ year old robust man (3) and a slight 18 year old woman (4) (Fig.3).

The male had been laid on a "bed" of flat stones, with his legs crossed and his right arm across his stomach. He had a small iron knife in his right hand; a buckle, small iron knife and circular lead object (Fig.6) were by his right hip and a iron ferrule at his feet. Prior to the excavation a shield boss, spearhead and a broken pair of tweezers (Fig.7) were removed.

The female had her legs crossed at the knees and her right arm placed across her chest. She had a single necklace of amber beads, one of which had a pink pigment. Three sets of small silvered glass beads were found at either end of the amber beads (Fig.8). A badly cast small long brooch found beneath her left clavicle had traces of some unknown organic on the underside. A bone spindle whorl above her left shoulder had traces of the wooden plug and packing remaining. Beneath the skull was a fragment of a bone comb. Parts of a broken chatelaine lay between the burials.

It is likely that the woman was the wife of (3) rather than his daughter as she lacks any of the hereditory characteristics suffered by the male (Appx.A).

BURIAL 6 A child between the ages of 6-12 years. It had been disturbed by the pit, F9, resulting in the loss of almost the entire upper torso (Fig.4) and left femur. The lower half went into the east section, beneath the neighbour's garden. The remaining femur was removed while the lower legs and feet were left in situ.

BURIAL 7 An adult male, approximately 18 years old, was found on the southern side of the pit (F1). The pit appears to have had cut the burial leaving only a lower right leg and foot in situ (Fig.4). From F1 substantial portions of the individual were identified from amongst the jumble of bones (5).

SPOIL HEAP A large amount of bone fragments were recovered from the spoil heap from which two further individuals were identified (8/9). Several pieces of skull were found which enabled the skull of (4) to be largely reconstructed.

DITCH F8 A ditch [Fig.2] just over a metre wide, running west/east cut into the greensand is bordered to its south by a narrow ridge of Kimmeridge clay. Filled with a dark organic brown sandy silt it was very shallow, between 15-20cms deep. To the west it continues beneath the modern carpark. Its course to the east was less certain, the area having been excavated by machine prior to the archaeological survey. A sub-rectangular pit (F1) showing in the west facing section was in line with the ditch and could indeed be part of it, athough it was notably deeper with a greater concentration of human bone.

PITS [F1,F9] Feature F1 was a large sub-rectangular pit, 1.4m wide (Fig.5). Cut from just below the topsoil it was filled by a light-mid-brown silty sand. In its base were two scatters of human and animal bone (1,5) representing the reinterred bones of burials (1a,1b,1c,2,6,7 & 5c) (Table 1), amongst which was a large decorated glass bead (Fig.8).

At the west end cut into the greensand were three shallow depressions [Fig.2], in one of which was a cow's jaw. To its north the pit was cut by another, F9. Similarly, F9 was cut from just below the topsoil, 1.2m wide, and was filled by a light-grey silty clay.

Three rectangular pits were found in the centre of the site containing large quantities of animal bone, mainly pig and cow. These must relate to the period when the site was used as a small holding, earlier this century.

CONCLUSION

The burials at the Three Kings, Haddenham, would seem to indicate a cemetery extending eastwards and possibly southwards, situated in a prominent positon on the Haddenham ridge. It provides the first tangible evidence of Saxon activity in the area and would support the supposition of there being a contemporary settlement somewhere in the parish.

The skeletons were in excellent condition, being protected by a metre of grassed topsoil.

ACKNOWLEDGEMENTS

We should like to thank Mr W. Presnell, the Landlord, for permission to excavate on his land, and excellant hospitality. Since the excavation, he has generously agreed to donate the finds to Haddenham Farm Life Museum.

The work was funded from the Cambridge County Council's Rural Management division, Vulnerable Sites Fund.

Ours thanks also to all the villagers of Haddenham who took an active interest in the site.

In addition the Institute of Archaeology, London, for completing the conservation work on the artifacts and Corrine Duhig, Cambridge University, for the bone analysis.

THE FINDS
by
Alison Taylor

GRAVE 3/4 (double burial)

4. MALE SKELETON

THE SPEAR

Iron
Swanton type H2. Blade length 14cms
Overall length 28cms minimum (broken)
The iron ferrule would have fitted the far-end of the spear.
Appproximate date 6th century, probably before 550 AD.

It was the right and duty of every free-born Anglo-Saxon adult male to carry a spear and it is common to find them in graves of the pagan Saxon period often in the position in which they would be carried. They are all made of iron and nearly all have cleft hafts, which made them easy to fix to shafts and to mend but gave them less strength than a close-welded socket. They were therefore useful thrusting weapons but could not be used for side-blows.

Spear heads vary in length from about 15-50 cms. Common shapes are leaf-shaped, angular and ogival (this example). The proportions of shaft and head also vary, and the various types have been categorised by M G Swanton (1974) on the basis of shape and shaft/head proportions.

Hafts of spears are described in Anglo-Saxon poetry as "ash", and "aesc" was often used as the word for spear. Some archaeological examples bear this out, but others have been shown to use other woods. The overall length of spears can occasionally be calculated, if the head and ferrule are both found undisturbed, though there is still the suspicion that spears might have been broken to fit the graves. In general, they seem to be the height, or slightly taller than their owners, although examples of 5th century date, found intact in a bog at Nydam, Holland were much longer, ranging from 2.52 -3.54 m.

Spears would be a practical hunting weapon and are also well-documented in literature as a weapon in battle. Descriptions of their use in Icelandic sagas (which date to the 10th century but describe similar society and technology), show that they were a lethal weapon that could pierce a shield if thrown by a strong enough man, and were used both for throwing and thrusting. They would also stick in a shield and trail on the ground, seriously inconveniencing the enemy. On the other hand, if thrown they were easy to throw back and their hafts were easily cut or broken (for example, in Njal's saga, "then Holmstein Spark-Bersason hurled a spear at Kari, but Kari caught it in mid-air and returned it, killing a man in Flosi's following") and so do not seem very suitable as the sole weapon. However, it is only rare graves that have more than one spear or another weapon such as a sword, axe, or dagger. More surprisingly, arrows are almost unknown, although they are commonly mentioned in literature and would seem a more effective weapon in any sustained conflict. Perhaps it was the symbolism of the spear in relation to a man's status that made it so overwhelmingly popular as a grave good.

The Haddenham spear, classified as H-2, is a commmon type that developed in Germany and was popular in much of Britain in the early 6th century (pre-550AD) although it is occasionally found in slightly later graves.

THE SHIELD-BOSS

Iron
Height : 8cm
Diameter : 18cm
Dickinson, Gp 3, Low convex dome, straight sides, disc top
No surviving shield grip, 5 rivets
Date : 6th century

The central iron bosses which protected warriors' hands are normally all that remain of Anglo-Saxon shields, although sometimes decorative metal rivets and other fitments occur. A shield appears to be a little more of a luxury than a spear and is not quite so commonly found.

