Field End, Witchford: Middle–Late Bronze Age funerary activity, settlement and bronze-working on the Isle of Ely

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Illustrations by Gillian Greer

Excavations at Field End, Witchford, have revealed significant evidence of Middle and Late Bronze Age funerary practices, including a mixed cemetery of 35 cremation burials and four inhumations during the Middle Bronze Age and a smaller cemetery of four cremations in the Late Bronze Age. Of note was a grave containing a young female and pre-term neonate, enclosed within an unusual post-built mortuary structure, positioned to the north of the Middle Bronze Age cemetery. Unenclosed settlement also occurred during the Late Bronze Age, characterised by scattered pits, four- and six-post structures and small wells, with the main cluster of features being located close to the contemporary cremations. Sword mould fragments recovered from two separate features, a pit and a well, provide rare evidence of sword production on or near to the site. The funerary and settlement remains are significant in terms of pre-Iron Age land-use on the Isle of Ely, whilst the sword mould fragments provide a tangible link with the wealth of Bronze Age metalwork known from the Isle.

Introduction

Archaeological investigations at Field End, Witchford, on the northern side of the village (TL 4986 7916), began in 2014 with a geophysical survey (Walford 2014) and an evaluation, comprising 18 trenches, undertaken by Oxford Archaeology East (OA East). The evaluation identified a group of ten un-urned cremations in the centre of the site and an area of Late Bronze Age settlement to the south-east (Phillips and Green 2014). The subsequent excavation by OA East in August–September 2016 revealed funerary evidence and settlement remains spanning the Middle–Late Bronze Age (*c.* 1500–800 BC). The overall results of the excavation and the methodologies employed are fully detailed in the archive report (OA East Report no. 2112; Blackbourn 2018), which is available to download from the OA library <https://library.thehumanjourney.net>. The project archive will be deposited with Cambridgeshire County Council under the Cambridgeshire Historic Environment Record (CHER) code ECB4772.

The Site within the Isle of Ely

Located on the northern side of Witchford, the site is bounded by Field End to the south and by the A142 to the north (Fig. 1). Witchford sits towards the western end of the Isle of Ely, a low 'island' which rises above alluvium-covered Fen. Extending north-east to Ely and west to Sutton, the Isle rises locally from 4m OD at the Catchwater Drain, to 16m OD approximately 0.5km west of the study site. The Catchwater Drain extends sinuously through Grunty Fen to the south of the village and is a partially canalised tributary of the River Great Ouse, which is located 4.5km to the east. Within the site, the land sloped gently upwards from the south at around 8.2m OD, to the north at approximately 9.3m OD. At the time of excavation, the study area was undisturbed farmland.

Geologically, most of the Isle of Ely is located on solid geology of Kimmeridge Clay Formation (mudstones of the Jurassic Period), including Witchford and the site itself. Parts of the higher ground, including Field End, are overlain by glacial deposits of diamicton belonging to the Oadby Member <http://mapapps.bgs.ac.uk/geology ofbritain/home.html>.

Prehistoric land-use and settlement on the Isle of Ely

Until recently there has been very little evidence for Pre-Iron Age settlement on the Isle of Ely, with Neolithic and Early Bronze Age activity restricted to findspots and known barrow sites, including an example on the north-east edge of Ely, excavated in the 1950s (Trump 1959; CHER 06136; Fig. 2). There are now a small number of sites where early prehistoric features have been recorded, including Stirling Way, 1.6km east of the current site, where Late Neolithic to Early Bronze Age activity comprised two Beaker pits and a flint scatter of the same date (Atkins 2011; MCB 19372). Further afield, to the north of Ely, two natural hollows containing Neolithic pottery and a background spread of residual finds in later features were recorded (Phillips and Morgan 2015; CHER ECB4413), while a pair of small pits containing Early Neolithic

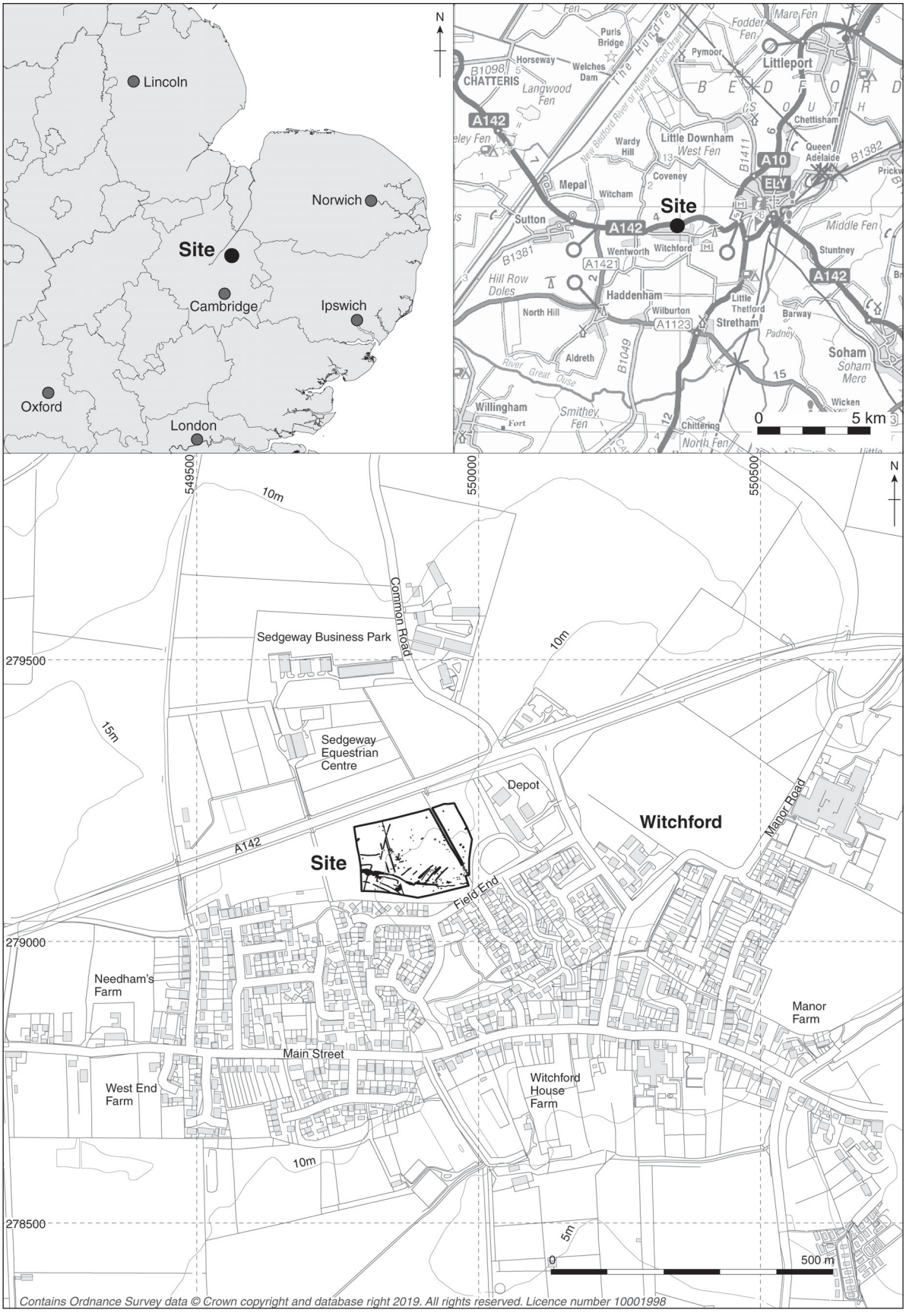

Figure 1. *Site location showing all features.*

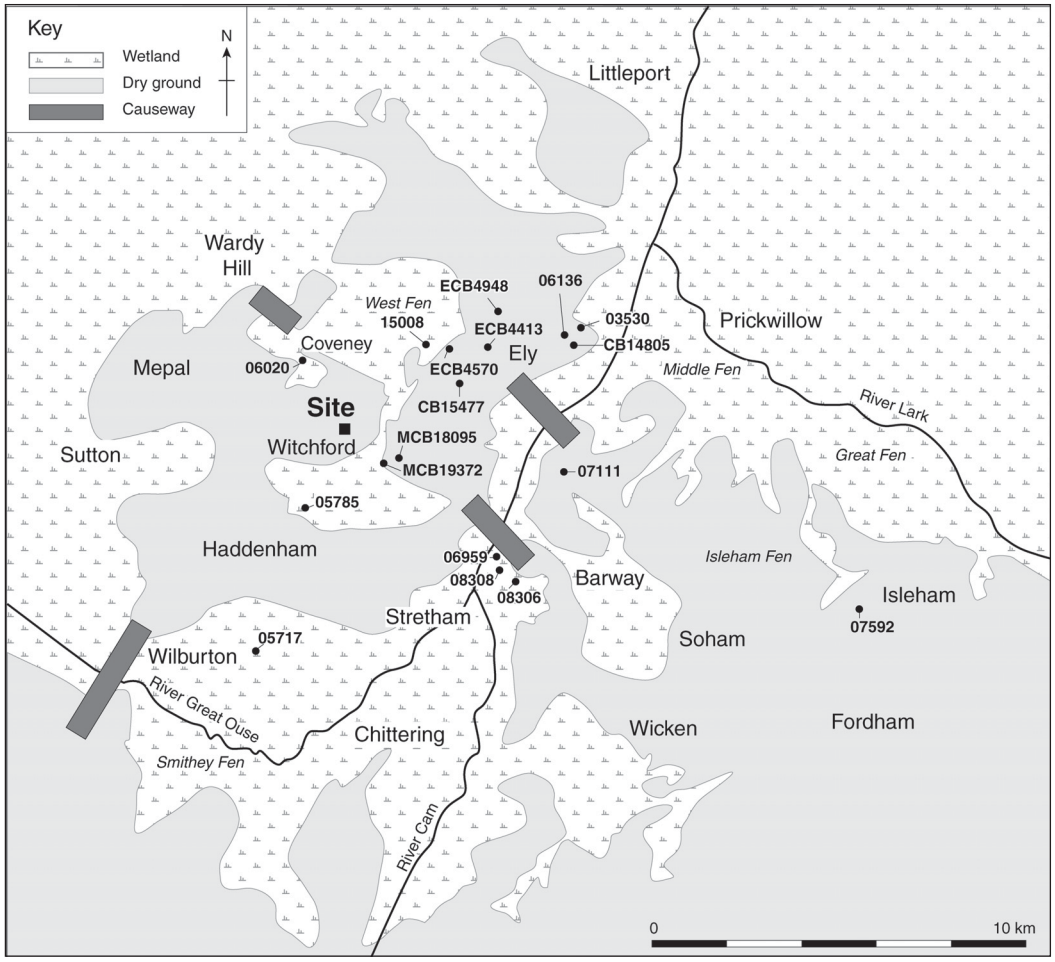

Figure 2. *The Isle of Ely with CHER entries and locations of possible causeways (after Barrowclough 2013).*

plain bowl pottery were found during excavations at West Fen Road, Ely (Mortimer *et al.* 2005, 15; CHER CB15477).

