AN IRON AGE PIT ALIGNMENT AND BURIAL AT ASPREYS, OLNEY

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with contributions by

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Oxford Archaeology carried out an excavation and watching brief at Aspreys, Olney, on behalf of CgMs Consulting Ltd. This revealed a pit alignment dating to the early Iron Age. Environmental evidence indicates that the pits had been left to fill gradually within a largely open landscape. The silting deposits from the pits suggest that the alignment was not flanked by an earthwork bank. During the middle Iron Age, one of the pits — by then just a shallow hollow — was selected for the interment of a crouched inhumation burial. This burial provides an illustration of the long-term significance of pit alignments. Later activity was limited to medieval and post-medieval agriculture and quarrying. The concluding discussion considers the Olney pit alignment with reference to other similar monuments in the region.

Introduction

In late 2005 and early 2006, Oxford Archaeology (OA) carried out an excavation and watching brief at Aspreys, Olney, Milton Keynes. The work was undertaken on behalf of CgMs Consulting Ltd, in advance of residential development.

The site is located at the northern edge of the town of Olney, bounded to the south by Aspreys and to the east by Yardley Road (grid reference SP 8839 5233; Fig. 1). It is situated on a gentle slope, rising from 70.5 m OD in the south-east to 74.5 m OD in the north-west. The geology consists of limestone (Cornbrash), overlain by a heterogeneous mix of drift deposits and boulder clay.

Archaeological Background

There was no prior knowledge of any archaeology at the site, which in recent times has been used for agricultural purposes. However, a number of archaeological sites are known to exist in the wider area around the site. These include the Iron Age and Romano-British settlement at Ashfurlong, an extensive cropmark complex lying 600 m to the east (Scott 1993). Fieldwalking and small scale excavation here has produced Iron Age pottery and a late Iron Age coin, along with evidence for the presence of substantial Romano-British buildings. The Sites and Monuments Record also includes a report on the recovery of Iron Age and Roman pottery 500 m to the south-west of the Aspreys site, along with two other finds of Roman pottery in the vicinity (SP 8810 5140 and SP 8940 5190). The cropmark of a probable round barrow lies to the north-east (SP 8881 5291).

Excavation Methodology

Evaluation trenching was carried out at the site by OA in June 2005 (OA 2005). This revealed a series of Iron Age pits, along with post-medieval and undated features. As a result, an area of 0.87 ha in the northern half of the development area was selected for full excavation, undertaken in September and October 2005 (Fig. 2). The work was carried out on a 'strip, map and sample' basis, and followed procedures laid down by the OA Fieldwork Manual (OA 1992). All discrete archaeological features lying entirely within the area of excavation were half-sectioned, aside from features that were evidently post-medieval, which were only sample excavated. A watching brief was subsequently carried out in February 2006 in the south-east corner of the development area, to trace the continuation of the pit alignment revealed by the excavation (Fig. 2). An

FIGURE 1 Location of Aspreys, Olney

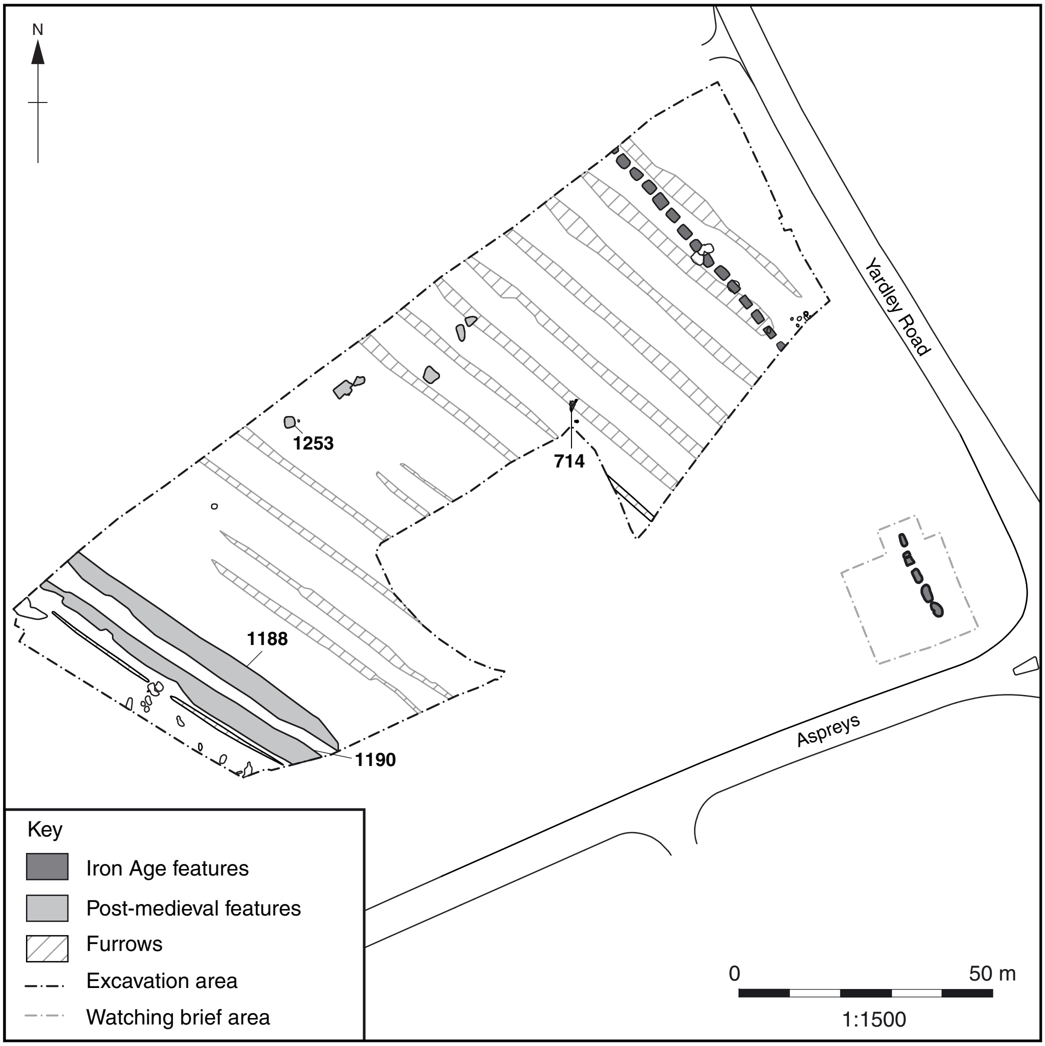

FIGURE 2 Site plan

area of 560 m^2 was stripped under archaeological supervision here; archaeological features were planned but not investigated further.