Shield-bosses developed in form from low, wide shapes to taller , narrower ones. This shield-boss is taller and narrower than the earlier groups 1 and 2. On the Continent they were used by the Franks in the date range 480 - 520 AD. One spectacular grave containing such a shield was excavated in Cologne Cathedral, dated AD 537 by dendrochronology. In England, they are commonly found in Kentish graves, the earliest of which is dated to c.520. They are found throughout south-eastern England where they may continue right through to the 7th century although earlier dates are more used. Several examples have been found with H2 spears, as in this case(Welch 1983). In some cases, iron work has mineralised traces of the shield's wood where they have been in contact and close examination of such shield-bosses suggests (though not conclusively) that shields were made of planks secured by cross-pieces(Harke 1981). Traces of wood on the Haddenham example have been noticed and may be identifiable. The wood used is said to be lime (in Beowulf "linden" is a poetic word for shield), and this agrees with an identification at Spong Hill. Overall diameters of these shields has been calculated for different examples between 33.7 - 76.5 cms, a very broad range. Probably most were about 60 cms (Welch 1983). The boards would be covered with leather, of which traces have occasionally been found. Such armour should have been effective against most weapons apart from an axe, and the Anglo-Saxon "shield-wall" played a part in many a battle.

THE KNIFE

Iron
Length 13 cms Blade 10 cms
Type : Hawkes D, Evison 2, Straight back, curved blade
Date : 5th or 6th century

Knives are much the most common Anglo-Saxon grave-good, found with nearly half the burials, including those of children. Sizes vary from 4.5 - 17.3 cms, with larger knives all belonging to adult males. Their shapes vary to some extent with date (Welch 1983).
Very large examples may have been used as weapons, but generally these knives are simply essential all-purpose tools and eating utensils. Their handles would by horn, bone, or wood and they were worn in the belt, presumably in a sheath especially as they are sometimes found point upwards.

They were one possession even slaves owned. In Njal's Saga, Melkof, a slave, leaves his knife and belt behind after a murder and is later identified by it.

THE TWEEZERS

Copper alloy
Length : 6.5 cms
Made in one piece
decorated by 4 parallel lines near the top.
Only one blade survives.

It is not certain which grave the tweezers belonged to, but it has been assigned to the male as they are usually (but not always) found with male burials, generally in graves that also

have weapons.

Most Anglo-Saxon grave-goods are very personal items and therefore tweezers probably indicate care over an individual's toilet rather than something functional, such as removers of thorns or splinters. The most likely use is to pluck hairs from the face.

THE BUCKLE

Iron
Length : 3 cms

This was identified by x-ray of a lump of iron. It is a common 6th century form of belt-buckle.

3. FEMALE SKELETON

THE BROOCH

Copper alloy
Length : 8 cms
Date : 6th century, probably first half
Square-headed small-long brooch, with shovel foot
simple decoration of incised parallel lines

Anglo-Saxon women wore tunic-style dresses that were not always stitched at the shoulders but instead were fastened with pairs of brooches, sometimes linked by a chain of beads. Style varied with means and quite often there are no brooches even where there are beads, or there might, as in this case, be only one brooch. Small-long brooches are sometimes described as "the poor woman's square-headed brooch", referring to the much larger more ornate (often gilded) brooches that are found in richer graves. Small-longs could be easily cast in one piece and were very widely traded, especially in the Anglian regions of Eastern England. This particular example is badly cast. It is a very common 6th century form which unfortunately cannot be tied down more tightly within that century. Most of the early brooches of this type, however were found in South Cambridgeshire (Leeds 1945) and so it could easily date quite early in that century, especially as M G Welch (Welch 1983) considers all brooches of this design, which is adapted from late 5th century German brooches, to belong to the first half of the 6th century. Mineralised organic remains on the back of the brooch are traces of textile from the woman's gown.

THE BEADS

<u>Amber Beads</u>
29 amber beads
Mostly medium in size (0.5 - 1 cm diam.),
with 5 classified as large (just over 1 cm diam.)
All roughly cut into approximately round shapes.

Amber is the fossilised resin exuded by certain extinct conifers. The origin of amber in Anglo-Saxon contexts is assumed to be the Baltic coast, the homeland of many of the immigrants, but it can also be found (though in much smaller quantities) on the East coast of England and many other places. It is a material that has often (Meaney 1981) been thought to have magical properties and was worn in great quantities by Anglo-Saxon women, particularly the Angles of Eastern and Central Britain. The record for amber beads in a single grave is 280, at Long Wittenham, Oxfordshire, but they are often found singly and the average is only 5 (Huggett, 1988).

Amber beads are found from the late 5th to early 7th centuries, but the greatest number are found in the mid-late 6th century (Huggett 1988)

The "Silver in Glass" Beads
11 segments,
broken in 4 lengths each segment - 0.35 cms long

"Gold in glass" beads first appeared in Egypt in Ptolemaic times and they continued to be made and widely traded from there through the Roman period though not, oddly enough, to Italy, Spain, Gaul and Germany until the 4th century AD. Many examples are found in Roman Britain. During the Migration Period of 450-600 AD they are common in Germany, Belgium and North France. In Britain "gold in glass" and (even more) "silver in glass beads are common in the late 5th and 6th centuties. (Boon 19..)

The beads were made from tubes of colourless glass which were covered in metal foil and then dipped in molten glass. Sections were put on wire and pinched to form segments. These glittering beads were used as the ends of the Haddenham necklace, set off by the golden colours of amber and bronze.

THE SPINDLE-WHORL

Bone
Diameter : 4.5 cms
Hemispherical

It is very unusual for tools, rather than weapons, jewellery or dress items, to be found in Anglo-Saxon graves until the 7th century, but occasionally personal equipment occur. Spindle-whorls, which could be made of many materials, including pottery, wood, shale and bone were simply weights that allowed a hand spindle to rotate evenly to twist fibres of wool, flax or silk into a thread. They must have been an almost constant accompaniment of every girl and woman until the introduction of spinning wheels in the late middle ages. This example is rather light and perhaps was used to spin flax rather than wool. Organic remains indicating a wooden shaft were noted in the centre hole.

THE KNIFE

Fragment of a straight-backed,
curved bladed knife,
a little slighter but otherwise similar to the one above.

THE KEY

Iron

Fragments of iron found in the pelvic area are remains of a chatelaine. They were found between the skeletons, closer to the male, but are likely to have originally been found with the ferrule. It is in very poor condition and much of it is lost, but the fragments include a bent bar which would have acted as a simple key.

Bunches of keys seem to have been regarded as status symbols, often found in rich graves, and were worn prominently at the waist sometimes with other household items and, in some cases, lucky charms. Some were purely ornamental but others, including this example, could have lifted a door latch.