Evidence for settlement dating to the Middle–Late Bronze Age, and even into the Early Iron Age, has been equally scarce, although the picture is gradually changing due to the increasing amount of excavation in this area. Evans (2003, 23–24) suggested a possible Late Bronze Age phase at the Iron Age ringwork at Wardy Hill, Coveney, based on a small quantity of pottery and an assemblage of residual lithics. Evans also noted that Late Bronze Age (Post-Deverel Rimbury) pottery had been recovered in association with possible pond features at Trinity Lands, West Fen Road (Masser 2001).

Local to the current site, a series of ditches, gullies and pits of Late Bronze Age to Early Iron Age date were uncovered 2km south-east, at Lancaster Way Business Park (Simmonds and Mason 2008; CHER MCB 18095). An enclave of Middle–Late Bronze Age settlement has emerged on the north-west side of Ely, including at the Isle of Ely School site where a large Middle Bronze Age enclosure has been excavated, with evidence for middening in at least one enclosing ditch (Phillips and Morgan 2015; CHER ECB4413). Within the enclosure were the remnants of post-built structures, while a small number of pits and a waterhole were found nearby. To the north of the school site, recent excavations have uncovered Late Bronze Age settlement features, comprising at least three post-built structures, several pits and a large waterhole (Moan and Phillips 2018; CHER ECB4948). Archaeological works prior to construction of the new Ely Leisure Centre, also in north-west Ely, have uncovered further Late Bronze Age activity in the form of 35 discrete features including a well, small pits and postholes (Robinson Zeki 2018; CHER ECB4570).

In contrast to the relatively limited evidence for settlement, the Isle of Ely and surrounding fen areas have a very rich record of Middle–Late Bronze Age metalwork, including individual items and several major hoards. Much of this is focused on the course of what was the River Cam (now Great Ouse) as it passes east of the Isle, with major concentrations at Little Thetford, Stuntney (Clark and Godwin 1940; CHER 07111) and Barway (Barrowclough 2013; CHER 06959, 08306, 08308), as well as in the major 'fen basins' of the Isle – at West Fen/ the Cove and Grunty Fen, and from the fenlands to the south of Wilburton. Within

Grunty Fen, between the villages of Wilburton and Witchford and only 2km south of the current site, a hoard was discovered in 1844. Dating to the Middle Bronze Age, the metalwork consisted of three looped axes overlying a gold torc (Von Hugel 1908; CHER 05785). A much larger, Late Bronze Age hoard of 163 items, which included palstaves, socketed axes, spearheads, and sword fragments, was discovered to the south of Wilburton (Evans 1885; CHER 05717). The Isleham hoard, found by a farmer in 1959, is the largest in Britain with *c.* 6500 items of bronze, including swords, spearheads, axes, palstaves, knives, decorative equipment and many fragments of sheet bronze (Britton 1960; CHER 07592). Also worth noting here are two Bronze shields found at an unknown location within Coveney Fen, approximately 3–4km north-north-west of Witchford (Hall 1996; CHER 06020). The distribution and character of this metalwork, and the location of deposition – on land or in water, adjacent to rivers or next to possible causeways (see Fig. 2) – has been discussed elsewhere (Yates and Bradley 2010; Barrowclough 2013).

During the Middle and Late Iron Age there is evidence for a much higher density of settlements, with enclosed farmsteads recorded across the Isle including nearby at Stirling Way (Atkins 2011; MCB 19372) and Lancaster Way Business Park (Patten 2015); to the north at Wardy Hill, Coveney (Evans 2003); on the higher ground in Ely at Prickwillow Road (Atkins and Mudd 2003; CHER CB14805); adjacent to Highflyer Farm (Taylor 2011; CHER 03530); closer to the fen edge at West Fen Road (Mortimer *et al.* 2005; Mudd and Webster 2011; CHER CB15477), and Hurst Lane Reservoir (Evans *et al.* 2007; CHER 15008).

The Excavation

The 2.7ha excavation revealed four principal phases of activity, spanning the Early Bronze Age – Early Iron Age, although the main phases of use occurred during the Middle and Late Bronze Age (*c.* 1500–800 BC) and it is the remains from these phases which form the focus of this article. The earlier evidences, including a small assemblage of Neolithic flintwork and a group of three pits and a posthole, dated as Early Bronze Age on the basis of ceramic evidence (41 sherds, 192g), are described in the archive report, and not illustrated here (see Blackbourn 2018). The same applies to later land-use on the site; part of a Late Iron Age/Early Roman field system was mapped in the south-west corner of the site and medieval/post-medieval ridge and furrow extended over the northern half.

Sixteen radiocarbon dates were obtained, most of which were from human bone in Bronze Age funerary contexts (Fig. 3). Where referenced in the text, calibrated radiocarbon dates are presented at 95% probability with their calibrated date ranges rounded outwards to decadal endpoints (Mook 1986).

The excavation results are set out below, along with full details of the human remains (Zoë Uí Choileáin). Summaries or extracts from the following specialist reports are also included: lithics (Lawrence Billington), environmental remains (Rachel Fosberry), faunal remains (Zoë Uí Choileáin) and worked bone (Ian Riddler).

Middle Bronze Age Funerary and Occupation Evidence

With Zoë Uí Choileáin

Summary

Apart from a small number of pits, the bulk of evidence for Middle Bronze Age (*c.* 1500–1150 BC) activity came from Cemetery 1, a mixed cemetery of both cremation and inhumation burials located centrally within the excavation area. A fairly substantial assemblage of Middle Bronze Age pottery (317 sherds, 651g) was recovered from these features, including a number of the cremation burials.

Cemetery 1

The cemetery (Fig. 4) comprised 35 cremation burial pits, all unurned with the exception of two pits (Table 1), along with four graves containing the remains of five inhumed individuals. Located in the centre of the site, the unenclosed cemetery covered an overall area of 19m by 17m, separated into three burial groups based on their spatial distribution.

Due to the weights of burnt bone present, which ranged from 1g to 3562g with a mean weight of 588g, the majority of the cremations are considered truncated and the predominance of fully oxidised bone indicates that pyre temperatures were in general above 600 degrees. All of the cremation burials contained a single individual, with the exceptions of pits 331 and 334. Generally, the cremation pits contained a single fill and approximately 30% of the cremation deposits contain significant volumes of charcoal, which represent collected pyre material. Nine cremation deposits contained charred cereal grains, present as single specimens and nine also contained charred tubers of onion couch grass (*Arrhenatherum elatius* ssp. *bulbosus*), a grassland plant that forms bulbous tubers just below the soil surface. The burnt tubers are commonly found in cremation deposits, particularly in the Bronze Age, and are thought to represent de-turfing around the pyre-site to create a fire break (Stevens 1998) or may simply have become carbonised due to proximity to the pyre. Radiocarbon dates from Cemetery 1 suggest both inhumation and cremation burial was taking place at the same time, while two late dates indicate use of the cemetery at the end of the Middle Bronze Age or beginning of the Late Bronze Age.

Burial Group 274

The most northerly group comprised 24 cremation burials and two inhumation graves clustered tightly within an area measuring *c.* 7m by 4m. Grave 282 contained a juvenile skeleton (Sk 283; Fig. 5) 7–8 years of age, orientated north to south and facing west in a tightly crouched or flexed position. The skeleton is

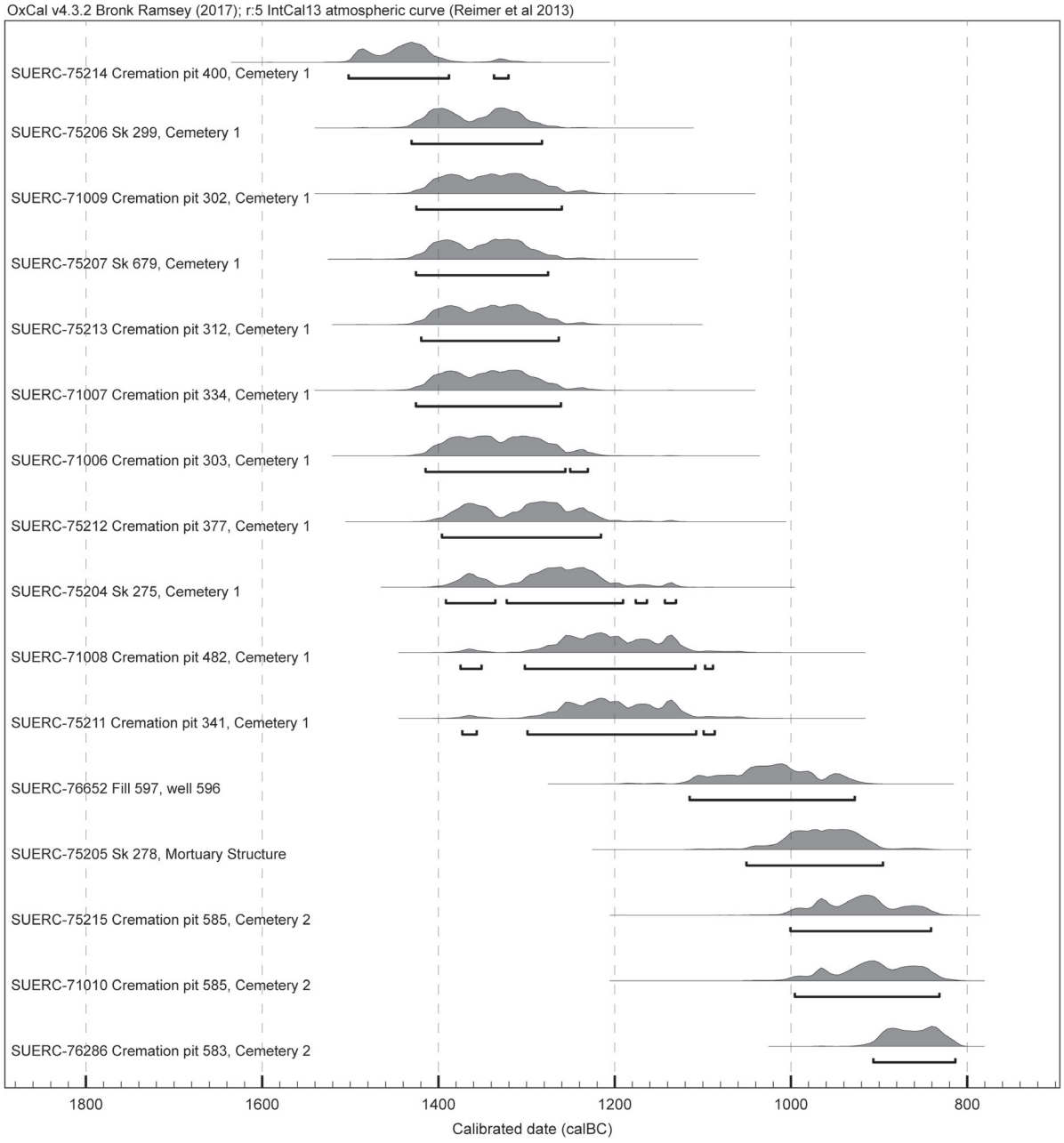

Figure 3. *Probability distributions for radiocarbon dates (95% probability).*

26–50% complete and highly fragmented; the condition of the cortical bone represents McKinley's grade 3 (Brickley and McKinley 2004, 16, fig. 16). Large caries can be observed on the occlusal surface of both mandibular deciduous 2nd molars. There are no other caries present on the teeth and no other signs of dental disease, therefore this may represent a genetic weakness as opposed to any dietary causes.