EXCAVATION RESULTS

Pre-Iron Age activity

No early prehistoric features were recorded, although a few residual pieces of worked flint indicate sparse activity in the later Neolithic and Bronze Age (see Devaney below).

Early Iron Age pit alignment

The pit alignment crossed the eastern end of the excavated area on a NW-SE alignment. The southwards continuation revealed by the watching brief followed a slightly different orientation, suggesting that the alignment curved slightly towards the SSE as it descended the hill (Figs 2–3). Overall, the alignment could be traced for a distance of 115 m, continuing beyond the limits of investigation at either end. The alignment does not appear to be visible on any of the aerial photographs of the area held by Milton Keynes Council (Brian Giggins pers. comm.).

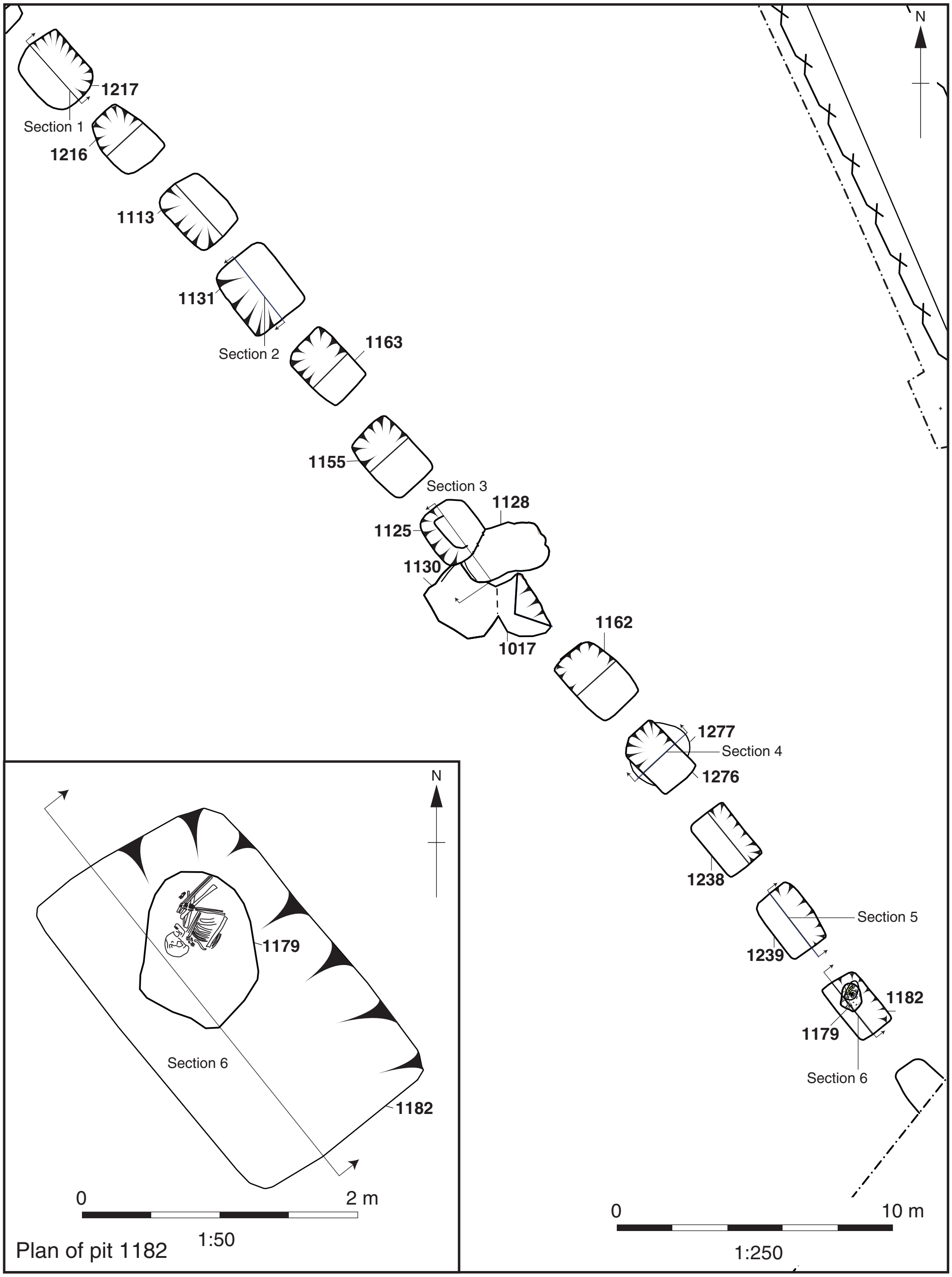

FIGURE 3 Plan of northern section of pit alignment

A total of 15 pits were uncovered in the main excavation area, of which 13 were half-sectioned. A further five were observed in the watching brief. The pits were placed 0.8–1.4 m apart. All had a regular, rectangular form, and were orientated with their longest sides following the NW-SE axis of the alignment. The excavated examples shared a very similar profile, with regular, steep, straight sides and a flat base. They ranged from 2.45–3.00 m long, 1.45–2.20 m wide and 0.72–1.17 m deep (Table 1 and Figs 4–5). The pits were not deep enough to cut into the limestone bedrock underlying the subsoil, with the exception of the lower 0.30 m of pit 1239 (Fig. 5, section 5; Plate 1).

The pits all appeared to have been gradually filled through natural processes. Silting layers (brown silty clays) were typically interleaved with erosion deposits containing a higher proportion of limestone gravel. Notably, the erosion layers had entered the pits from varying directions, even within a single feature. This makes it unlikely that the upcast from the pits had been used to form a bank along one side of the alignment. Upcast material had either been dumped on different sides of the pits, or removed at least some distance away from the alignment. None of the pits showed any evidence for recuts, with the exception of pit 1182, which had an inhumation grave (1179) inserted into its upper fills during the middle Iron Age (Fig. 5, section 6; see below).

Pit 1276 appeared to cut a shallow natural hollow or tree-throw hole (1277) (Fig. 5, section 4). A large, irregular tree-throw hole (1128) was located adjacent to the south-eastern side of pit 1125 (Figs 3 and 4, section 3). This contained silty clay deposits which appeared to merge with the upper fills of 1125, suggesting that the pit and tree-throw hole silted up over the same period. A second possible tree-throw hole (1130) lay adjacent to the southern side of 1128, although this may in fact have been part of the same feature. The relationship of the tree-throw holes to pit 1017 was unclear.