STRAY FIND

The Polychrome Glass Bead
Large (1.6 cm diam) round glass bead
White swags and dots on rust red opaque glass

Polychrome glass beads were widely distributed through Europe and were probably imported to Britain, though it is possible there were workshops in advanced areas such as Kent, where such beads are extremely common and where glass workshops were producing beakers, also with trailed designs. The effect is achieved by surface application of trails and dots. Popular colours were rust-red, blue, white and yellow.

DISCUSSION

This double burial consists of a well-dressed very colourful but not extravagant couple, typical of Anglian burials in the 6th century AD. None of the grave-goods are precisely dateable, but the balance seems to favour the first half of the 6th century, and their customs, fashions and trade-patterns are still very Germanic, probably with more links across the North Sea than with most of Britain. The importance of portable and ostentatious wealth displayed by the woman and efficient armour carried by the man is typical of this period and is a sensible response to the problems of migration, mobility and insecurity.

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APPENDIX A

SKELETAL MATERIAL FROM THE HADDENHAM TK SITE 1990

By Corinne Duhig

This assemblage contained only one undisturbed burial, and the intersection of graves by pits, with the resulting commingling of bones, presented an interesting challenge in analysis and an opportunity to collaborate with the archaeologists. Some bone was eroded, but most was in very good condition.

The undisturbed grave was a double one, containing the almost-complete skeletons of a tall, middle-aged man, showing the changes of degenerative joint disease and an unusual pathological condition of the spine, and a slight young woman who was, at least osteologicaly, in perfect health. From the other graves and pits, 9 other individuals can be identified, in varying degrees of preservation. Three are male: one fully adult, one approximately 18 years old, and the third probably between 18 and 22. Of the three adult women, none of whose ages can be estimated, one is very short and gracile, another is a little taller and rather heavier in build, and the third is represented only by two fragments but also appears to have been quite small. At least three children are present, the age of one of which can be established as 7 years, another being about 12, and the last of an age between these, approximately 9 years old.

Signs of pathological conditions are few, with the exception of number 4 (the man from the double burial), and those that can be found are those of arthritic change and some small signs of localised infection. Overall dental health is exceptionally good, even for the period.

Methods used for ageing, sexing and height estimation are indicated on the record sheets, and references are in the bibliography; general methods are those of Bass, Steele and Bramblett, and Ubelaker.

No 1

Diagnostic fragments of three individuals were present in this pit, although there is insufficient material to suggest that three complete skeletons had ever lain in this area. Individual 1a is a gracile woman, represented by an almost complete femur, all measurements of which are well within the female range, and a badly-preserved frontal bone; height can be estimated, from the length of the femur, as approximately 154 cm/5' 1/2". Number 1b is a portion of the femur of a young adult male, showing the recent fusion of the distal epiphysis, a process occurring between 20 and 22 years of age. The frontal bone and distal femur of another male have been classed as 1c, the frontal sinus development suggesting that this was an older adult than the previous.

The remaining bone material cannot be allocated to a particular individual, but the three separate sets of ankle and foot bones confirm the minimum number of individuals. Some fragments from this context are heavily eroded, as are some from the spoil heap: although they cannot be definitely associated, it is probable that cranial vault fragments from the spoil heap belong with the 1a frontal bone. Cow and horse bones were also present.

One atlas vertebra was present, and shows double articular facets like those of the man in burial 3; this is not, however, a heritable trait, and no familial relationship is implied.

No 2

These are the bones of a right arm and a pair of lower legs, measurements of the femur (bicondylar width) indicating a possible male individual, but all measurements of the tibiae confirming the subjective impression that this is a female. Slightly more robust than 1a, her height would have been around 161 cm/5' 3 1/2". From their position as shown on the excavators' plans, it is clear that these bones are the *in situ* portions of a once-complete skeleton; the humerus can be paired with that of 5b, and it is suggested that 2 and 5b are portions of the same individual, whose original grave was disturbed by feature 5.

Also included with this material was an immature left femur which belongs with the child's bones numbered 5c, described below.

No 3

In one undisturbed grave were this tall, robust man and the female, number 4. His skeleton is almost complete, lacking only a few small hand and foot bones and one vertebra, and in good condition: the skull was not crushed so little repair was needed, and no teeth were lost postmortem. The excavators, commendably, recovered the hyoid bone and an ossified thyroid cartilage.

This man was almost 6' tall (181 cm/5' 11 1/4"), with correspondingly heavily built bones showing strong muscle markings. His skull is rugged and the jaw is deep. A number of features point to his having been aged 40 to 50: the extreme and uneven tooth wear, the degenerative changes in the cervical and lumbar spine, and the state of ossification of the thyroid cartilage (Cerny 1983). Generally, the condition of the pubic symphysis is considered a more reliable age indicator than other methods available, but would, in this case, not have given an age estimate greater than 35 years — a warning to the careless anthropologist.

The pathological features in the spine, often referred to as 'arthritic' changes but correctly called spondylitis, are extreme. The vertebral surfaces are porous and eroded, and development of matching nodules and cavities on adjacent surfaces shows that the intervening discs were badly degenerated. Bony spurs between the vertebrae would have curved round the spreading discs. There are related changes in the hip and shoulder joints, with erosion and bony lipping, probably also due to cumulative stresses on these joints over the years. The same features of age are found in modern people, but heavy manual work probably accelerated the process in the past.

Unconnected with these changes is another, much less common, pathology of the spine, a lumbar stenosis. The vertebral arch, through which the spinal cord passes, is unusually narrow, and would have caused a neural insufficiency, known as claudication, during or after exercise, with numbness, tingling and pain down the sciatic nerve. In the present day, these symptoms are more frequently seen in patients with the intermittent

claudication resulting from hardening of the arteries (T.D. Hawkins, pers. comm.). Whilst not disabling, this condition would have given this man discomfort or pain if manual work or exercise were required of him.

There are also a number of interesting aspects to the teeth, which were mostly in extremely good condition. Despite the very heavy wear, only two molars had been lost before death, and the socket of only one of these showed signs of an abcess at the root — abcesses tending to develop when infection enters the exposed pulp chamber of a heavily-worn tooth. Some calculus (tartar) was present. The lower right third molar was impacted, being angled against the adjacent tooth, and dental caries had developed on both, due, presumably, to food packing and inadequate cleaning; an unusual pattern of wear on the upper molar was caused by the angled tooth below.

Curiously, although one wisdom tooth was impacted, the rest of the dentition was well spaced, with a gap between the upper front teeth (median upper diastema). In the lower jaw, the lateral incisors were missing, but there was no sign of their having been present, and we must take this as a case of congenital absence of teeth. As a genetic variant, lateral incisors are the most commonly absent teeth, second only to wisdom teeth.