In contrast, grave 274 contained two skeletons; the partial remains of a subadult skeleton (Sk 275) aged by an unfused femur, calcaneus and ulna to between 12 and 14 years of age and an adult skeleton (Sk 679). Measuring only 9cm deep, the grave was heavily disturbed with only approximately 25% of each individual remaining and in both cases the bone was in poor condition (McKinley grade 3). Consequently, the two skeletons are not illustrated here. Skeleton 275 comprised the left arm and both legs, placement within the grave suggesting a crouched position with the head to the north. A fragment of left leg returned a radiocarbon date of 1400–1130 cal. BC (SUERC-75204; 3021±30 BP). Skeleton 679 was largely represented by ribs and a right arm. Rib position suggests that the skeleton was supine with the head to the north. A fragmented but fused distal epiphysis of the right humerus survives. Thus the general size and robustness

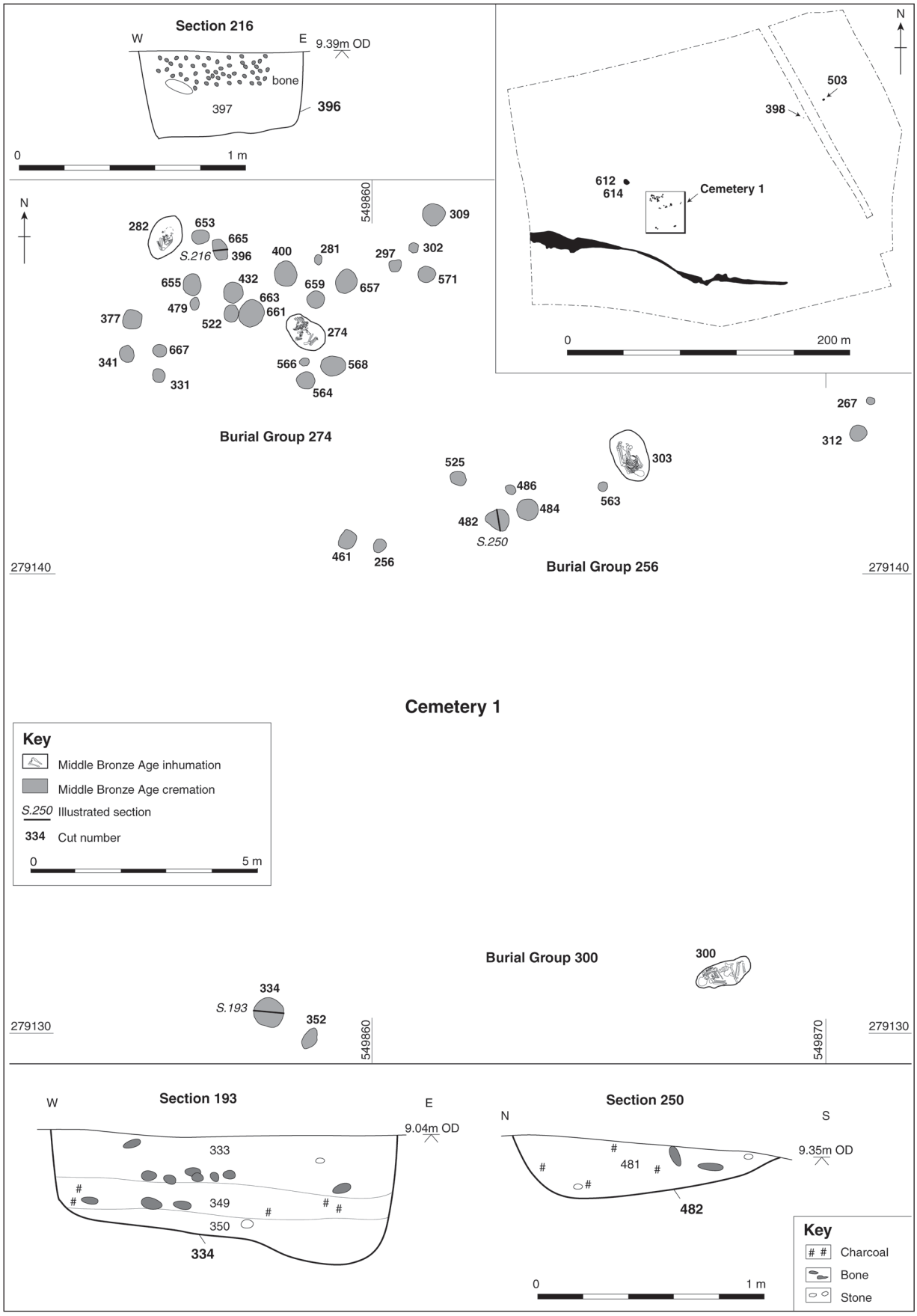

Figure 4. *Middle Bronze Age, Cemetery 1.*

***Table 1**. A summary of the cremation burials from Cemetery 1.*

Group	Cut	Fill	Depth (m)	Largest fragment size (mm)	MNI	Age	Colour	Weight (g)	Weight (g) >10mm	Weight (g) 5-10mm	Weight (g) 2-4mm
256	256	255	0.13	29.06	1?	Adult	Primarily blue-grey	106	19	62	25
256	267	268	0.09	35.46	1	Adult	White-blue grey	315	75	164	76
274	281	280	0.08	48.41	1	Adult	White-blue	408	79	213	116
274	297	296	0.15	54.16	1	Adult	Primarily white -blue-black	956	457	347	152
274	302	301	0.10	40.90	1	Adult	Primarily white	489	202	176	111
274	309	310	0.08	65.74	1	Adult	White-blue grey	359	112	151	96
256	312	311	0.12	42.06	1	Adult	White-blue-grey	649	206	295	148
274	331	332	0.12	39.29	2	Juvenile and infant	Primarily white - blue-grey	464	91	174	108
300	334	333	0.23	40.80	2	Adult and juvenile	White-grey blue	3562	537	1067	268
		349							531	903	208
		350							-	-	48
274	341	342	0.17	52.52	1	Adult	White-dark blue grey	776	263	317	196
300	352	351	0.11	24.91	1	Adult	White-blue-grey	27	8	13	6
274	377	378	0.18	61.07	1	Adult	White-blue-grey black	658	202	256	200
274	396	397	0.15	20.1	1	Adult	Blue-grey-black	475	114	241	120
-	398	399	0.08	10	1	Adult	Primarily blue grey	16	4	8	4
274	400	401	0.24	116.68	1	Adult	Primarily white. Lower limb blue-grey	2178	119	667	320
274	432	433	0.11	47.68	1	Adult	White-blue white	705	105	360	240
256	461	460	0.10	44.56	1	Adult	White-pale blue	822	375	355	92
275	479	480	0.04	-	1	?	White	8	-	4	4
256	482	481	0.11	39.23	1	Adult	Primarily white	739	204	375	160
256	484	483	0.07	55.47	1	Adult	White-blue black	760	251	379	130
256	486	485	0.05	24.81	1		White-blue grey	13	3	8	2
274	522	523	0.13	37.70	1	Adult	White-blue grey	275	27	58	190
256	525	524	0.07	53.14	1	Adult	Primarily white	401	189	212	-
256	563	562	0.04	21.23	1		White	10	2	6	2
274	564	565	0.16	38.78	1	Adult	White-blue black	324	36	180	108
274	566	567	0.05	-	1	?	White	1	-	-	1
274	568	569	0.12	47.64	1	Adult	White-blue grey	1664	657	737	270
274	571	570	0.10	31.14	1	Adult	White	177	47	88	42
274	653	654	0.19	10	1		White	7	2	2	3
274	655	656	0.19	42.38	1	Adult	White-blue grey	1332	605	503	224
274	657	658	0.17	23.52	1	Adult	White	59	15	38	20
274	659	660	0.18	62.26	1	Adult	Primarily white	644	240	404	-
274	661	662	0.20	45.00	1	Adult	White-dark blue grey	704	119	329	256
274	663	664	0.18	48.64	1	Adult	Primarily white	1411	486	677	248
274	665	666	0.12	42.38	1	Adult	White-blue grey	14	6	8	-
274	667	668	0.09	-	1	?	White	1	-	-	1

of the bone suggests the skeleton was >18 years old at time of death. A fragment of the humerus returned a radiocarbon date of 1430–1270 cal. BC (SUERC-75207; 3089±30 BP).

The 24 cremation burial pits within this group measured between 0.2m and 0.55m wide and between 0.05m and 0.24m deep with vertical sides and concave or flat bases (Fig. 4, section 216). Burnt bone was recovered from all cremations ranging in weight from 1g to 2178g, with a mean weight of 577g, the difference in weights most probably due to the degree of truncation of cremation pits, but potentially also to do with recovery of material from the pyre. Cremation 331 contained two individuals; a proximal unfused tibia shaft and an unfused humeral epiphysis suggested an individual below 15 years of age (Schaefer *et al.*

2009), along with the much smaller phalanges and 1st molar tooth buds of an older infant around 3 years of age (±12 months). Also of note is the individual represented in cremation 655, tentatively recorded as a possible male by observations of fragmented orbital rim. Seven of the cremations contained evidence for Middle to Late Bronze Age pottery, although in very small quantities (12g in total). Four cremation burials from this group were radiocarbon dated, the earliest (400) dating to 1510–1320 cal. BC (SUERC-75214; 3160±32 BP). Cremation pits 302 (1430–1260 cal. BC; SUERC-71009; 3080±33 BP) and 377 (1400–1210 cal. BC; SUERC-75212; 3040±30 BP) returned firmly Middle Bronze Age dates, whilst the latest (341) dated to 1380–1080 cal. BC (SUERC-75211; 2980±32 BP), which indicates prolonged use of Cemetery 1, possibly into the Late Bronze Age.

Burial Group 256

Comprising nine cremation burials and one inhumation burial, the central group were buried on a roughly east-north-east to west-south-west linear alignment. Skeleton 304 (grave 303; Fig. 5) was the most complete skeleton and the only specimen to allow for a stature estimate. The condition of the cortical bone represents a 3 on McKinley's scale and whilst overall fragmentation levels were still high, some long bones remain complete. The skeleton was orientated north-west to south-east with the head at the south-east in a supine position and is that of a young male 17–25 years of age. The length of the humerus suggests a height of 161–170cm or 5 foot 2 inches to 5 foot 5 inches (Trotter 1970). The orbits and femoral neck show signs of mild cribra orbitalia and cribra femoralis, conditions which develop, it has been argued (Stewart-Macadam 1989), due to anaemia in infancy. Walker *et al.* (2009) have further suggested that a vitamin B12 deficiency in maternal diets is the most likely cause of megaloblastic anaemia in infants, resulting in the development of porotic hyperostosis and cribra orbitalia. Slight enamel hypoplasia can be observed on the 1st maxillary incisors, which is also suggestive of nutrient deficiency during childhood. Lamellar bone is present on the distal surfaces of both tibiae and fibulae and calcanei plus the distal lateral surface of both humerii. There are some signs of still healing infection on both tibae. It is also present on the interior surface of the upper ribs, primarily close to the neck on each rib. A fragment of the left tibia returned a radiocarbon date of 1420–1230 cal. BC (SUERC-71006; 3066±33 BP).