Aside from residual worked flint, finds from the pits were restricted to small quantities of very fragmented and abraded pottery and animal bone, apparently randomly distributed through the pit fills. Bulk samples from its fills produced only very sparse quantities of charred cereals and charcoal. In general, the pottery from the pits cannot be dated more closely than to the Iron Age, although one rim sherd from pit 1131 (fill 1136; Fig. 4, section 2) appears to be of early Iron Age type. This is supported by a radiocarbon determination of 780–480 cal BC/470–410 cal BC obtained on charcoal from a lower fill (1143) of pit 1131 (Poz-15081: 2483 ± 35 BP). The absence of Roman or later material from the pits suggests that their infilling was complete by the end of the Iron Age.

PLATE 1 Pit 1239 from the north-east

Table 1 Summary of excavated pits from the pit alignment. Features listed in order from north-west to south-east

Pit (g)	*Length (m)*	*Width (m)*	*Depth (m)*	*Pottery (g)*	*Animal bone*
1217	2.70	2.20	1.00	100	5
1216	2.45	1.70	1.06	24	4
1113	2.90	2.00	0.90	22	7
1131	2.65	2.20	0.98	25	21
1163	3.00	2.00	1.10	3	57
1155	2.74	1.90	1.05	12	67
1125	2.20	1.90	1.10	5	23
1017	2.40	2.00	0.90	–	–
1162	2.75	1.80	0.85	24	26
1276	2.40	2.10	1.17	1	3
1238	2.45	1.60	0.85	1	6
1239	2.50	1.68	0.85	4	11
1182	2.40	1.45	0.72	–	–

Middle Iron Age burial

During the middle Iron Age, an inhumation grave (1179) was cut into the upper fills of pit 1182, which by that point had already largely silted up (Figs 3 and 5, section 6; Plate 2). The grave was oval and aligned north-south. It measured 0.90 x 0.50 m and was 0.58 m deep, with vertical sides and a flat base. The skeleton (1178) was of an adolescent of uncertain sex. It was crouched on its left side, facing east. Following interment of the body, the grave was partially back-filled with a silty clay deposit (1177). This was then covered by a layer of flat limestone blocks (1173), each up to 0.25 m long and 0.08 m thick, placed horizontally to a thickness of 0.25 m. The limestone layer was in turn overlain by a final silty clay back-fill (1176). Iron Age pottery was recovered from fills 1176 and 1177. This was in a different fabric from the pottery from pit 1182, suggesting that it was not redeposited material. However, sherd refits existed between layers 1176 and 1177, indicating that the back-filling of the grave took place in a single episode.

A radiocarbon determination of 350–300 cal BC/210–40 cal BC was obtained from the skeleton (Poz-14682: 2125 ± 35 BP), placing it squarely in the middle Iron Age. The crouched posture of the burial is typical of Iron Age inhumations, and the layer of stone slabs placed above the body finds parallels in some contemporary ‘pit burials’ elsewhere in southern England (Whimster 1981).

Other Iron Age features

The remaining Iron Age features consisted of a cluster of seven intercutting sub-circular pits (714, 716, 719, 722, 728, 730 and 731) lying 37 m to the west of the pit alignment (Figs 2 and 6). These were up to 1.90 m in diameter and 0.36 m deep, with bowl-shaped profiles and pale, silty fills. Small amounts of early or middle Iron Age pottery were recovered from three of the pits (719, 722 and 730). Pit 730 also produced a few fragments of animal bone and two burnt cobbles which appear to have been used as quern rubbers. Two intercutting postholes (710 and 712) lay immediately to the south of this pit group, but were devoid of finds.

Medieval and post-medieval land use

There was no evidence for subsequent activity until the late medieval/post-medieval period, when the site was used for ridge and furrow cultivation (Fig. 2). The furrows extended across the whole of the site, following a NE-SW orientation, parallel with the present south-western boundary of the field. Two parallel ditches (1188 and 1190) also ran on the same alignment across the western end of the site. Ditch 1190 was very broad (4.60 m wide and 0.36 m deep) and might have been a hollow-way. The material recovered from these features indicates that the ditches were infilled and the ridge and furrow ploughed flat in the late 18th or early 19th centuries, although there was also