As mentioned above (see number 1), there are double articular facets on the occipital condyles of the skull and on the atlas vertebra, another developmental variant of no genetic or clinical significance.

No 4

The female buried with number 3 was, equally, almost complete. Sadly, the works which had led to the original discovery of these skeletons had broken away part of the right side of the face, which was lying highest in the grave, and portions of the vault, and the skull was shattered. However, the recovery of some of the missing fragments from the spoil heap has enabled the skull to be almost completely reconstructed.

This slightly-built woman was about 5' 1" to 5' 2" tall (156 to 158 cm), and can be aged fairly closely to between 18 — because of the very recent eruption of her wisdom teeth — and 20 — when the basilar suture at the base of the skull closes. Unusually for the time period, she appears to have had perfect dental health, with no tooth loss, no caries or abcesses and minimal tooth wear: for the Saxon period, average tooth loss is 14% and caries 6% (Brothwell 1972). She did not, however, have perfect dental hygiene, as a medium degree of calculus was present throughout the tooth row. This may be due, in part, to inadequate natural cleaning of the mouth because of overcrowded and misaligned teeth: as is often found in small people, the anterior dentition is crowded, with winging of the upper central incisors. She would have had an overbite, as is common in modern Europeans but unlike the edge-to-edge tooth occlusion more general in past populations.

There is no sign of disease on this skeleton, other than a small infective focus on one vertebra. Considering the possibility of a family relationship between numbers 3 and 4, various characteristics which tend to be inherited were compared (for example, the congenital absence of teeth in

number 3), but nothing of significance was found, so it is more likely that this woman was the wife of 3, rather than his daughter or other blood relation. Furthermore, her skull form tends to be rounded, as most Saxon skulls are, but his is long.

No 5

A very large number of bone fragments from this pit could be sorted into groups belonging to three individuals. The first, 5a, contains pelvis, both arms, upper legs and portions of the skull of a male of approximately 18 years of age, whose wisdom teeth had just erupted and whose growth was just ceasing as the long-bone epiphyses were fusing. It was found that the lower legs of the this young man are clearly those marked number 7 (feature 5, as the plans show, cut burial 7). Measurements of the leg bones show that he was around 165cm/5' 5" tall.

The bones of 5b, a mandible of female form, left arm bones and a few vertebrae, are now grouped with those of individual 2, described above.

Number 5c is the youngest person found at this site, a child of 7 years represented by a mandible, from which the age can be determined by the state of tooth eruption, and some limb bones; one femur was found with skeleton number 2. The size of the limb bones confirms the age estimate.

More fragments of cow bones were found in this area.

No 6

An older child than the previous one was found in burial 6, which contained arm and leg bones, part of a pelvis and two vertebrae. The pelvis and legs show the state of epiphyseal fusion found in late childhood, 6—12 years, and the length of the femur suggests the upper half of this age range. The arm bones, all very eroded, do not necessarily belong to the same individual.

Spoil heap bones

More than 80 fragments were identifiable from the spoil heap, some of which could be reconstructed into complete or near-complete bones. A few vault fragments could be joined to those from feature 5, while others, most usefully, were from the skull of the female in the double burial, and aided the reconstruction.

Seven portions of innominate bones were present, three being female in conformation. Whilst it was not possible to definitely allocate them to one of the female skeletons from this site, neither could the possibility of their belonging together be excluded, so that the minimum number of individuals remains unchanged. However, amongst the five partial femora were a pair of bones which clearly cannot belong to any other skeleton, so that at least one more individual — another female — was present. An immature humerus represents a child intermediate in age between numbers 5c and 6.

One of the innominates, probably that of a male, has severe arthritic changes to the acetabulum, with bony lipping and eburnation (polishing

due to breakdown of the joint and direct bone-to-bone contact). Parallel changes on the head of the femur would be expected in such a case, but no signs of this condition can be seen on any femora from the site. Another innominate, this time female, shows slight breakdown of the surface of the pubic symphysis suggestive of infection. The striation and new-bone formation on the surface of an isolated fibula also indicates infection, which may be localised or systemic - in the absence of related bones, it is impossible to determine.

Pathologies Scapulae: deep channels on superior surface of coracoid/spine junction, foramen on R
Cystic erosion of coracoid and distal clavicular joint (DJD)
O/phytes & other degenerative changes on C4 (lower body), T4—5 (apophyseal joint), T6 down (porosity, cystic erosion & Schmorl's nodes with o/phyte lipping T12 down). Matching changes in L & S vertebral surfaces show extreme degeneration of discs
R femur fovea capitis, some o/phyte development
Lumbar stenosis, esp on 3 & 4 (x-ray)
Double articular facets on atlanto-occipital joints
Impacted 8 with 7/8 interproximal caries and aberrant wear on 8 ; am loss of 8
Median upper diastema; absence of 2's prob congenital