Only nine cremation pits were present within this group, measuring between 0.17m and 0.47m wide and between 0.04m and 0.13m deep. Profiles of the cremation pits were more varied with the majority having steep sides and a concave base (Fig. 4, section 250). Burnt bone was recovered from all nine cremations ranging in weight from 10g to 822g, with a mean weight of 350g. Three of the cremation burials contained Middle to Late Bronze Age pottery, with the most (104 sherds, 75g) coming from cremation pit 267. This was one of a pair located on the eastern edge of the group, both of which were believed to be urned. Within the base of pit 267, the base of the vessel was *in situ*, although even during excavation the vessel was very fragmented. During excavation of an adjacent pit (312) the outline, or more accurately, the shadow of a poorly-fired urn could be seen, although the shallow depth of the feature meant only the base had survived. When lifting was attempted the degraded vessel disintegrated meaning that only three sherds (2g) of Middle Bronze Age pottery were recovered. Bone from two cremation pits in this group was radiocarbon dated, the earliest (312) producing a date of 1420–1260 cal. BC (SUERC-75213; 3082±31 BP) and the latest (482) dating to 1380–1080 cal. BC (SUERC-71008; 2983±33 BP), which again suggests long-lived use of Cemetery 1.

Burial Group 300

A further 13m to the south, the final and smallest burial group comprised two cremation burials and a single inhumation burial located several metres to the east. Skeleton 299 (grave 300; Fig. 5) was in poor condition (McKinley grade 3–4) and the bone was again highly fragmented, although 50–75% of the skeleton is present. The individual is female, between 20 and 24 years of age based on observations of the auricular surface and tooth wear. The skeleton was orientated east to west with the head to the west and the body in a semi-flexed position. A fragment of femur returned a radiocarbon date of 1440–1280 cal. BC (SUERC-75206; 3100±30 BP).

Cremation burials 352 and 334 contrasted, not only in terms of size, measuring 0.27m and 0.61m wide and 0.11m and 0.23m deep respectively (Fig. 4, section 193), but also in the quantity of burnt bone, which ranged from 27g in cremation 352 to 3562g in cremation 334, with a mean weight of 1795g. Significantly, the remains in cremation 334 represented two individuals – the fused epiphyses of an adult individual and the 1st molar and premolar crowns of a juvenile around 5 years old (±16 months) were both recorded. Evidence for charred grains, tubers and charcoal was recovered from cremation 334, along with 1g of Middle to Late Bronze Age pottery. A fragment of femur from the same cremation returned a radiocarbon date of 1430–1260 cal. BC (SUERC-71007; 3082±33 BP).

Isolated cremation

A single cremation pit (398) was located 85m north-east of Cemetery 1 (Fig. 4, plan inset). It measured 0.17m wide and 0.08m deep with a small amount of burnt bone recovered from its single fill (16g). Also within the fill was a single sherd of Mid to Late Bronze Age pottery (1g).

Middle Bronze Age Pits

Three pits were dated to the Middle Bronze Age (Fig. 4, plan inset), one of which (503) was isolated in the eastern part of the site. Measuring 0.9m wide and 0.46m deep, the basal fill yielded six sherds (76g) of Middle Bronze Age pottery (Fig. 10, No. 1).

Two intercutting pits (612 and 614) lay to the north-

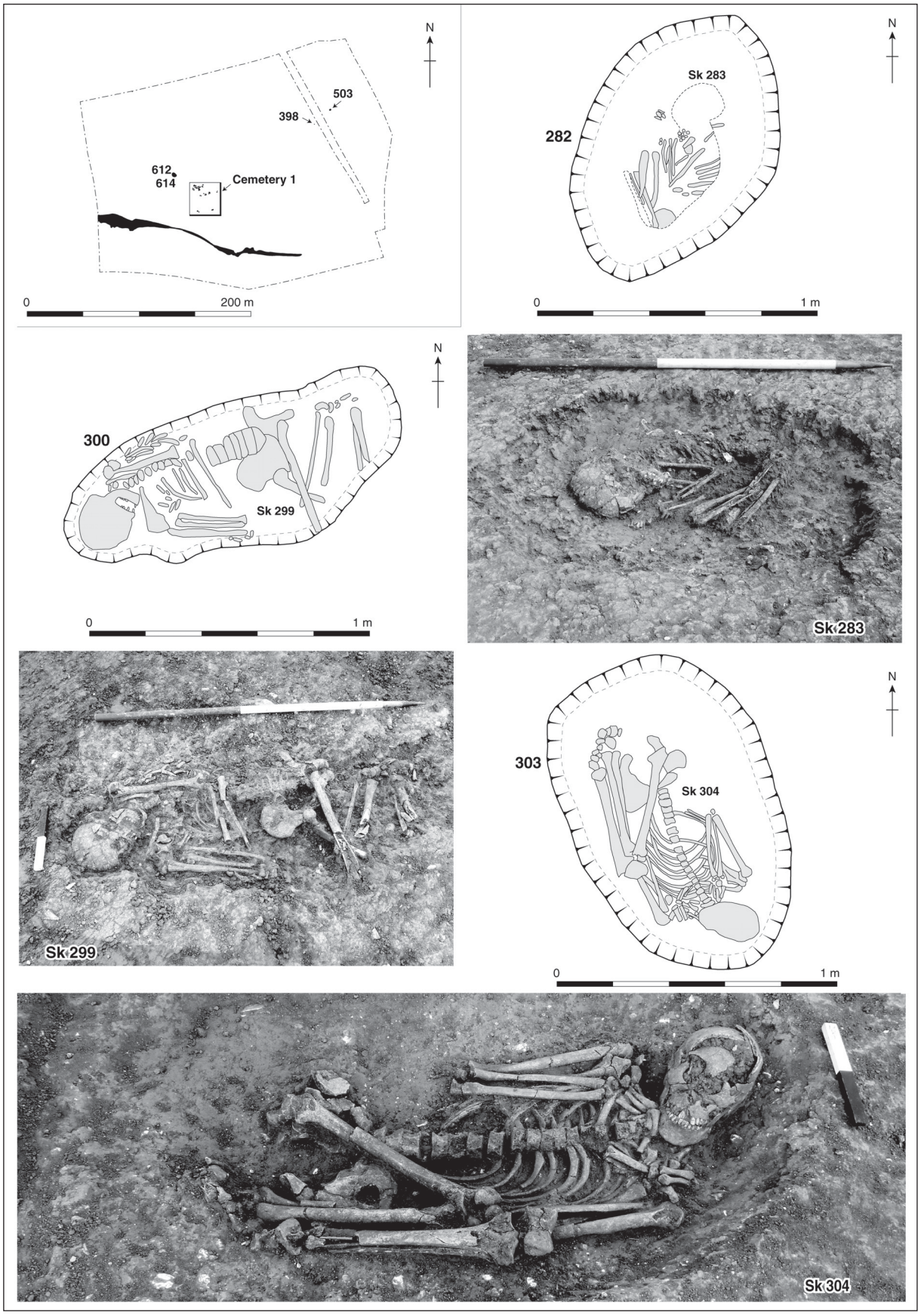

Figure 5. *Middle Bronze Age, selected inhumations from Cemetery 1.*

west of Cemetery 1. The larger, later pit (614), measured 2.6m wide and 0.58m deep and contained a relatively complex sequence of six fills, which yielded a total of 161 sherds (468g) of Middle Bronze Age pottery, 1620g of animal bone (predominantly cattle) and the preserved charred remains of eight wheat grains and a single barley grain.

Late Bronze Age Funerary and Occupation Evidence
With Zoë Uí Choileáin

Along with an inhumation burial set within a possible mortuary enclosure, a second cemetery formed of four cremation burial pits was identified in the south-east corner of the site (Cemetery 2) and dated to the Late Bronze Age (*c.* 1150–800 BC). Unenclosed settlement was also encountered (Fig. 6), with a particular concentration in the south-east corner of the site. A significant discovery was an assemblage of refractory debris from one or more sword blade moulds, recovered from two separate features on site, a pit and a well.

Late Bronze Age inhumation and mortuary structure
A single grave (277) was identified 17m north-west of Cemetery 1 (Fig. 7), containing the skeletons of an adult female (Sk 278) and a pre-term infant (Sk 680). Skeleton 278 was orientated south-west to north-east in a semi-flexed position with the head to the south-west, the skeletal remains being between 50 and 75% complete. While fragmentation was still high, the condition of the cortical bone was relatively good (Mckinley grade 2). There is no evidence of pathology bar a pinhole caries on the occlusal surface of the right 3rd mandibular molar. A fragment of ulna from Sk 278 returned a radiocarbon date of 1060–890 cal. BC (SUERC-75205; 2812±30 BP).

The precise location of the neonate bone (Sk 680) was not observed on site; although it was from around the pelvic area, it cannot be established whether the death of mother and child occurred during childbirth. Skeleton 680 was between 25% and 50% complete. A single maxillary 1st incisor tooth bud and the length of the right femur indicate that the infant was 35 weeks (± 2.04) old at time of death (Schaefer *et al*. 2009; 94, 266).

Enclosing grave 277 was a sub-circular post-built structure (434), which appeared to be directly associated with the grave (Fig. 7). Measuring 6.5m long and 4.5m wide, the main structure was formed by eight postholes, which ranged in size between 0.14m and 0.2m wide and between 0.05m and 0.11m deep. A further five postholes were identified immediately to the south-east and may represent an extension of this structure, or a funnel-shaped entranceway or porch. Only one of the postholes (448) contained any dating evidence, with a single sherd (1g) of residual Middle Bronze Age pottery being recovered.

Cemetery 2
Located in the south-east corner of the site, Cemetery 2 comprised four cremations (Table 2), clustered within an area that measured 12m x 8.5m (Fig. 8). The four cremations measured between 0.2m and 0.6m wide and between 0.08m and 0.12m deep, mostly with vertical sides and a flat base. Burnt bone was recovered from the single fill of all four cremations, ranging from 124g to 1267g with a mean weight of 501g. A single adult individual was represented in all four of the cremations and burnt bone was white blue grey in colour. These cremations contained no pottery or preserved plant remains, however, charcoal was present.

Two radiocarbon determinations were obtained from fragments of humerus and femur in cremation pit 585, which returned dates of 1000–830 cal. BC (SUERC-71010; 2763±33 BP) and 1010–840 cal. BC (SUERC-75215; 27736±30 BP). A fragment of burnt bone from cremation pit 583 produced the latest radiocarbon date from the site, 910–810 cal. BC (SUERC-76286; 2716±24 BP).