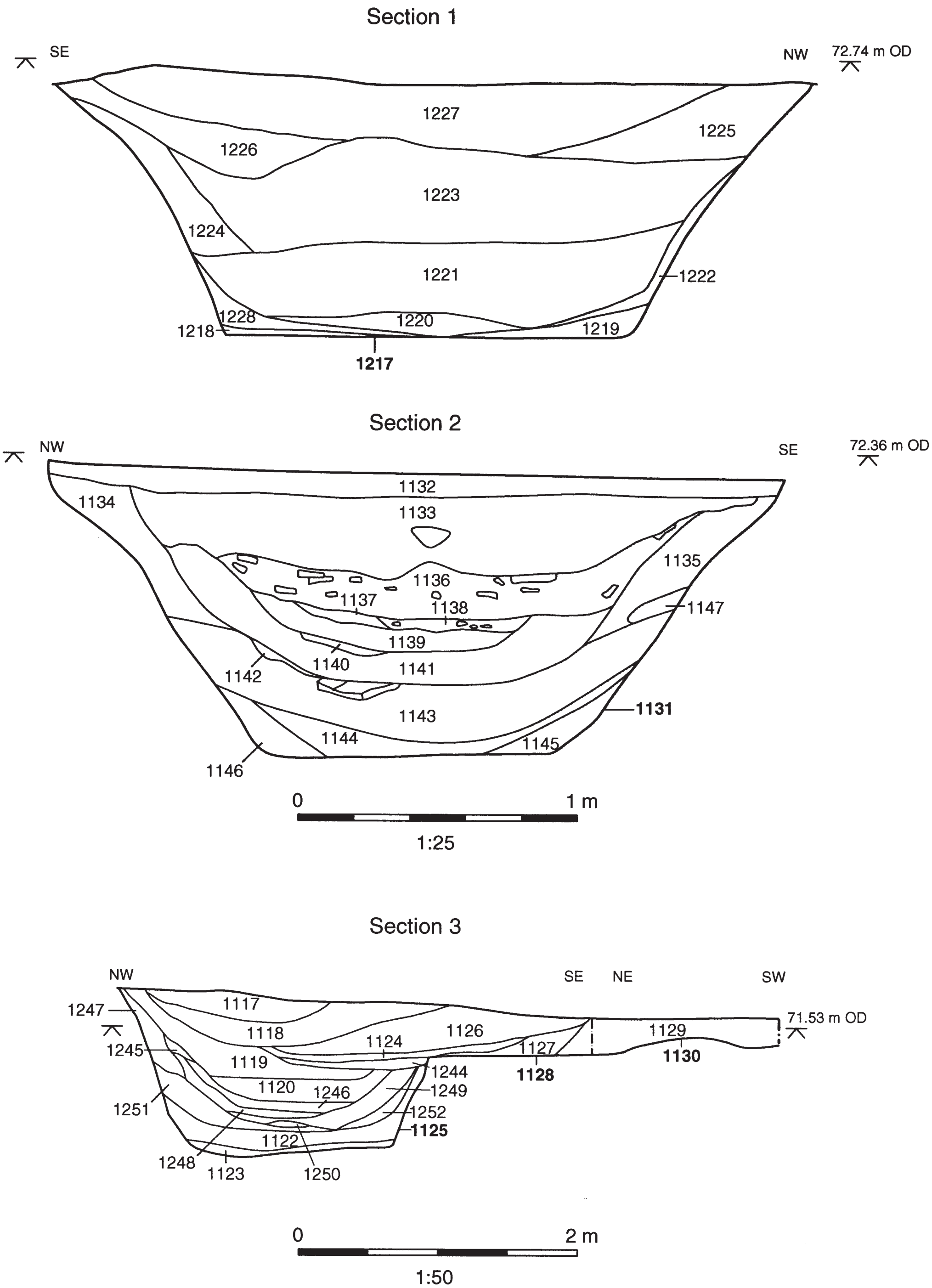

FIGURE 4 Sections 1–3

some residual medieval pottery dating from the 12th to 14th centuries onwards. A scattering of irregular pits, possibly quarry pits, was also observed at the northern edge of excavation. One of the pits (1253) contained a small amount of 18th century pottery.