Other comments

Additional bones not belonging to this skeleton:
L ulna
innom fragment

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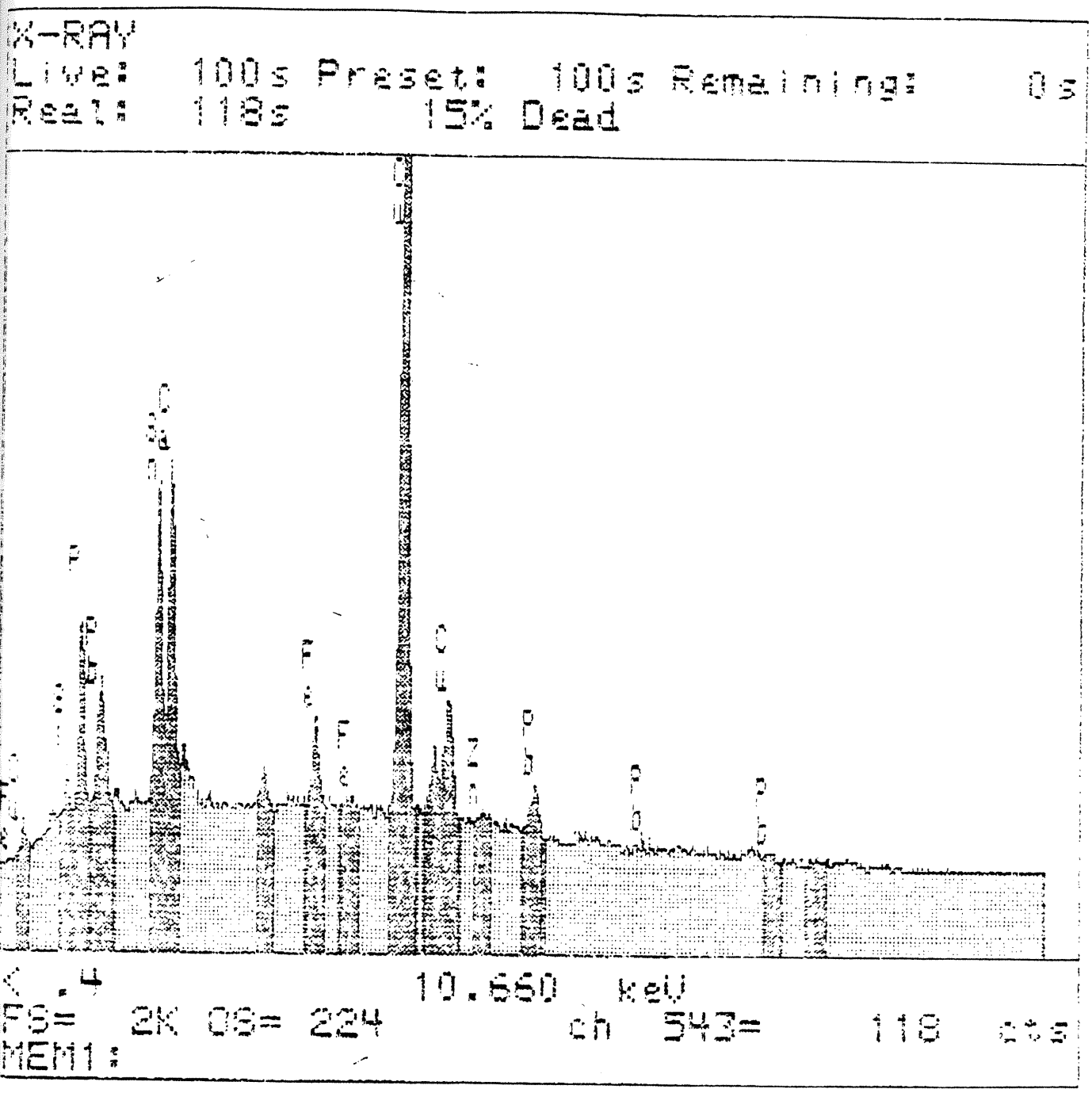
APPENDIX B

Analysis by Scanning Electron Microscope (Institute of Archaeology, London, Margot Wright, Pers. Comm.) reveals that the brooch is mainly copper, with tin and a little lead also present.



HADTK 90 SITE PLAN

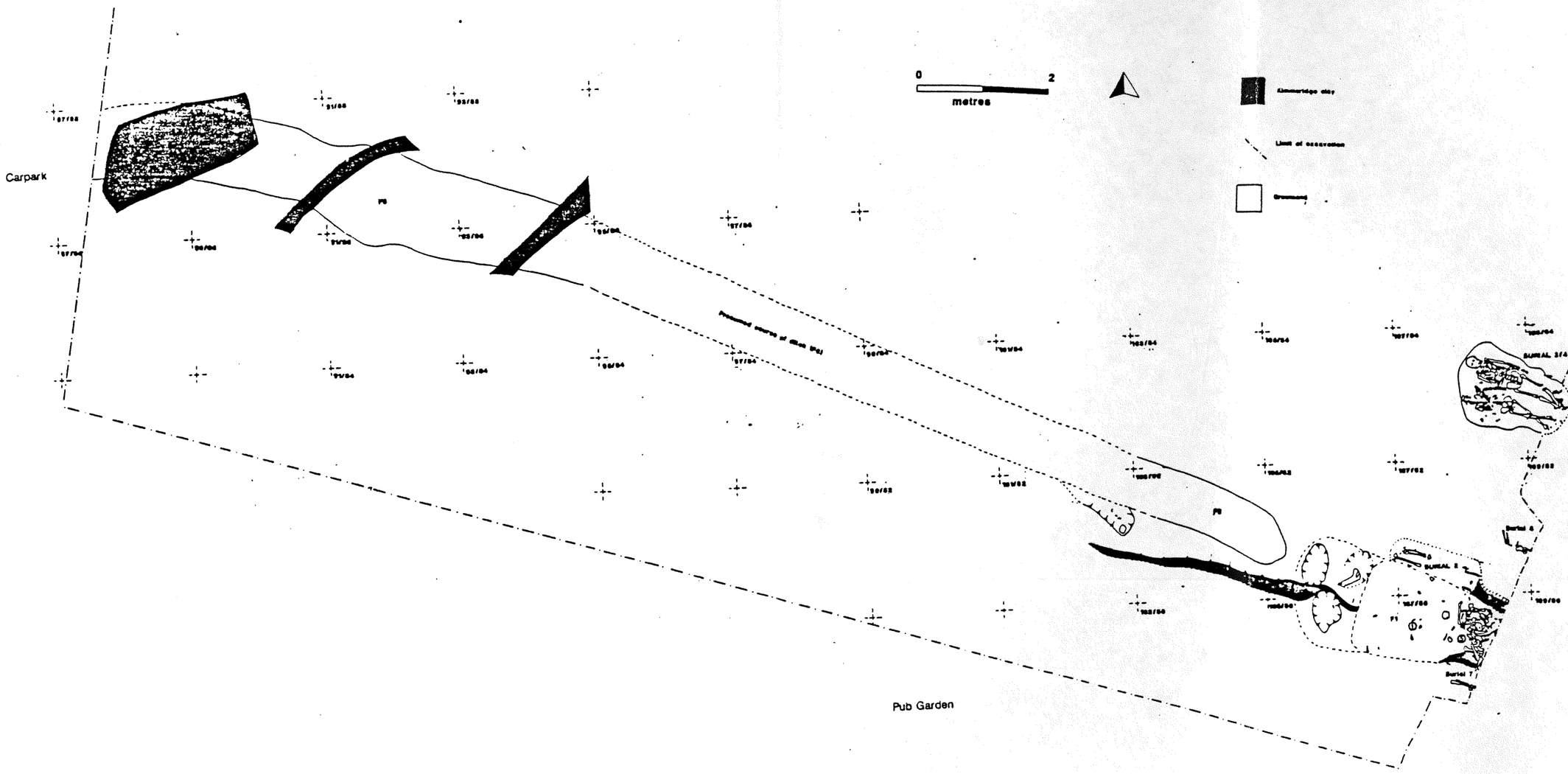
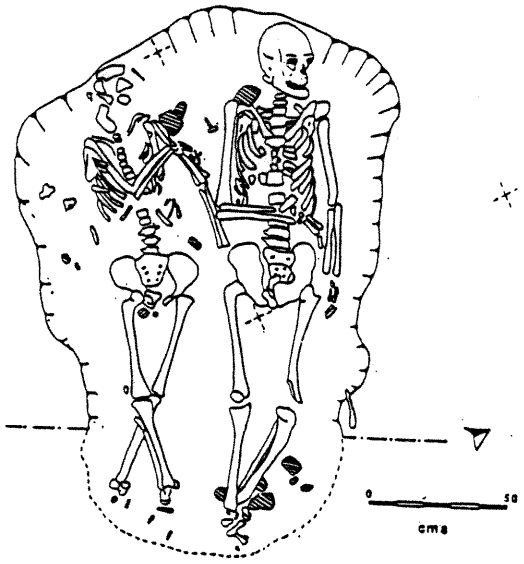