Settlement evidence
Settlement-related features were encountered across the entire site and in total, 498 sherds of Late Bronze Age pottery (3291g) were recovered, mostly from pits and postholes. The main focus of activity was in the south-east corner, where a four-post structure (271), eight groups of pits, a well (118) and approximately eight discrete pits and postholes were clustered directly north of a shallow, sinuous channel or stream and to the west of Cemetery 2 (Figs. 6 and 8). Measuring up to 9.2m wide and 0.42m deep, the channel (257) narrowed from west to east until it had almost disappeared in the south-east corner, where it measured 0.32m wide and 0.08m deep. When exactly the channel was an open watercourse is difficult to determine, although the presence of a small sherd (1g) of Middle Bronze Age pottery in its basal fill suggests it had not fully silted up by the Late Bronze Age.

Four-post Structure 271 was square in plan, measuring 3.5m long and wide, with the four postholes measuring between 0.3m and 0.4m wide and between 0.16m and 0.27m deep. The fills yielded a total of 31

Table 2. *A summary of the cremation burials from Cemetery 2.*

Cut	Fill	Depth (m)	MNI	Age	Colour	Weight (g)	Weight (g) >10mm	Weight (g) 5-10mm	Weight (g) 2-4mm
261	262	0.110	1	adult	White-blue grey	124	33	91	-
581	580	0.120	1	adult	White-blue grey	315	49	178	88
583	582	0.008	1	adult	Primarily white	296	63	161	72
585	584	0.110	1	adult	White-blue grey	1267	428	599	240

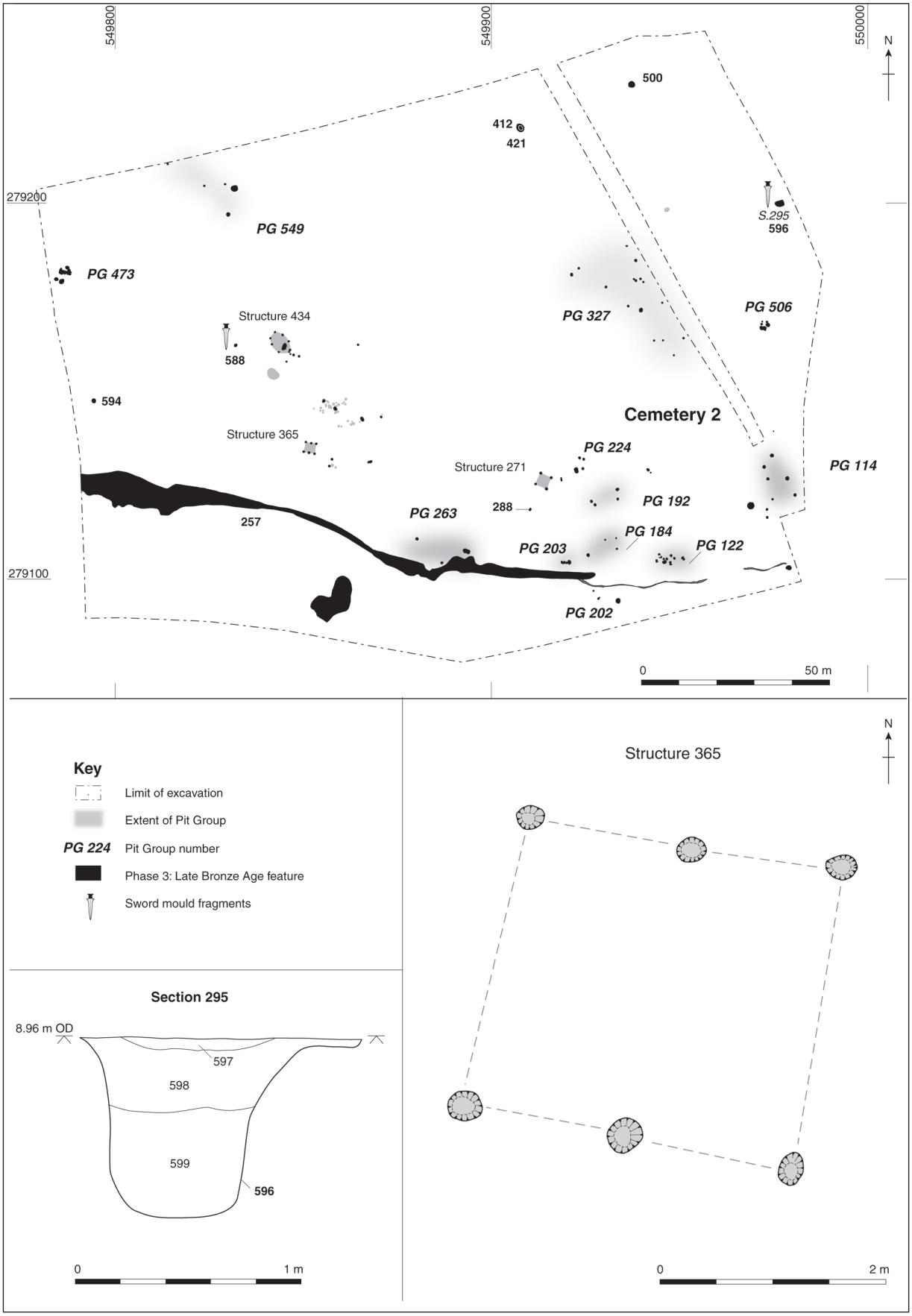

Figure 6. *Late Bronze Age overview.*

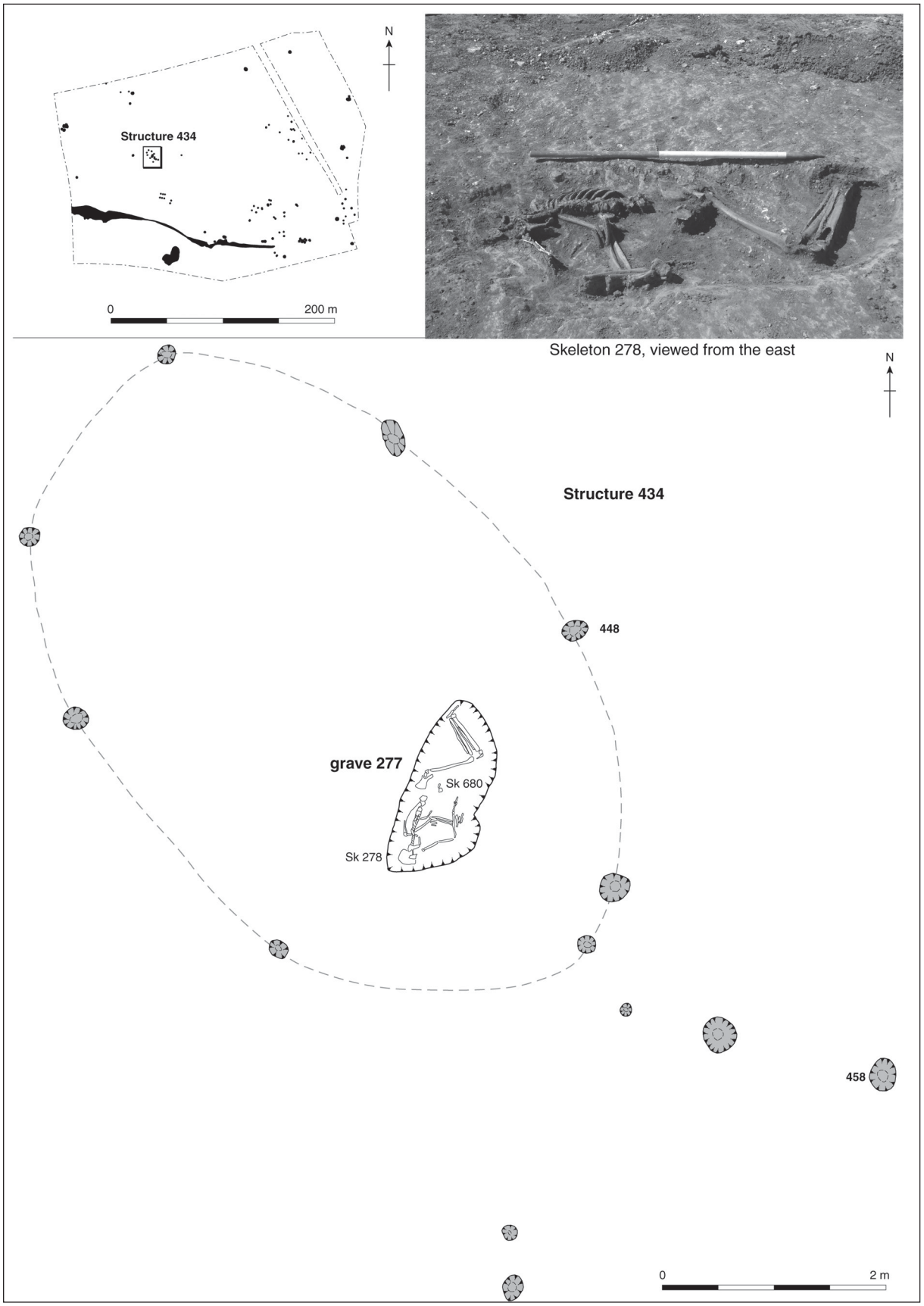

Figure 7. *Late Bronze Age Structure 434 and grave 277.*

sherds (72g) of Late Bronze Age pottery and one piece of fired clay.

The eight pit groups (114, 122, 184, 192, 202, 203, 224, 263) were located alongside four isolated pits. The number of pits per group ranged between three and 14 and dimensions varied between 0.18m and 1.34m wide and between 0.06m and 0.47m deep. Their fills varied, but were generally silty sands and silty clays, with a low organic component. Five of the eight pit groups yielded Late Bronze Age pottery comprising between two and 33 sherds (2g to 115g). Animal bone and worked flint were also present in small quantities, the most notable piece of flint (and the only retouched tool from the site) being an irregular short-end scraper recovered from Pit Group 263, made on a thick secondary flake. Pit Group 202 was the only group of pits south of the channel and although no pottery was recovered, one of the pits did contain a single piece of disarticulated human bone, the shaft of an adult right femur.

Whilst many of the pits did not contain fills and artefacts indicative of occupation waste, the same was not true of well 118 located close to Cemetery 2 and Pit Group 114 (Fig. 8). Measuring 1.8m in diameter and 0.88m deep with vertical sides and a flat base, the small well contained five fills, including deliberate dumps of midden-like material, rich in charcoal and charred grain inclusions. In addition to pottery (17 sherds, 152g; Fig. 10, No. 2) and animal bone (363g), the well also produced two worked bone awls. The larger object of the pair (Fig. 8, SF 101) has been neatly cut from the distal end of a caprine metacarpus. Smoothed on the posterior face, the anterior face tapers evenly to a sharp point, with a small perforation lying just beyond the sliced section of bone. The second awl (Fig. 8, SF 100) was originally from a larger implement, whose pointed terminal fractured away at some point and was then cut down and reshaped to form a small awl.

Elsewhere, a rectangular six-post structure (365) was located to the south of Structure 434 (Fig. 6 inset). Measuring 3.2m long and 3m wide, the postholes ranged between 0.25m and 0.3m wide and between 0.12m and 0.2m deep. Two sherds (6g) of Late Bronze Age pottery were recovered.

Four pit groups (327, 473, 506 and 549) were identified across the north-west and north-east parts of the site. The pit groups comprised between four and 16 pits ranging considerably in size from 0.14m to 1.2m wide and 0.03m to 0.32m deep. Only three of the groups yielded Late Bronze Age pottery with Pit Group 473 containing the largest quantity (18 sherds, 62g), alongside 211g of animal bone.