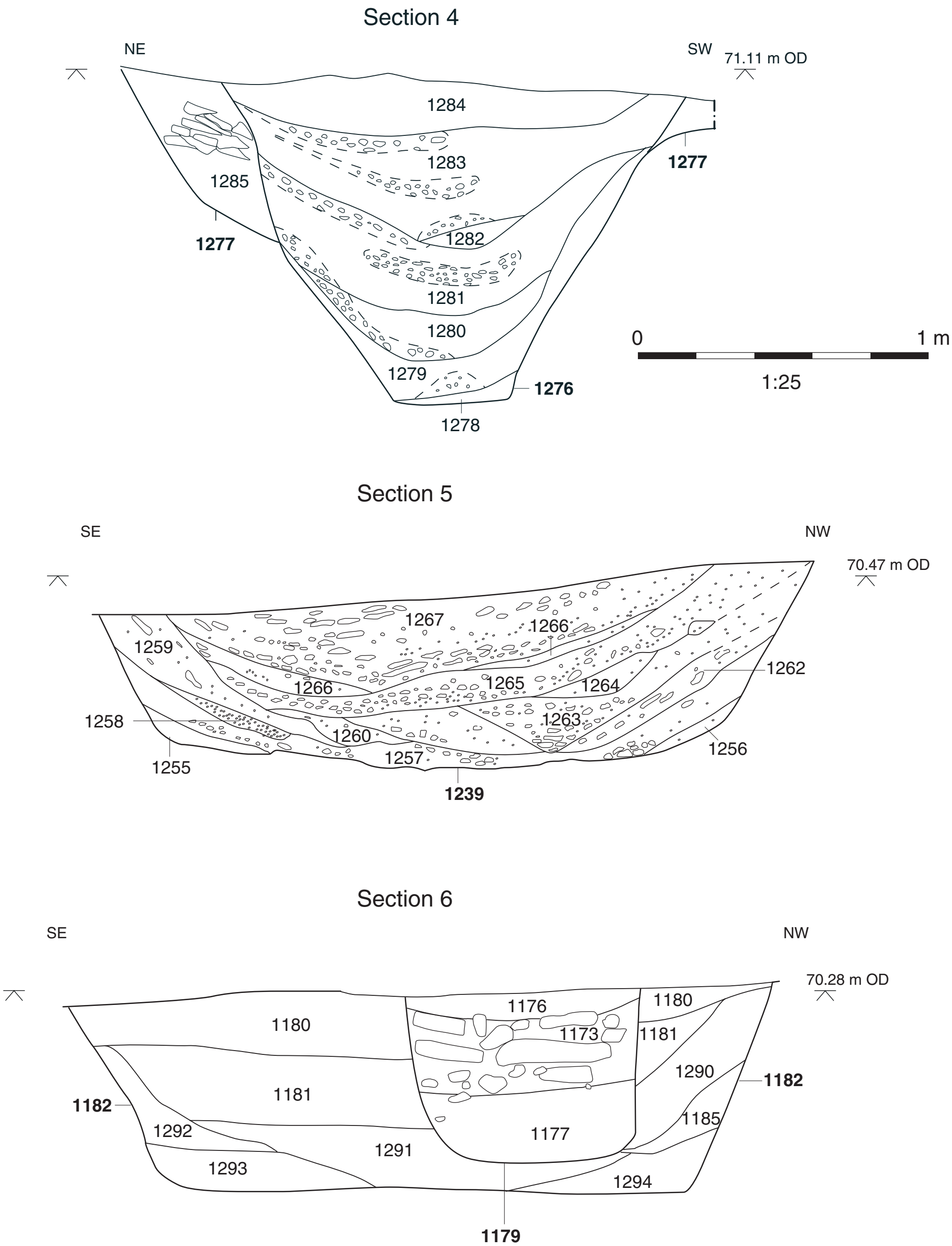

FIGURE 5 Sections of pit alignment

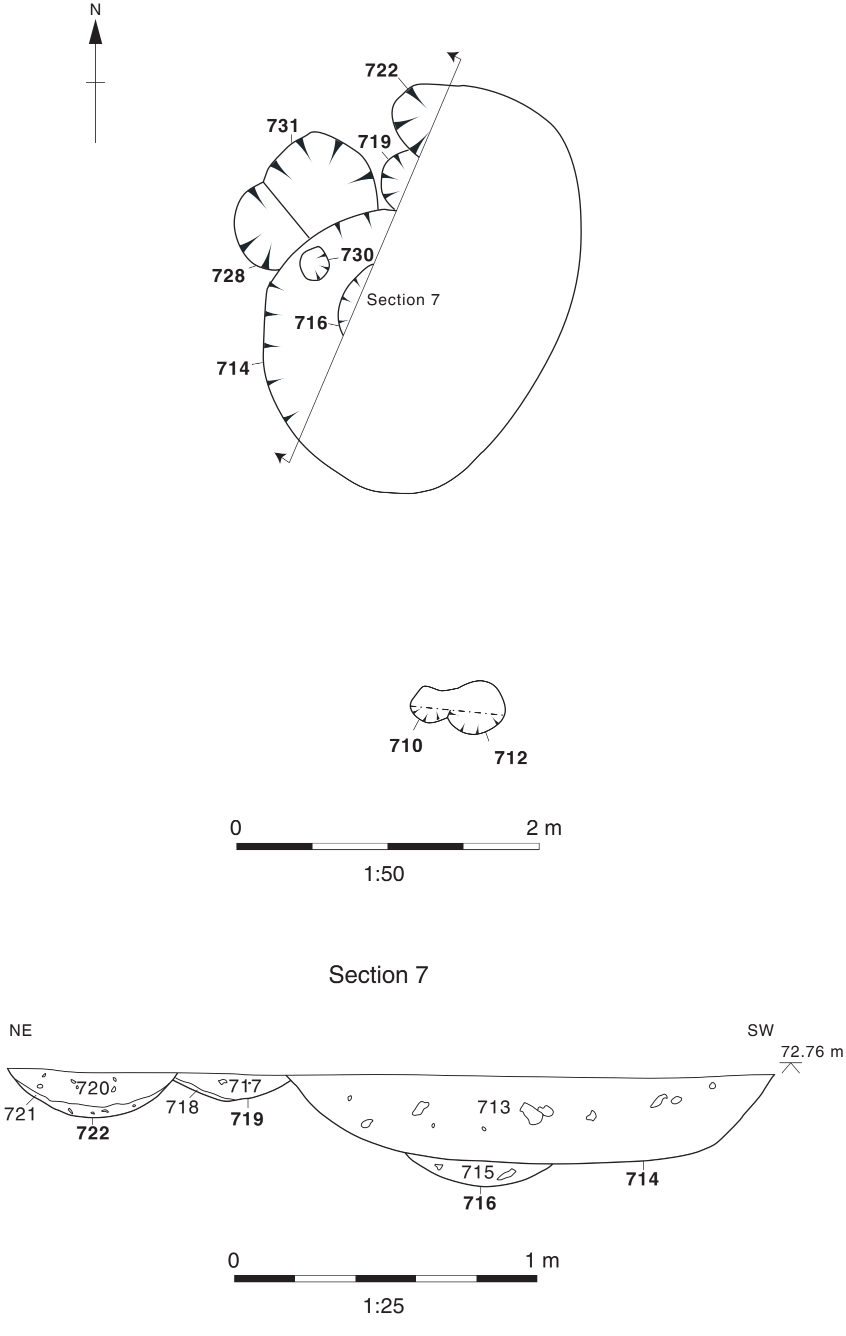

FIGURE 6 Plan and section of western pit group

PLATE 2 Skeleton 1178 from the north-east

FINDS

Flint by Rebecca Devaney

A total of 29 pieces of worked flint was recovered (Table 2). The material was spread between 15 contexts, with most contexts containing just a few pieces. The flint can be broadly dated to the later Neolithic and Bronze Age on typological and technological grounds, although it was all residual in contexts dating to the Iron Age and later. The flint was catalogued according to a broad debitage, core or tool type. Information on burning, breaks, raw material and technological characteristics was also noted.

Where identifiable, all of the raw material is gravel flint, which is generally characterised by a thin and abraded cortex. The material is likely to be locally derived, perhaps sourced from river gravel deposits. The lack of chalk-derived flint is understandable as the nearest possible source is over 30 km away to the south-east.

The worked flint is in a fairly good condition, with most pieces exhibiting minimal damage. However, the amount of surface alteration is quite high, with the majority of pieces exhibiting moderate to heavy cortication. This suggests that most of the assemblage has been exposed to weathering, a situation consistent with the residual nature of the material.

Unretouched debitage dominates the assemblage (25 pieces). In general the material is reminiscent of later prehistoric flint working and probably dates to the hard hammer industries of the later Neolithic or Bronze Age. Characteristics usually associated with earlier flint working, such as platform edge abrasion and a significant proportion of blades, are not seen. However, a blade-like flake, which has possible dorsal blade scars and a punctiform butt, may be from the Mesolithic or earlier Neolithic. Characteristics associated with Iron Age flint working, such as short, squat flakes, obtuse striking angles, thick and wide striking platforms and a high instance of step and hinge terminations, were not present (Young and Humphrey 1999).

The three cores are very different in terms of reduction strategy and size. The largest multi-platform flake core (275 g) exhibits an irregular reduction strategy and slight burning at one end. The keeled flake core was made on a small pebble and weighs just 25 g. Removals have been taken from both sides to create a keeled edge. A core on a retouched flake is unusual. The original flake has a small amount of direct retouch on its distal end and later removals have been taken from both the dorsal and ventral surfaces, the cortication on which is less developed than the rest of the flake. Weighing just 6 g, this core is very small. The cores are not

TABLE 2 Summary of worked flint by type

Flint category	*Total*
Flake	20
Blade-like flake	1
Bladelet	1
Irregular waste	3
Multi-platform flake core	1
Keeled flake core	1
Core on a retouched flake	1
End scraper	1
Total	**29**

chronologically diagnostic but are consistent with the rest of the assemblage.

A single retouched tool was recovered, an end scraper with crude direct retouch on its distal end. Like the cores, this piece is chronologically undiagnostic, but is consistent with a later Neolithic to Bronze Age date.

Iron Age pottery by Leo Webley

A small assemblage of 129 sherds (480 g) of handmade Iron Age pottery was recovered from 25 contexts (Table 3). The pottery has been recorded following standard OA procedures and PCRG (1997) recommendations.

The pottery from the pit alignment was highly fragmented and often abraded, with a very low mean sherd weight of 2.6 g. The overwhelming majority of the pottery was made from shelly fabrics that are likely to derive from the local Jurassic clays. Flint-tempered and limestone/organic-tempered fabrics also occurred. The material consisted almost entirely of plain body sherds, although there was a single rim with a slight internal lip which would be consistent with an early Iron Age date.

The material from grave 1179 and the western pit cluster was in a better condition (mean sherd weights 5.5 g and 6.7 g respectively). Both the upper and lower fills of the grave (1176 and 1177) contained refitting body sherds from a single vessel in a shelly fabric. The western pit cluster contained a small group of plain body and base sherds, again in shelly fabrics. The dominance of shelly wares is paralleled at other Iron Age sites in the Milton Keynes area such as Bancroft (Williams and Zeepvat 1994) and Pennyland (Williams 1993).

Medieval and post-medieval artefacts by John Cotter

A small assemblage of 50 sherds (470 g) of post-Roman pottery was recovered. The medieval pottery generally consists of small abraded sherds. These include local shelly wares (12th–14th century) among which are probable products of the Olney Hyde kilns. A few sherds of Potterspury ware (13–15th century) are also represented. Transitional late medieval (15th–16th century) wares are fairly common. The post-medieval assemblage consists largely of local wares and Staffordshire products, although there are also two sherds from imported vessels, one a mid-17th century Frechen stoneware 'Bellarmine' jug and the other a 16th–18th century Seville olive jar. Five fragments of 17th to 19th century clay pipes were also recovered.