Fig.2

HADTK 90

DOUBLE BURIAL 3/4



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DISTURBED BURIAL 2

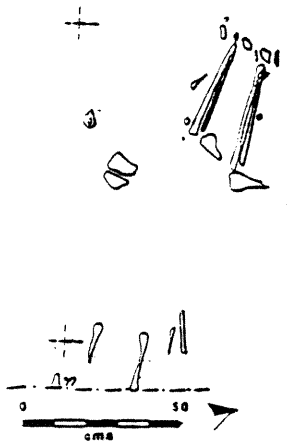
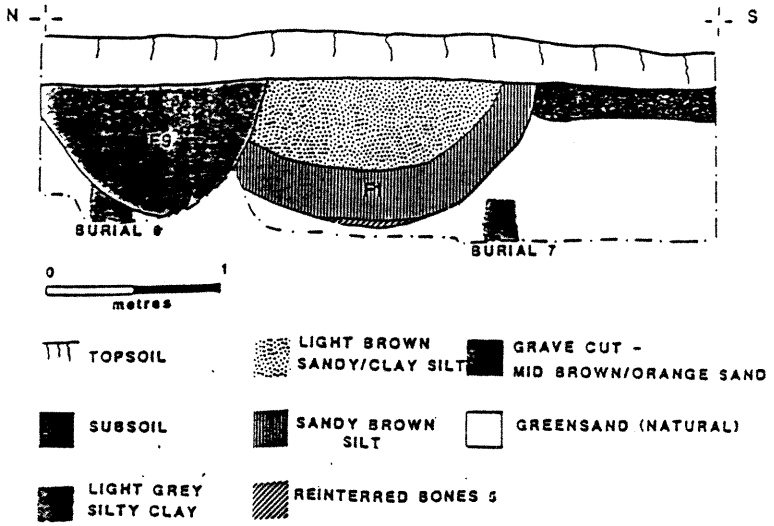