Amongst a further eight isolated pits and small wells, two were significant for containing fragments of refractory debris (fired clay) related to metalworking. A well (596), located close to the eastern limits of the site, measured 1.6m wide and 1.6m deep with steep sides and a slightly concave base (Fig. 6, section 295). The refractory debris (66 fragments, 471g), most of which appeared to represent sword mould fragments from the casting of a Late Bronze Age Ewart Park type sword, derived from all three fills of the pit. Spread through the secondary and tertiary fills were 98 sherds (557g) of Late Bronze Age pottery (Fig. 10, No. 4), with animal bone recovered from all three fills (237g). A fragment of unidentified charcoal from fill 597 returned a radiocarbon date of 1120–920 cal. BC (SUERC-76652; 2857±30). A sub-circular pit (588) was located directly west of the mortuary structure (434) in the western half of the site. The shallow pit (0.2m deep) contained one sherd (3g) of Late Bronze Age pottery, 14g of animal bone and a further 68g of refractory debris, comprising sword mould fragments.

Animal bone relating to the Late Bronze Age settlement made up the majority of the site faunal assemblage with 178 fragments of countable bone (77.05% of the total assemblage). Cattle is by far the most prevalent species observed in this phase, making up 70% of the identifiable species, followed by sheep/goat (14%). Equid and pig remains were rare and only one specimen of a dog, a cranium, survived. Ageing of species demonstrated that cattle were aged under 18 months and also 24 to 50 months, signifying that they were reared on site and used for meat. Preserved plant remains were rare within Late Bronze Age pits and are mostly charred cereal grains occurring in small numbers (less than 5 grains per flot). Samples taken from postholes relating to possible structures did not contain preserved plant remains.

Early Iron Age

In the south-east corner of the site (Fig. 8) were a small number of features dated as Early Iron Age, comprising a four-post structure (104) and one pit group (170). These features are closely comparable to those dated to the Late Bronze Age but they all contained diagnostic Early Iron Age pottery (totalling 92 sherds, 258g).

Fired Clay Refractory Debris

Simon Timberlake

A large assemblage of refractory debris was recovered from two Late Bronze Age features on site, well 596 and pit 588 (Fig. 6). The assemblage comprised a total of 553.4g (89 pieces) of bronze-casting clay mould fragment of which at least 514.2g (83 pieces) are fragments of one or more sword blade moulds. Ceramic thin section analysis was conducted as was geochemical analysis of internal and external surfaces for five mould fragments.

Sword mould

The probability of more than one sword casting is quite high, and a number of obviously re-fitting pieces of these sword blade mould(s) were noted, but in most cases these were partial and uncertain. A crude approximation reached from the partly re-fitting mould pieces is that the sword cast measured between 500–700mm in length with a blade which

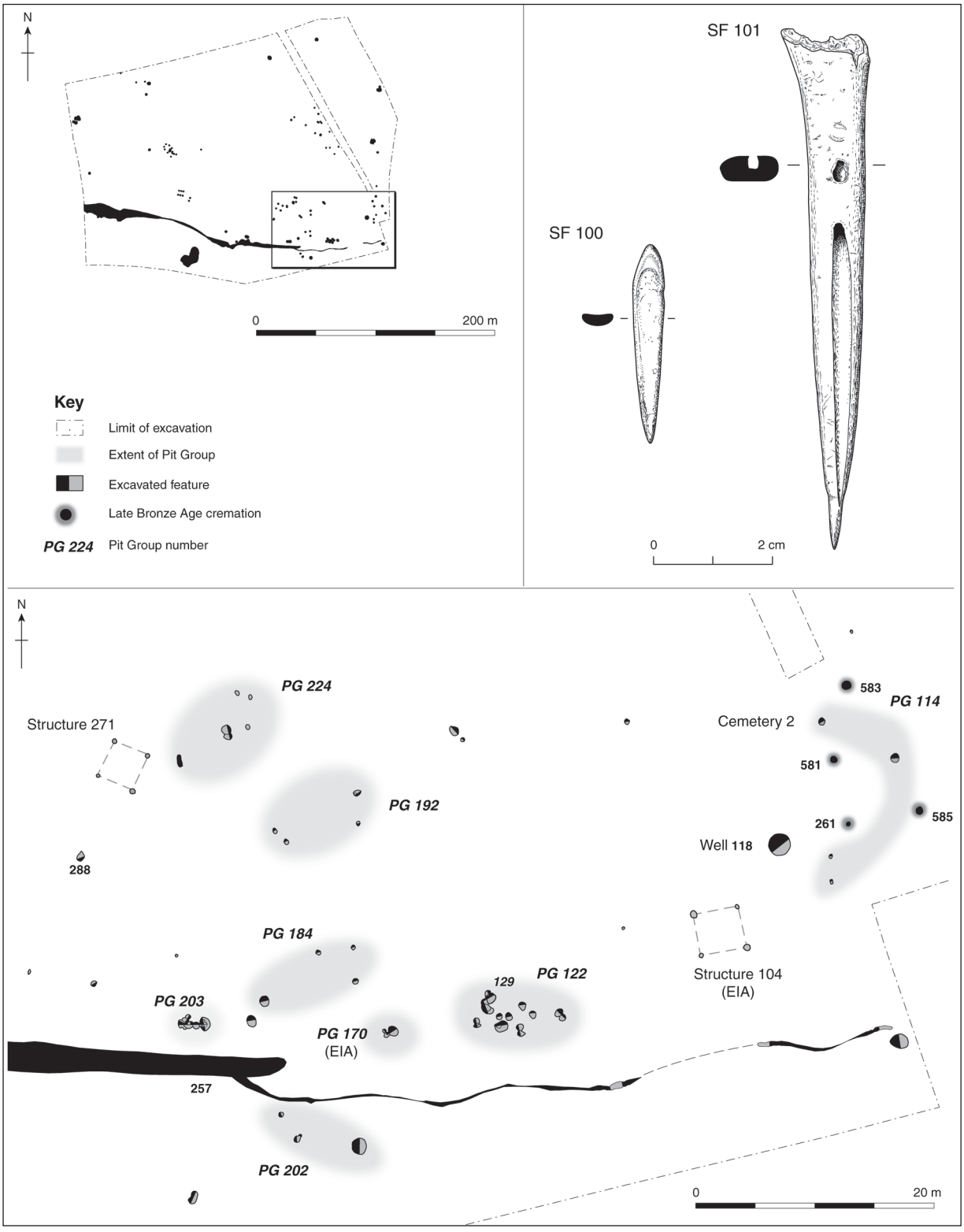

Figure 8. *Cemetery 2 (Late Bronze Age) and settlement features (Late Bronze Age – Early Iron Age) in the south-east corner of site, with illustrations of two bone objects from well 118.*

is marginally curved, and between 30–40mm wide and 3–5mm thick, the blade either side of the midrib being flat to very gently convex in profile. Most revealing are the few poorly preserved pieces of the blade top moulding (Fig. 9, No. 1) with its angular change of *c.* 120°, occasionally with the remains of the lowest rivet hole or the flanged edges of the conjoined diamond-shaped hilt piece with rivet hole moulding protuberances preserved. This sword type dates to the Late Bronze Age, and probably within the Ewart Park phase (900–600 BC). No fragments have been identified from the upper hilt section(s), therefore the length of the handle and style of the pommel base can only be guessed at. Nevertheless, an upper hilt width of between *c.* 50–60mm was calculated on the basis of several fragments.

The primary clay mould fabric, a fine sandy-silty clay with occasional to moderate inclusions of grit (<1mm) and crushed burnt flint (1–4mm), was remarkably consistent across the assemblage, suggesting that a standard type of material was being used and a similar process repeated. The internal metal casting surfaces of these pieces are almost always smoother, more indurated, and variably reduced in colour (light grey-brown to dark grey). There appears to be some evidence of the 'burning history' of the mould in terms of: (a) its initial firing, (b) the chilling and impregnation effect of the hot metal upon its internal surfaces, and (c) a subsequent burning of the fragmented mould linked to its having been broken open and the pieces re-entering the fire or metalworking hearth.

Interestingly, a number of larger pieces of the sword mould are surrounded by a secondary layer of clay to help withstand the temperature and pressure of the poured metal (Fig. 9, No. 2). In effect this is a moulded bandage applied as a seal and as a support to bind the two halves of the sword mould, consisting of a porous and originally organic-rich clay fabric which is quite distinct in composition from the primary mould.

A single non-diagnostic piece of sword mould underwent destructive petrographic analysis for the determination of inclusion source and fabric modification. It was not possible to determine local sedimentary sources for the clay, though the presence of angular to rounded quartz sand grains and relatively immature silt, alongside added flint, suggests sources for the clay/silt within river channels cutting what are probably sand and gravel valley terraces. The similarity of this clay fabric to that of later prehistoric pottery suggests that it has been quite carefully made and deliberately tempered with quartz and flint grit. It is in fact a good quality refractory.

The internal and external surfaces of five fragments of sword mould were examined for traces of metals using semi-quantitative XRF analysis, which produced some interesting results with the log values for copper varying little between the internal and external surfaces of the mould pieces. This should not be interpreted as meaning that copper is present in only small amounts, rather that this element is not obviously elevated on what has been interpreted as being the contact surface of mould and metal.

More interesting was the elevation seen in the values for lead, particularly the dramatic difference between values for the internal mould surface and its exterior. In all five cases, lead present upon the internal mould surface(s) is clearly elevated compared to lead present on the exterior. It is not clear what mechanism, relating to use of a low leaded bronze, might be in operation during the casting process to enhance the contamination of the mould with lead, over and above the main constituents of copper and tin. Therefore the possibility should be considered (however unlikely it may seem) that the mould was also used for casting lead. Colquhan & Burgess (1988, 138) comment on the fact that many early Ewart Park swords retained high-lead compositions, at similar levels to those recorded in earlier Wilburton swords. This was noted with the Cambridgeshire Wicken Fen and Isleham hoard swords for instance, the suggested explanation being that the high lead came from the re-melting of Wilburton scrap. However, it is difficult to account for the much higher values of lead in the Witchford mould. If not a poorly understood casting effect, could the Witchford mould be exhibiting signs of post-metalworking changes – perhaps the leaching away under low pH ground conditions of much of the surface copper, leaving the relatively insoluble lead intact?

Different levels of sulphur, iron and silver were also noted between the internal and external surfaces, with higher levels recorded on the inside of the moulds. The values for sulphur show similar levels of difference to lead for the two sides of the mould, while iron appears to show only a slight enhancement upon the internal surfaces.

The attempted reconstruction of these mould fragments (of which over a quarter may be re-fitting) suggests that the closest match can be found in the more rounded upper blade section and diamond-shape profile of the lower hilt (with its prominent edge flanges, three rivet hole arrangement and interior lozenge-shaped raised metal rib) of a classic Ewart Park sword.