Human remains by Sharon Clough

A single crouched skeleton (1178), radiocarbon dated to the middle Iron Age, was excavated from a grave (1179) dug into one of the silted up pits (1182) of the early Iron Age pit alignment (Fig. 3; Plate 2). The skeleton was near complete, but had suffered considerable post-depositional fragmentation, limiting retrieval of metrical data and the recognition of many non-metric traits.

Dental development (Moorees *et al.* 1963) aged the skeleton to older than twelve years, whilst

TABLE 3 Iron Age pottery fabrics

Fabric	*Description*	*No. of sherds*		
		Pit alignment	*Grave 1179*	*Western pit cluster*
F1	Moderate coarse angular flint	3 (6g)	–	–
F2	Moderate medium angular burnt flint, moderate quartz sand	3 (4g)	–	–
L1	Sparse coarse sub-angular limestone/chalk, moderate voids from chaff/grass	1 (17g)	–	–
S1	Sparse medium-coarse bivalve shell	31 (95g)	–	–
S2	Moderate medium-coarse bivalve shell	17 (41g)	36 (199g)	9 (60g)
S3	Common medium-coarse bivalve shell	26 (56g)	–	–
	Indeterminate	3 (2g)	–	–

epiphyseal fusion (Bass 1987, 15–19; Schwartz 2000) indicated a mean age of fourteen years. Age estimation using diaphyseal long-bone length (Maresh in Hoppa 1992) could not be utilised due to the fragmentary nature of the long bones. Sex determination in this subadult was not attempted, in accordance with accepted osteological practice.

The skeleton showed evidence for iron deficiency anaemia. In this condition, the body attempts to compensate for low serum iron levels by hypertrophy of the bones containing marrow involved in red blood cell production. In children, this manifests itself osteologically as an increased porosity and thickening of the diplöe of the cranial vault (known as porotic hyperostosis) and of the orbital sockets (cribra orbitalia). Cribra orbitalia was observed in the left and right orbits of skeleton 1178, while porotic hyperostosis was present bilaterally on the occipital and parietal bones of the skull. Cribra orbitalia is widely thought to occur in response to a deficiency of iron during childhood, most commonly the result of inadequate dietary intake of iron, and/or as a result of severe intestinal parasite infestation (Stuart-Macadam 1991, 101). It is seen more commonly in sub-adults than in adults (Ortner 2003, 102) and was a common condition in prehistoric sub-adults throughout the world. It is often used as a generic indicator of physical stress in childhood.

The dentition showed a high dental caries rate for this period: four out of the total of 29 crowns present (13.8%). The crown of one other tooth was completely lost, the root alone remaining. The crown may have been destroyed by a large carious lesion, but equally may have been lost through other causes (such as trauma), and hence has not been included in the caries prevalence.

***Faunal remains* by Kristopher Poole**

A total of 79 refitted animal bone fragments (401 g) were hand-recovered from Iron Age contexts. Material was identified using the OA reference collection along with relevant identification manuals (Schmid 1972). Attempts were made to identify all bone fragments to element and species, although ribs, vertebrae (except atlas and axis), and skull fragments were classed as large-mammal, medium-mammal or small-mammal sized. Bones were recorded using the zoning system of Serjeantson (1996). Methods employed for ageing specimens were dental eruption/attrition, and epiphyseal fusion. Grant's methods (1982) were used for recording tooth wear in cattle and sheep, with wear stages for sheep being assigned using standards set out by Payne (1973; 1987). Fusion data was used to assign ages to cattle and sheep using data given by Getty (1975). Rodent remains from the environmental samples have not been considered as they appear to represent relatively recent intrusive material.

The faunal remains were highly fragmented, with bone condition ranging from fair to very poor, the majority being poor. As a result of this, only 20 specimens could be identified to species and element, the remainder consisting of large and medium mammal-sized long bone fragments, and unidentified fragments (Table 4). Cattle, sheep/goat and pig were the most frequent species, but horse was also present, as was deer, the latter represented by two antler fragments, although these were too eroded to ascertain particular species.

Most identified elements were mandible fragments and loose teeth. No ribs or vertebrae were recovered, whilst two cattle femora, a cattle humerus and a pig tibia were the only long bones identified. Mandibles are one of the densest skeletal elements, whilst enamel is the hardest, least porous substance within the mammalian skeleton (Lyman 1994). Bone density therefore seems to be the major factor behind anatomical representation of species within the pits. The condition of the material, level of fragmentation, and body-part patterns are all indicative of bone lying around on the surface, subject to weathering, trampling and carnivore damage, before falling into the pits through erosion and other natural processes.

TABLE 4 Summary of faunal assemblage from Iron Age features, quantified by Number of Identified Specimens (NISP)

Species	*NISP*
Cattle	7
Pig	5
Sheep/goat	4
Horse	2
Deer	2
Large mammal	20
Medium mammal	8
Unidentified	31
Total	**79**

The fragmented nature of bones and teeth also meant that little ageing information was available. A cattle proximal femur was fused, thus coming from an animal aged at least 36–42 months old at death, whilst a sheep/goat mandible and loose mandibular second molar came from animals between two and three years old at death. No measurements could be taken.

ENVIRONMENTAL EVIDENCE

Charred plant remains **by Rebecca Nicholson**

A total of 22 bulk samples of between 5 and 40 litres in size were taken from cleaned half-sections through two of the Iron Age pits from the pit alignment (1131 and 1217), and from the fill of inhumation 1179. The samples were processed using a modified Siraf flotation machine with the residues collected in a 500 µm mesh. While the standard sample size was 40 litres per context, the smaller samples represent fine banding within the fills. Flots were collected onto a 250 µm mesh, air-dried and examined under a binocular microscope. The presence of any cereal grains, cereal chaff, weed seeds, charcoal and molluscs was quantified.

Without exception, the pit fills were rich in molluscs and comminuted charcoal, but contained very few, or no, charred cereals or weed seeds. Many samples did, however, contain unburnt, very well-preserved small rodent bones and uncharred straw, seeds and insect fragments, indicating a degree of intrusion, probably due to burrowing. Three samples from pit 1131 (contexts 1135, 1141 and 1143) contained clinkered fragments of cereal grain, probably from *Triticum sp*. (wheat). Charcoal, though abundant, was generally under 2 mm and not readily identifiable to taxon, although oak was identified in several samples and Maloideae (apple/pear family) in context 1143. The sample from the inhumation burial (context 1177) contained only small fragments of charcoal and comminuted cancellous bone.