Fig.3

HADTK 90

WEST FACING SECTION THROUGH PITS F1,F9 & BURIALS 6 & 7



HADTK90

CHARNEL PIT F1 & DISTURBED BURIALS 6/7

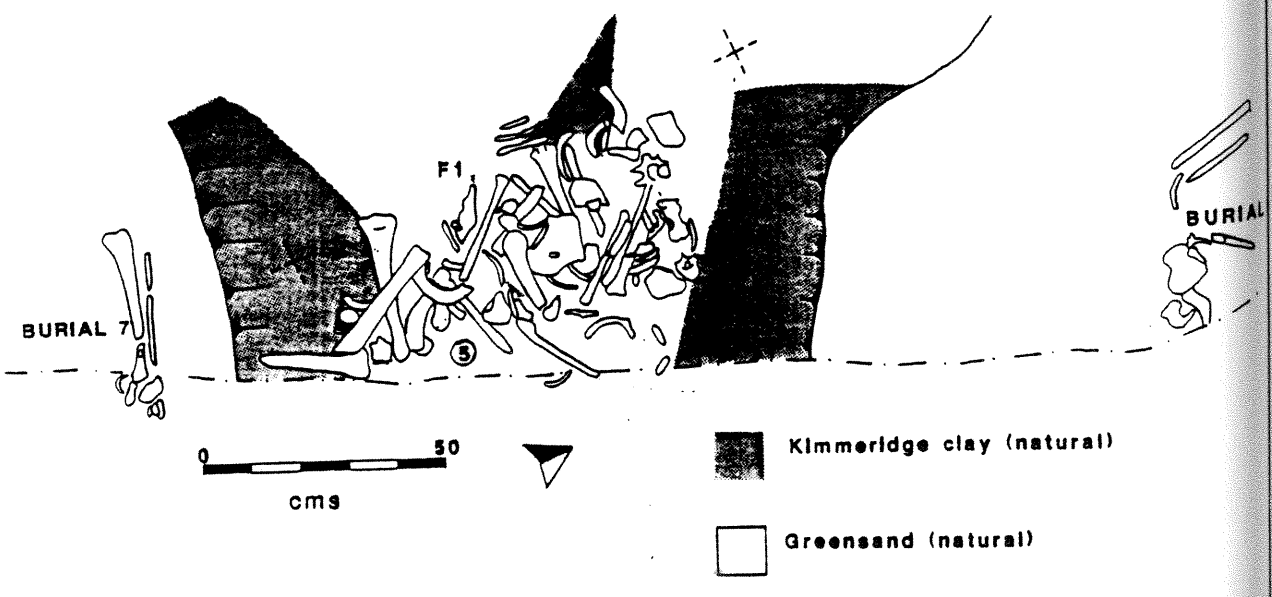


Fig.4

HADTK90

WEST FACING SECTION THROUGH PITS F1, F9 & DOUBLE BURIAL 3/4

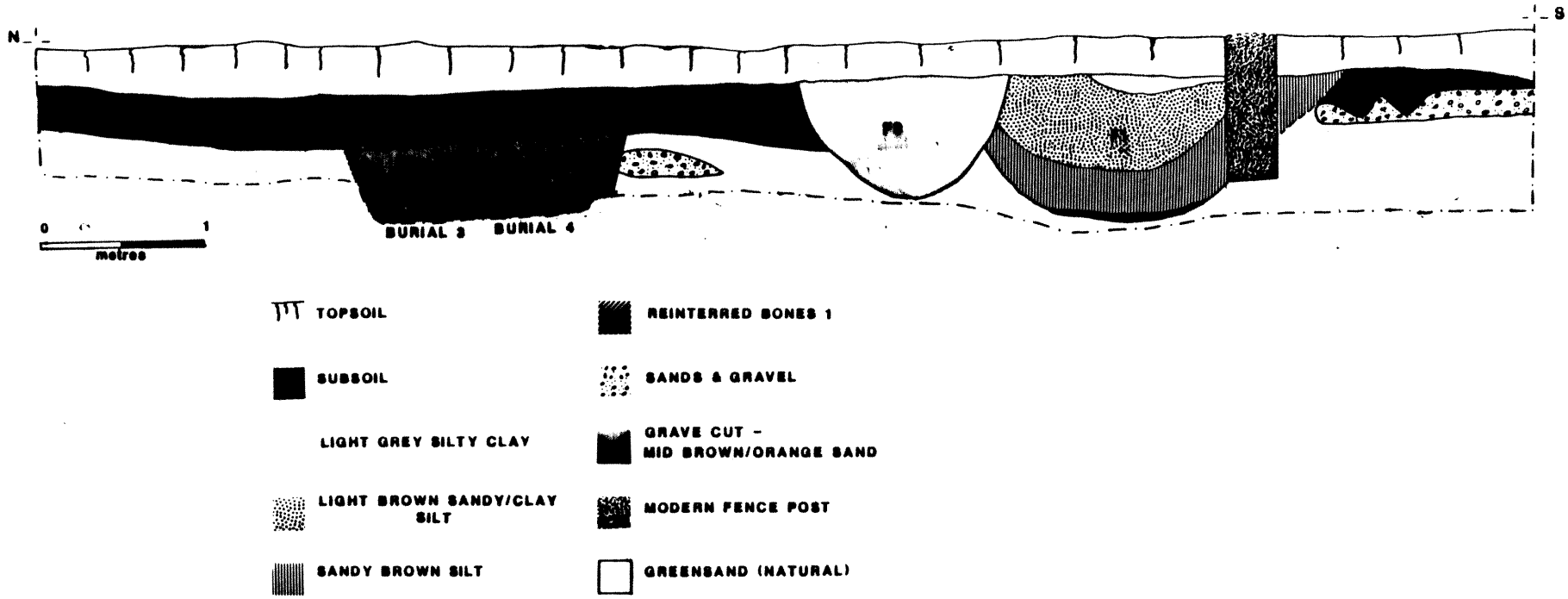


Fig.5

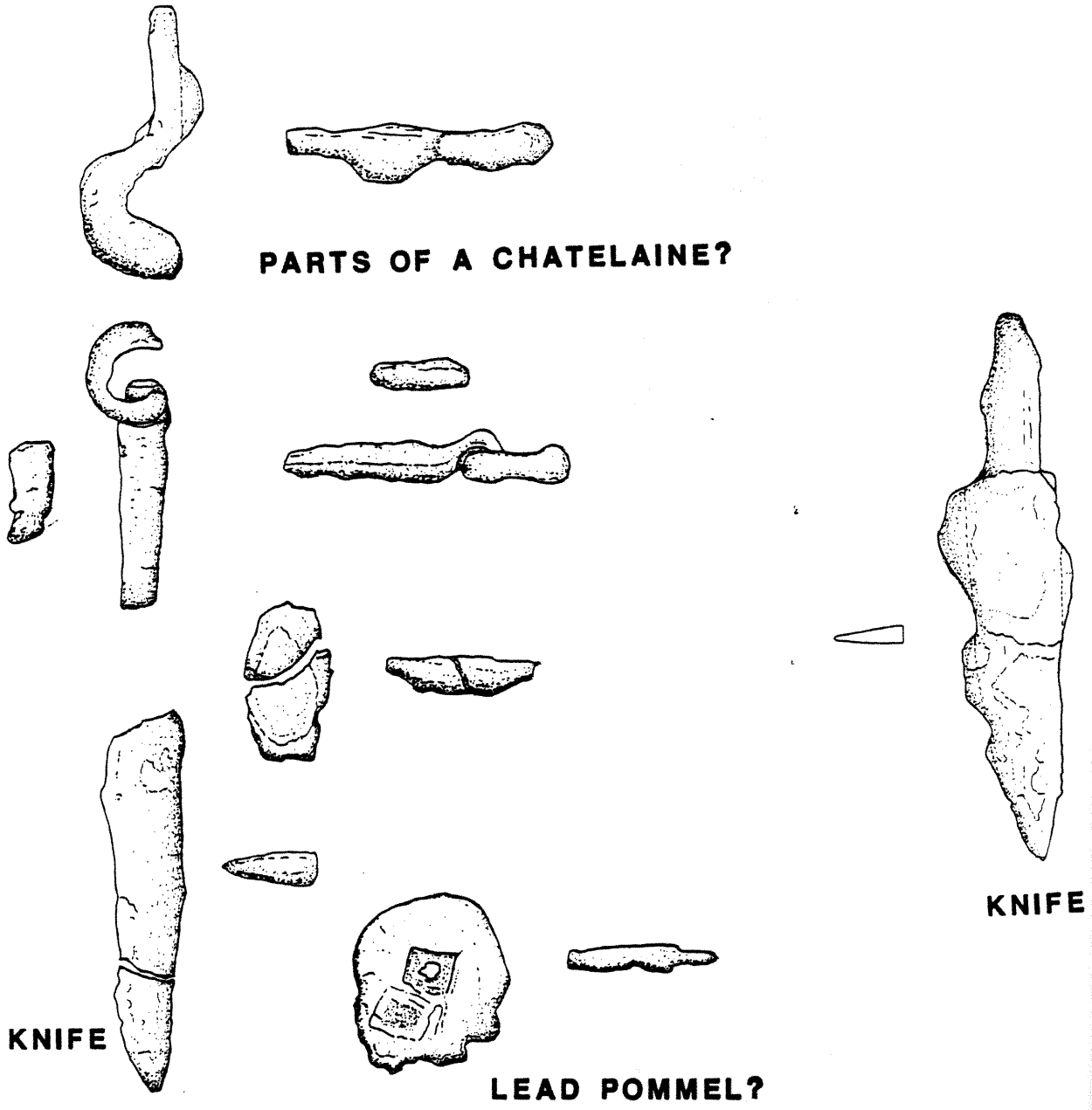
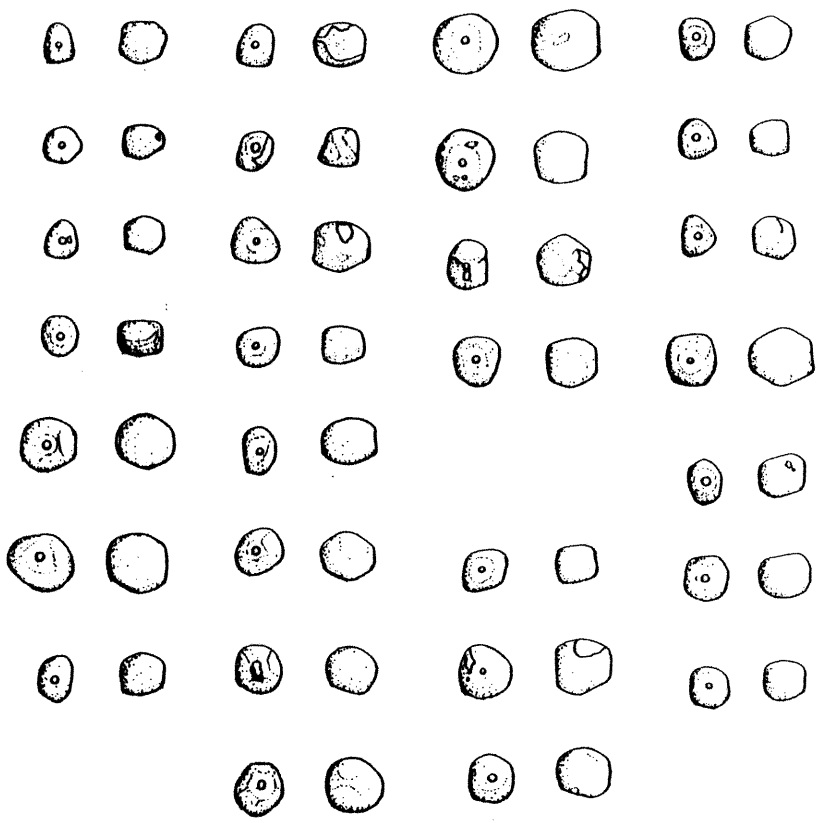