Possible sword chape mould

Fragments of what appears to have been part of a bronze sword chape (scabbard fitting) mould were also identified, consisting of five crescentic-cylindrical shaped and internally rounded re-fitting mould pieces (32.2g). Made of a similar primary sandy clay fabric (though more reducingly fired) to the sword moulds, together the fragments suggest the manufacture of a rounded bronze casting for the chape of at least 120mm long and possibly 20–25mm in diameter (Fig. 9, No. 3). Other interpretations for these mould fragments are possible, although a chape seems by far the most likely given the 'workshop' evidence for sword-making.

Fragment of tool (possibly chisel) mould

A single un-weathered, fairly pristine broken mould piece and some small fragments (total weight 7g), are

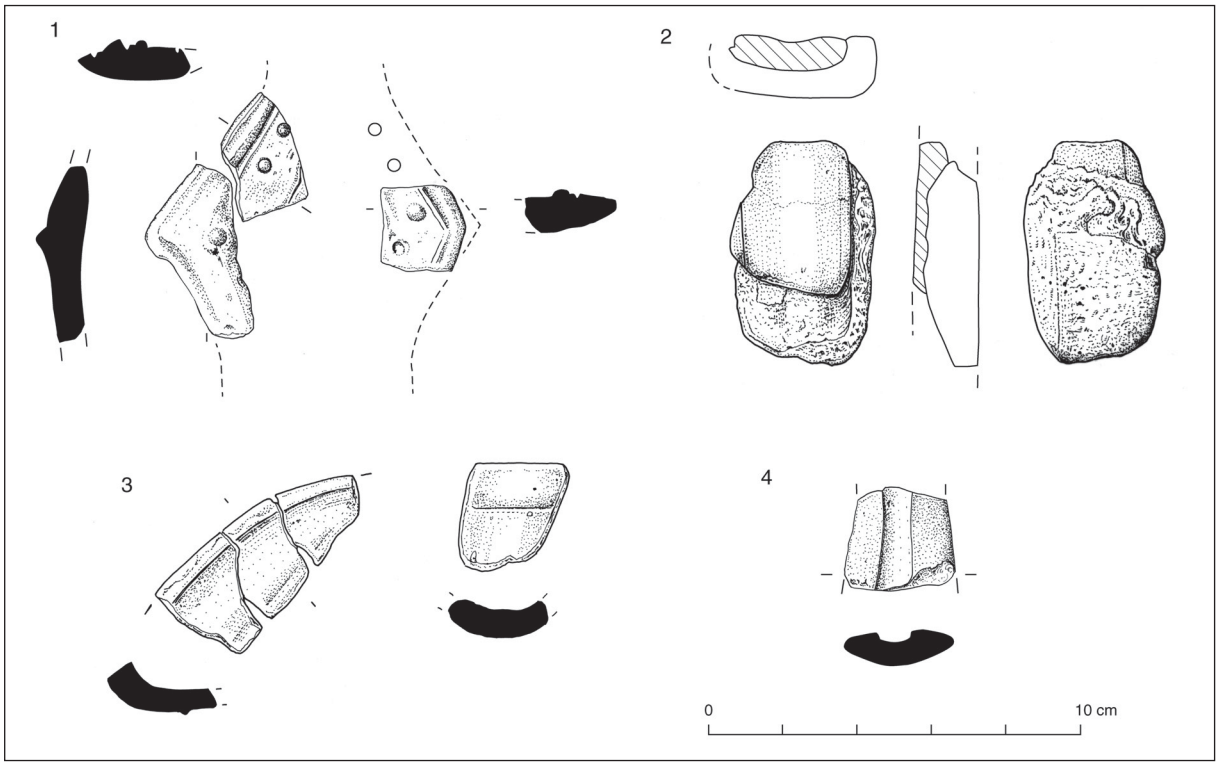

Figure 9. *Bronze-casting mould fragments.*

1. Sword hilt mould fragments, sandy silty-clay fabric, with corner blade rivet hole, prominent flange edge and pimples for two hilt rivet holes. Late Bronze Age well 596, fill 597.
2. Sword mould fragment in a sandy-silty clay fabric with a secondary layer of clay repair in an organic-rich clay fabric. Late Bronze Age well 596, fill 598.
3. Possible sword chape fragments, sandy silty-clay fabric. Late Bronze Age well 596, fill 599.
4. Possible chisel/tool mould, fine-grained and sandy clay fabric. Late Bronze Age well 596, fill 597.

perhaps for the concave-sided narrow rectangular metal tip of a possible chisel. The mould was made from a slightly different fired clay fabric; dark, fine-grained and sandy containing occasional small mica flecks. The tool tip would have had a squarish cross section of 10–6mm width and about 5mm+ depth (Fig. 9, No. 4).

Prehistoric Pottery
Matthew Brudenell

A total of 952 sherds (4408g) of prehistoric pottery, dating from the Early Bronze Age to the Early Iron Age, were recovered from the combined evaluation and excavation, displaying a low mean sherd weight (MSW) of 4.6g. The Early Bronze Age material (45 sherds, 208g) includes fragments of Beaker (24 sherds, 93g) and plain sherds that are possibly Collared Urn related. Most of the Beaker is decorated (20 sherds, 78g) with a range of decorative techniques and motifs typical of 'domestic' Beaker assemblages.

The bulk of the pottery is of Late Bronze Age origin (Table 3), and is described in more detail on merit of its size and relative significance. The material is in a stable condition, but many of the sherds are friable and highly fragmented. This report provides a summary of the pottery by period, and a discussion of its date and affinity.

Middle and Middle–Late Bronze Age pottery

Pottery assigned to the Middle and Middle–Late Bronze Age (317 sherds, 651g) has a low MSW of 2.1g, most of the assemblage being recovered from 12 cremations and three pits. Diagnostic sherds are rare in the assemblage, and with the exception of the pottery from the pits, the material is highly fragmented with many sherds being crumb-like in size, particularly those from the cremations. The assemblage is dominated by sherds in shell tempered fabrics, which account for 98% of the pottery by weight. This is typical of Middle Bronze Age assemblage from large parts of Cambridgeshire, particularly the fenland region.

A total of 143 sherds (92g) were recovered from cremations, mostly from samples. Some have clearly been burnt, which may indicate that vessels were being placed on the pyre during the cremation process, with fragments being incidentally caught in the gathering up of bone material for deposition. In other

Table 3. *Quantified prehistoric pottery by period.*

Period	Ceramic Tradition	Date	No./Wt. (g) sherds	% of assemblage (by wt.)
Early Bronze Age	Beaker	*c.* 2200-1900 BC	24/93	2.1
	Generic Early Bronze Age fabrics	*c.* 2200-1600 BC	21/115	2.6
Middle Bronze Age	Deverel-Rimbury	*c.* 1600-1150 BC	292/640	14.5
Middle-Late Bronze Age	Generic Middle-Late Bronze Age fabrics	*c.* 1600-800 BC	25/11	0.2
Late Bronze Age	Post Deverel-Rimbury Plainware	*c.* 1150-800 BC	498/3291	74.7
Early Iron Age	Post Deverel-Rimbury Decorated ware	*c.* 800-350 BC	92/258	5.9
Total			**952/4408**	**99.8**

instances though, sherd material unconnected with the cremation process may have been incorporated into cremation pit fills. Beyond the cremations, the only notable assemblage is that from pit 614 which yielded 155 sherds (460g), and contained a decorated rim of an urn and a decorated cordon from a second vessel.

Late Bronze Age pottery

The Late Bronze Age assemblage comprises 498 sherds (3291g) with a low MSW of 6.6g, recovered mostly from pits, postholes and wells. The assemblage only contains a small number of partial vessel profiles and diagnostic sherds, but clearly belongs to the Plainware phase of the Post-Deverel Rimbury (PDR) ceramic tradition (Barrett 1980).

A fairly diverse range of fabrics is present in the Late Bronze Age assemblages, with inclusions of flint, shell, grog and sand recorded in varying combinations. As is common with Plainware PDR ceramics from the eastern region (Brudenell 2012), however, calcined flint was the preferred additive (67% of the assemblage); crushed to varying grades and mixed in different quantities depending largely upon vessel size and quality of ware. Shelly wares constitute 19% of the assemblage, and are likely to derive from local Ampthill or Kimmeridge Clay sources.

Based on the total number of different rims and bases recorded, the assemblage is estimated to contain fragments of a minimum of 28 different vessels. Out of 21 different rims, all apart from one vessel belong to coarseware pots, the majority of which have simple flat-topped, rounded, or slightly pinched rims. However, diagnostic rim forms of the period are present and include internally-bevelled varieties, hooked rims and everted rounded rims. A total of seven bases have flat or pinched-out feet, with one having heavy flint gritting on the underside.

Seven vessels are sufficiently intact to assign to form, all Class I coarseware jars characteristic of Late Bronze Age ceramics of the PDR tradition. Five of the jar rims are measurable with rim diameters ranging from 15–24cm. These constitute small to medium-sized jars which typically dominate later prehistoric pottery assemblages, and were probably used as cooking pots on a day-to-day basis (one vessel having carbonised residue on the interior; one sherd, 45g).

The absence of form-assigned finewares reflects the scarcity of burnished finewares generally in the assemblage. In total there are just four burnished sherds (10g), representing 0.8% of the assemblage by sherd count or 0.3% by weight. These frequencies are extremely low, since figures around the 5% mark are the norm for Late Bronze Age groups in Cambridgeshire (see Brudenell 2016, 167 for discussion). Decoration is also scarce with six sherds (161g) ornamented from a maximum of just two vessels. With the exception of one sherd, all belong to a coarseware jar, which has a cabled rim-top (five decorated sherds, 146g). The remaining sherd (15g) is a neck fragment with a row of impressed dots, which seems to mimic perforations sometimes found below the rim of Plainware PDR coarseware pots (e.g. Brudenell 2011, 21).

Evidence for vessel use was identified in the form of carbonised residues adhering to sherd surfaces. Five sherds (112g) displayed these internal residues, likely to be burnt food crusts.

Key pottery groups and deposition

Although non-residual Late Bronze Age pottery was recovered from 44 different features – primarily pits and postholes – the vast majority (74%) yielded less than 100g of ceramic material, mostly small fragmented sherds. These probably derived from a 'background' scatter of ceramic debris lying across the site, which was unintentionally caught in dumps of soils during backfilling, or had naturally eroded into open features. Medium-sized ceramic deposits weighing between 101–500g were recovered from 9% of features yielding Late Bronze Age pottery, specifically three pits (288, 500, 594; Fig. 6) and a well (118; Fig. 8). Most sherds are relatively small, though mixed amongst these assemblages are larger fragments, including partial vessel profiles from two jars in well 118 (Fig. 10, No. 2) and pit 500 (Fig. 10, No. 3).

The various practices responsible for these and other larger pottery deposits are difficult to untangle. At one end of the spectrum, some of the smaller groups of pottery probably entered features incidentally, via the kinds of processes discussed above. The large groups, by contrast, may have derived from pre-depositional contexts such as surface rubbish heaps/middens – contexts where repeated episodes of discard from a range of refuse-management practices might have generated mixed compositions of pottery.