With the exception of charcoal, the charred plant material is very limited, and suggests that crop processing activities were probably not carried out in close proximity to the pits. The similarity in the charred plant assemblages between the fills suggests a degree of reworking, and it is possible that the majority of charcoal derived from a single clearance event, such as the burning of vegetation prior to the construction of the pit alignment. Subsequent incorporation of charcoal into the fills could have taken place through erosion of surface deposits.

Molluscs **by Elizabeth Stafford**

Twelve samples were examined for molluscan remains. All of the samples derived from the fills of pit 1125, which formed part of the Iron Age pit alignment (Fig. 4, Section 3). Sample volumes ranged from 0.26 to 1.5 litres. Each sample was disaggregated in water, floated onto 0.5 mm nylon mesh and air-dried. The residues were also retained to 0.5 mm. The flots and residues were then scanned under a binocular microscope at magnifications of x10 and x20 and an estimate of abundance recorded. An estimate was also made of the total number of individuals in each flot as well as the number per litre of sediment (Table 5). Nomenclature follows Kerney (1999) and habitat information has been indicated following Evans (1972; 1984).

The primary fills may give some indication of the environment at the time the pit was dug. Layers 1123 and 1122 contained only sparse assemblages, however, probably a reflection of initial rapid erosion from around the feature edges. Open-country grassland snails *Vallonia excentrica, Vertigo pygmaea* and the catholic species *Trichia hispida* were present, perhaps indicating this environment was rather open. Occasional specimens of shade-demanding species *Carychium tridentatum*, *Vitrea* spp. and a single apice of *Clausilia bidentata* may however be an indication of denser vegetation nearby.

Further up in the profile of the pit (layers 1251, 1250, 1249, 1248 and 1246) shell abundance varied, probably reflecting intermittent periods of erosion and stability. The sample from fill 1251, a dark brown silty clay, contained approximately 80 individuals. The most abundant species were *T. hispida* and the predatory zonitids *Vitrea* spp. (the majority of which appeared to be *V. contracta*), and *Oxychilus cellarius*, common in the initial stages of feature colonisation. Both open-country grassland species *V. excentrica* and *V. costata* were also present in numbers. The assemblage at this level probably reflects the existence of bare unstable surfaces within the feature.

The fills above 1249 contained similar assemblages to those below, though with a gradual trend

TABLE 5 Land snail assemblages from Pit 1125

Context		**1123**	**1122**	**1251**	**1250**	**1249**	**1248**	**1246**	**1120**	**1119**	**1244**	**1118**	**1117**
Volume floated (litres)		**0.75**	**1.5**	**1.5**	**0.26**	**0.5**	**0.8**	**1**	**1.25**	**1.1**	**0.625**	**1.5**	**1.5**
Estimated no. individuals		**10**	**7**	**80**	**4**	**80**	**40**	**120**	**600**	**170**	**60**	**250**	**250**
Estimated no. individuals per litre		**13**	**5**	**53**	**15**	**160**	**50**	**120**	**480**	**155**	**96**	**167**	**167**
Carychium tridentatum (Risso)	s	+		+		+++	+	+++	+++++	+++++	+++	++++	++
Cochlicopa spp.	c					++		+	++	+	+	+	+++
Vertigo pygmaea (Draparnaud)	o		+	+								+	
Vallonia costata (Müller)	o			++		+	++	++	++	+	++	+++++	+++++
Vallonia excentrica (Sterki)	o	++	++	++	+	++		++	+++	+++	++	+++	+++++
Acanthinula aculeata (Müller)	s											+	+
Ena obscura (Müller)	s			+				+	++	+		+	++
Punctum pygmaea (Draparnaud)	c					+			+	+		+	++
Discus rotundatus (Müller)	s					+		+	++	++	+	++	+
Vitrina pellucida (Müller)	c			+		+		+	++		+	+	+
Vitrea spp.	s		+	+++	+	+++	+++	++++	+++++	++	++	+++	++
Nesovitrea hammonis (Ström)	c			+					++				
Aegopinella pura (Alder)	s								++++	+		++	+
Aegopinella nitidula (Draparnaud)	s			+		++	+	++	+++	+++	+	+++	++
Oxychilus cellarius (Müller)	s			++		++	+	++	++++	++	++	++	
Cochlodina laminata (Montagu)	s									++			++
Clausilia bidentata (Ström)	s	+				+			+++	+			
Helicella itala (Linné)	o				+		++	++	++	+	+	++	++
Trichia hispida (Linné)	c	+		+++		++	++	+++	+++++	++	++	+++	++++
Cepea/Arianta spp.	c			+	+		+	+	+	+	+		+
Cepea spp.	c									+			

s = shade-demanding species	+	1–3
c = catholic species	++	4–10
o = open-country species	+++	11–25
	++++	25–50
	+++++	>50

up the profile to increasing shell abundance and diversity, reflecting increased stability and a reduction in the rate of erosion. Shade-demanding and catholic species begin to predominate, reflecting progressively shaded conditions and the growth of vegetation within the feature. From and above fill 1249 *C. tridentatum* increases significantly in abundance, and additional species include occasional *Discus rotundatus,* the rupestral species *C. bidentata* and *Ena obscura*, albeit in low numbers. A significant increase in shell abundance was noted in fill 1120 suggesting more stable conditions of soil formation. Open country species were however consistently present in low abundance, comprising *V. excentrica* and *V. costata* and occasional *Helicella itala.* The faunas at this level may reflect the external environment as well as that of the pit. The character of the assemblages suggest the growth of denser vegetation, but do not have the character of full woodland faunas. For example, there were very few *D. rotundatus*, a common woodland species. The most numerous species at this level, *C. tridentatum*, readily flourishes amongst tall grass. While it is possible that the faunal changes were a result of general but incomplete scrub development they could also have been caused by vegetation growth in the immediate vicinity of the pit against the background of a more open landscape. The changes could have been associated with a tree or shrub, indicated by the adjacent ‘tree-throw hole’ 1128.

Following context 1120 there is a reduction in shell abundance perhaps suggesting increased erosion or disturbance of the feature edges. There is also gradual decline in abundance of shade-demanding species accompanied by an increase in open country and catholic taxa. *V. costata* becomes more abundant, followed by *V. excentrica* in fill 1117. These changes in the upper levels of the pit may represent the development of more open conditions, possibly grassland in the vicinity of the feature. However it is also possible that as the feature became shallower the assemblages become more influenced by general environment rather than the microenvironment of the feature itself. Stratigraphic evidence would suggest that adjacent 'tree-throw hole' 1128 had silted up by the time of the formation of fills 1117 and 1118.