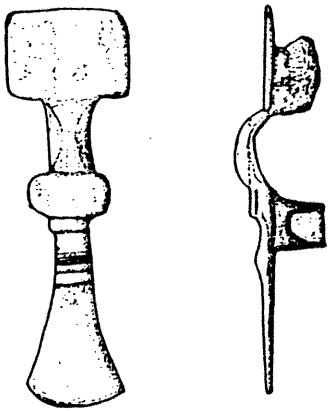
Fig.6



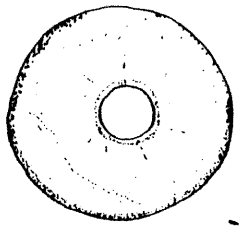
AMBER BEADS

GLASS BEAD

FROM 1:1



From 9:4



BONE SPINDLE WHORL

SILVERED GLASS BEADS

From 9:4

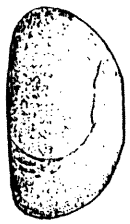
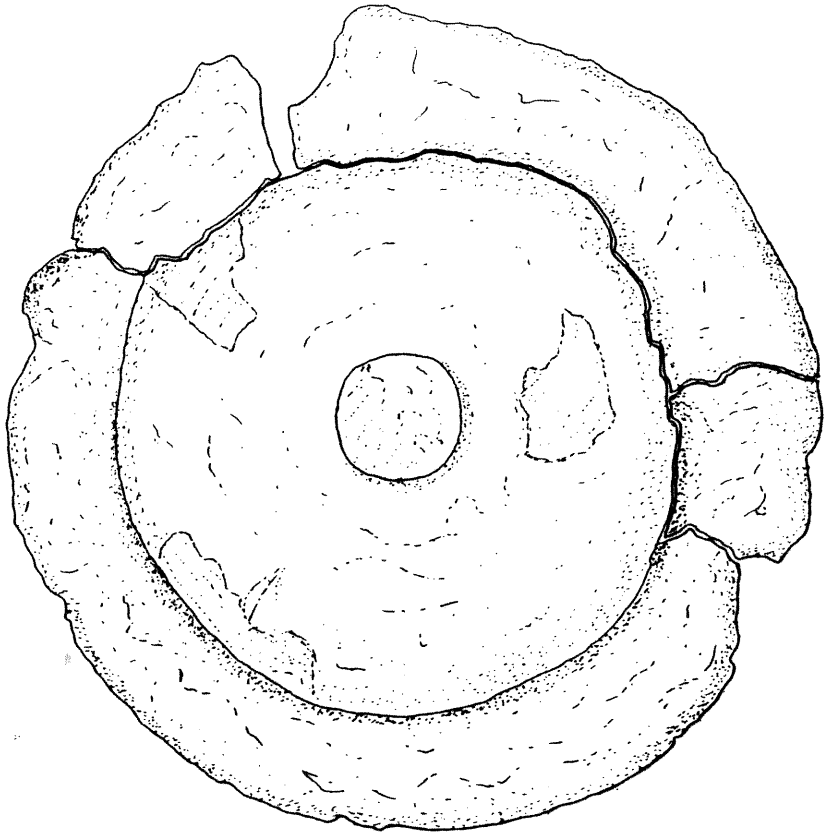
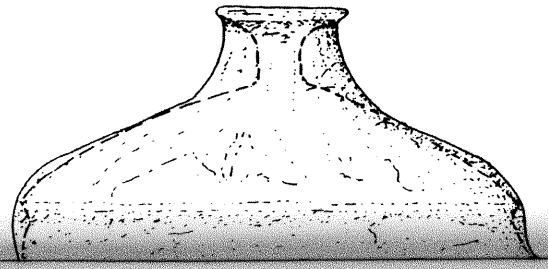


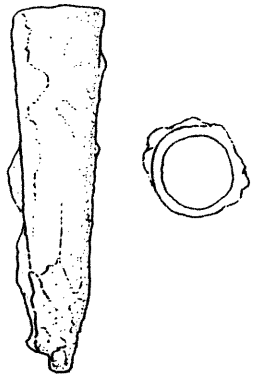
Fig.8



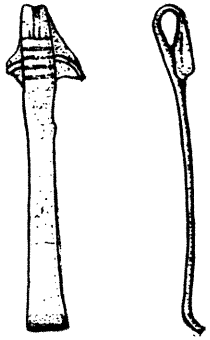
SHIELD BOSS

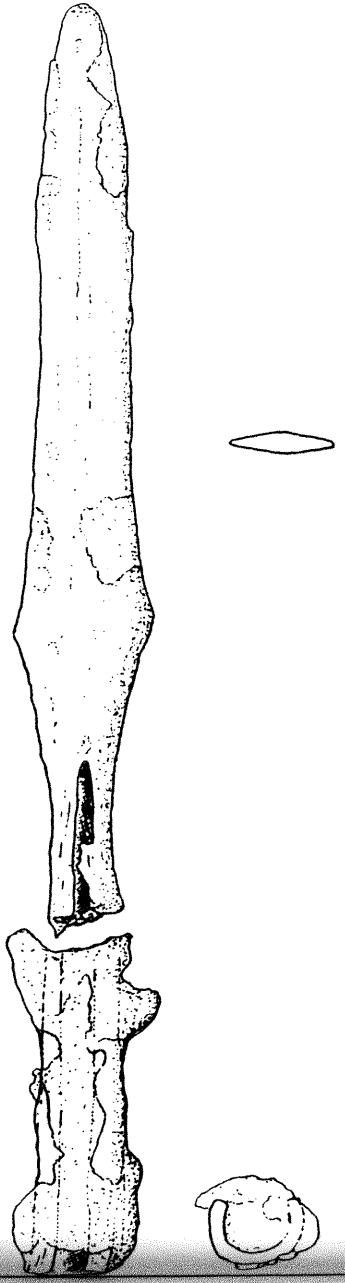


IRON SPEARHEAD



BRONZE TWEEZERS





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