Radiocarbon Dating

Two samples were submitted to the Poznan Radiocarbon Laboratory, Poland, for accelerator mass spectrometry (AMS) dating (Table 6). The dates were calibrated using OxCal v3.10 and atmospheric data from Reimer *et al.* (2004). Both samples gave two possible date ranges due to the 'wiggles' present in the calibration curve for the first millennium BC.

Discussion

The pit alignment at Olney is an example of a class of monument widely found in the Midlands (Boutwood 1998; Knight 1984, 259–62; Pollard 1996; Thomas 2003; Waddington 1997). A number have now been investigated in the Great Ouse Valley, for example at Fenny Lock (Ford and Taylor 2001) and Gayhurst Quarry (Zeepvat 2002), Milton Keynes; Biddenham Loop, Bedfordshire (Luke and Dawson 1997); and Meadow Lane, St Ives, Cambridgeshire (Pollard 1996). Their purpose is imperfectly understood, but they are assumed to demarcate boundaries, whether 'functional', social or ritual. Some examples run across the landscape for more than a kilometre, and appear to form part of wider systems of land division (Thomas 2003).

While pit alignments are often difficult to date due to a lack of associated artefacts, the majority seem to belong to the late Bronze Age or early Iron Age. At Olney, radiocarbon dating has indicated that the initial fills of the monument formed at some point during the 8th to 5th centuries cal BC. This corresponds well with the evidence from the nearest other excavated alignment, that at Gayhurst Quarry (6 km to the south-west), where a radiocarbon determination of 800–520 cal BC has reportedly been obtained for the final infilling of one of the pits (Zeepvat 2002, 148).

The rectangular, flat-based form of the pits at Olney is shared by many late Bronze Age/early Iron Age pit alignments. The pits are very regular and a great deal of care was clearly taken in their construction. However, once they had been dug the pits were left to infill naturally, with no evidence for recutting. The fill sequences showed that material entered the pits from all directions, suggesting that the alignment was not flanked by an earthwork bank.

The mollusc evidence from pit 1125 indicates that the pit alignment lay within a relatively open environment. Although a small cluster of pits and postholes was located to the west of the alignment, the impression is that only limited activity took place in the immediate area while the pits were filling. The finds from the pits were modest, consisting of small quantities of fragmented and abraded pottery and animal bone, and must represent incidental inclusions resulting from in-wash and erosion of the surrounding ground surfaces.

Long after the alignment had been constructed, when the pits had largely silted up, an adolescent inhumation burial was inserted into pit 1182. A radiocarbon determination from the skeleton places it securely in the middle Iron Age, with a clear gap

Table 6 Radiocarbon determinations

Lab no.	*Context*	*Radiocarbon age BP*	*δ^{13}C (‰)*	*Material*	*Context type*	*Calibrated date range (95% confidence)*
Poz-14682	1178	2125 ± 35	–17	Articulated human bone	Inhumation burial	350 BC (10.8%) 300 BC 210 BC (84.6%) 40 BC
Poz-15081	1143	2483 ± 35	–27.1	Charcoal (non-*Quercus*)	Lower fill of pit 1131	780 BC (90.7%) 480 BC 470 BC (4.7%) 410 B

of 60 years between the calibrated date ranges (at 95% confidence) from the skeleton and the lower fill of pit 1131. This indicates that at least two generations, and probably more, had elapsed between the construction of the alignment and the insertion of the burial. Clearly, the pit alignment continued to hold significance over a long period, even though it had apparently been left to nature. There is evidence from some other sites that pit alignments were similarly reaffirmed by burials or other 'special deposits' during the later Iron Age, when the pits had become no more than shallow hollows. For example, at Biddenham Loop, Bedfordshire, a crouched inhumation ascribed to the middle Iron Age was cut into the top fill of one of the pits of a late Bronze Age/early Iron Age alignment (Luke and Dawson 1997). At Gretton, Northamptonshire, a hoard of iron currency bars dating to the later Iron Age was deliberately deposited at the edge of a largely infilled pit (Jackson 1974). Further afield, at Nosterfield, North Yorkshire, a disarticulated human skeleton placed in the uppermost fill of one of the pits has been radiocarbon dated to the late Iron Age or Roman conquest period (Copp and Toop 2005). At a number of other sites in the Midlands, pit alignments dating to the late Bronze Age or early Iron Age were recut as ditches during the later Iron Age, emphasising the continued significance of these boundaries (Thomas 2003).

As only a 115 m length of the Olney pit alignment has been uncovered, its wider landscape context is unclear. However, it has been observed that pit alignments often show a relationship to rivers, either running parallel to them or running off at right angles (Boutwood 1998; Thomas 2003). Examples which show a relationship to the River Great Ouse include Eynesbury (Ellis 2004) and St Ives (Pollard 1996) in Cambridgeshire, where the alignments run parallel and directly adjacent to the flood plain, and Biddenham Loop (Luke and Dawson 1997; Malim 2000, fig. 8.16) and Felmersham (Bedfordshire SMR 2662) in Bedfordshire, where they cut off bends in the river. The Olney alignment lies 1 km to the west of the present course of the Ouse, and thus it is conceivable that it could have continued to meet the river. The alignment also runs roughly parallel to a small tributary stream of the Ouse, 300 m to the north-east, although any relationship to either watercourse remains unproven.

A further aspect of the landscape context of pit alignments, which has hitherto received little attention in the published literature, is the fact that they often show relationship to much earlier features such as barrows or ring ditches. A notable example is Eynesbury, where the alignment cut the edge of both a hengiform ring ditch and a long barrow, with the pits cutting these monuments being singled out for structured deposits including complete pottery vessels and a human skull fragment (Ellis 2004). At many other sites, pit alignments are oriented on, or carefully weave between, groups of earlier prehistoric barrows, for example at Barnack, Cambridgeshire (Mackreth and O'Neill 1979), Tallington, Lincolnshire (French *et al.* 1993) and the Cotswold Community site on the Gloucestershire/Wiltshire border (OA 2004). The implication is that the pit alignments were laid out so as to incorporate these pre-existing features, which no doubt formed significant nodes in the 'mythological landscape' of local communities (Barrett 1999).

At Olney, there is no evidence to suggest that the pit alignment was oriented on any earlier monuments. However, some mention should be made of the probable tree-throw hole (1128/1130) on the path of the alignment. Although the stratigraphic relationship of this feature to the pits was slightly ambiguous, it seems possible that a tree stood here when the alignment was first laid out. A lone tree in an otherwise essentially open environment could have been a prominent landscape feature, and might thus have influenced the course of the alignment.

The archive

At the time of writing, the finds and site archive were held by OA, pending deposition with Buckinghamshire County Council.

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