Only *c.* 7% of features with non-residual Late

Bronze Age pottery yielded large sized ceramic deposits weighing over 500g. These belong to just three features (Fig. 6): well 412, well 596 (Fig. 10, No. 4) and pit 421 (Fig. 10, Nos. 5–7), which between them yielded 268 sherds (2241g), representing 55% of the assemblage by sherd count or 68% by weight. Once again, they are characterised by a generalised mix of ceramic refuse with varying proportions of different vessels in different fabrics. There is no indication that any of the sherds/vessels were formally deposited or singled out for special treatment in deposition.

Early Iron Age pottery

Pottery assigned to the Early Iron Age comprises 92 sherds (258g) with a very low MSW of 2.8g. The pottery was recovered from Pit Groups 122 and 170, and Four-post Structure 104 (23 sherds, 34g) (Fig. 8). The pottery is highly fragmented, as reflected by the MSW, and by the fact that 95% of sherds measure less than 4cm in size. Shell replaced burnt flint as the dominant inclusion in the Early Iron Age, with shell and sand fabrics accounting for 72% of the pottery by weight. Flint is still fairly common, accounting for 24% of pottery with the remaining 4% shared between 'minor' fabrics.

No partial or complete vessel profiles could be reconstructed from the Early Iron Age pottery, and the assemblage contains just four different vessel rims and two different bases. Key to the dating of the pottery are the number and range of decorated sherds, with a total of 19 ornamented (77g) from a minimum of eight vessels. On un-burnished coarsewares decoration includes tool impressions to the rim-exterior of two vessel rims, tool impressions on one shoulder sherd (Fig. 10, No. 8) and fingernail impressions on one shoulder sherd. The other decorated sherds belong to burnished finewares and include grooved or incised horizontal lines on the shoulder, geometric patterns comprising diagonal lines or a combination of chevrons and horizontal lines between the shoulder and rim.

With the exception of an assemblage from pit 129 in Pit Group 122 (46 sherds, 158g), all the feature assemblages are small and contain less than 100g of pottery. As with the small Late Bronze Age pottery groups, sherds in these contexts may have been incidentally caught in dumps of soil during the infilling of pits, or may have been used to pack posts in the case of the pottery from Structure 104.

Prehistoric pottery discussion

The prehistoric pottery assemblage from Witchford is small by contemporary standards.

The Middle Bronze Age assemblage is highly fragmented, which limits the inferences which can be drawn from it. Diagnostic sherds are rare, and with the exception of the pottery from the pits, sherds are mostly crumb-like in size, particularly those from the cremations. More generally, the assemblage is dominated by shell tempered wares typical of most Deverel-Rimbury assemblages from the fenland and parts of southern Cambridgeshire. Until recently, material of this date was scarce from the Ely area, but excavations have now started to yield more significant assemblages, including those from North-West Ely (Percival 2015).

The same is also true of Post Deverel-Rimbury ceramics dating to the Late Bronze Age and Early Iron Age, which were largely absent from the area two decades ago (see Evans 2002 for discussion). Today the Late Bronze Age assemblage looks small when compared to groups recently published from Striplands Farm (Brudenell 2011) and Over (Brudenell 2016), Cambridgeshire, but includes a selection of typical Plainware jar forms (Brudenell 2012) paralleled locally at North-West Ely (Percival 2018). Significantly, the second largest feature assemblage by weight from Witchford – deriving from well 596 – is associated with a radiocarbon date of 1120–920 cal. BC (SUERC-26652; 2857±30 BP), and was found alongside a group of Ewart Park phase sword moulds. This is one of only a small number of pottery and metalwork mould associations recorded from settlement sites in this period in Eastern England (see Needham and Bridgford 2013 for discussion), and is important for aligning Bronze Age artefact chronologies.

The recovery of a small group of Early Iron Age sherds from Witchford adds to a growing number of similar assemblages from the fenland interior, with published groups from Prickwillow Road, Ely (Jackson 2003) and Cromwell Community College, Chatteris (Atkins and Percival 2014). In this instance, the small size of the assemblage precludes close dating, though it is dominated by shell tempered wares, as at the above mentioned sites, and those from the fen-edge at The Holme, Earith (Brudenell 2013) and Lingwood, Cottenham (Hill 1999).

Discussion

With Lawrence Billington, Simon Timberlake and Zoë Uí Choileáin

Middle–Late Bronze Age funerary activity

Middle Bronze Age activity was represented almost entirely by features belonging to Cemetery 1. The overall number of cremation burials, 35, is relatively large in terms of country-wide figures for the Middle Bronze Age. A recent study of 363 Middle Bronze Age cremation burial sites across Britain, totalling 3013 cremations, has revealed a mean number of 12 individual burials per cemetery (Caswell and Roberts 2018). Of these, 205 sites (56%) contain fewer than five individual burials (*ibid*.). Regionally however, and certainly within Cambridgeshire, there are cremation cemeteries of a similar size. A cemetery of 41 cremation burials, adjacent to a stream and in a sheltered location surrounded by hills, was excavated at Papworth Everard (Gilmour *et al*. 2010). Flanking the ancient course of the River Great Ouse at Colne Fen,

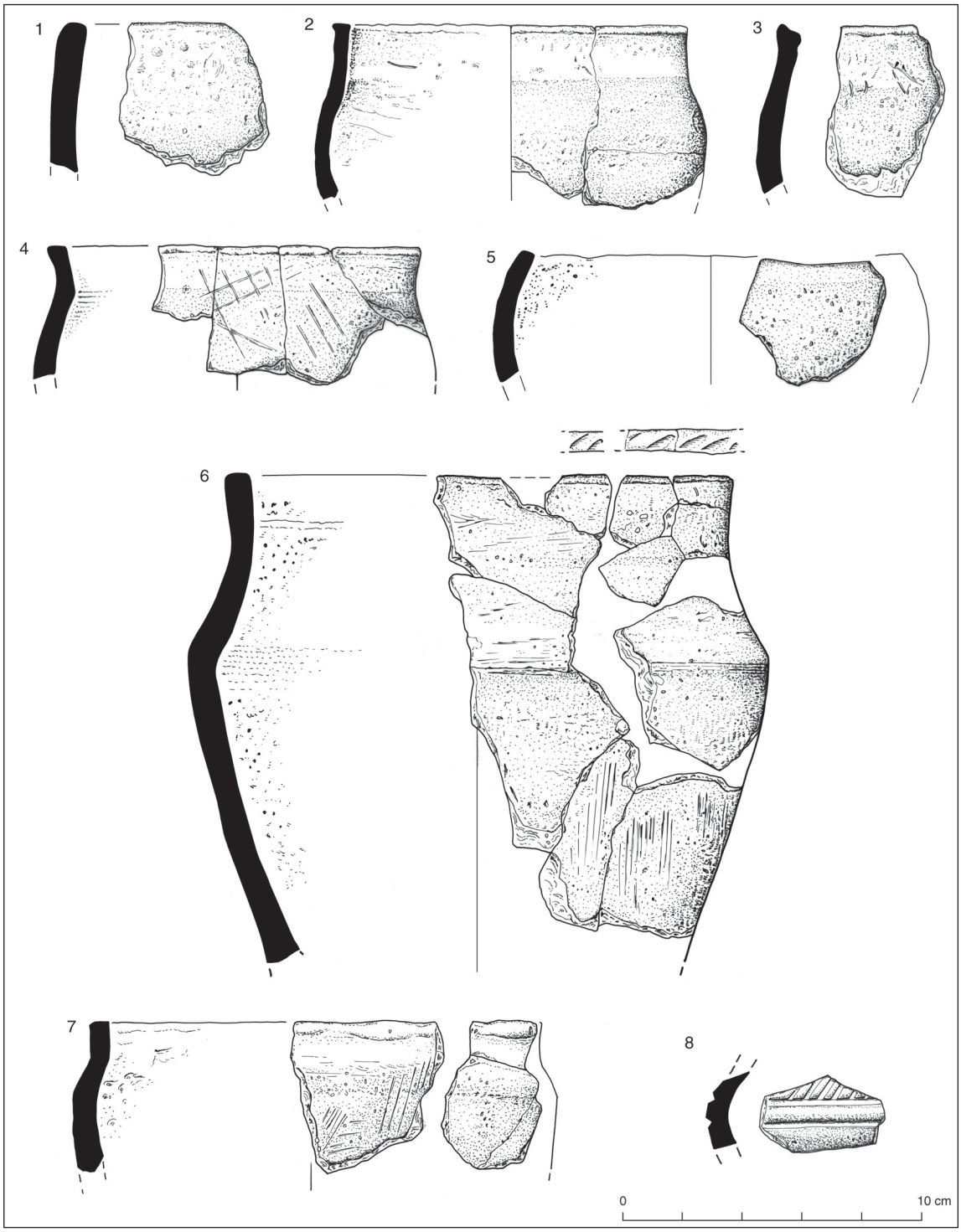

Figure 10. *Prehistoric pottery.*

Middle Bronze Age

1. Shell fabric, rim of small urn. Pit 503, fill 505.

Late Bronze Age

2. Flint fabric, weakly shouldered coarseware jar. Well 118, fill 121.
3. Flint fabric, weakly shouldered coarseware jar. Pit 500, fill 502.
4. Flint fabric, round shouldered coarseware jar. Well 596, fill 597.
5. Flint fabric, hooked-rim coarseware jar. Pit 421, fill 425.
6. Flint fabric, coarseware jar with marked shoulder and hollowed neck with cable decorated rim-top. Pit 421, fill 425.
7. Flint fabric, weakly shouldered coarseware jar. Pit 421, fill 425.

Early Iron Age

8. Shell and sand fabric, shoudler of a fineware bowl decoarted with grooved horizontal and geometric lines. Pit Group 122, pit 129, fill 131.

Earith, 35 cremations surrounded the entrance of a penannular ring-ditch, 13 of which contained urns or fragments of urns (Evans *et al*. 2013). Upstream of Colne Fen, at Butcher's Rise, Barleycroft Farm, 32 cremations were encountered during excavation of a double ring-ditch, 12 of which were urned (Evans and Knight 1997). At the Fawcett School in Cambridge a cemetery of 37 unurned cremations and one inhumation was found within a ring-ditch (Phillips 2015). To this group, a cemetery found recently during the A14 upgrade excavations can be added. Placed on higher ground overlooking a palaeochannel to the north of Hilton was a cemetery of three inhumations and 55 cremation burials, all believed to be Middle Bronze Age on the basis of initial radiocarbon dating (Richard Mortimer pers. comm.).

While the total number of burials in Cemetery 1 is comparable to these examples, the clustering of the three separate burial groups is noticeably different. However, apart from the spatial separation, it was not possible to identify any factors which might explain the clustering. Nearly all the cremations where age could be estimated were adults (28 in total), apart from a cremation pit in Burial Group 274 (331) which contained two individuals roughly aged 3 and 15 years old and a pit in Burial Group 300 (334), which contained an adult and a 5 year old. The inhumations included a range of ages across the three groups and only two could be sexed, a young adult male in Burial Group 256 and a young adult female in Burial Group 300. Therefore, distinguishing any pattern in terms of sex was not possible. Across the three burial groups all the cremation burials were unurned with the possible exception of cremations 267 and 312 in Burial Group 256, although the evidence was not conclusive. Many Middle Bronze Age cremation cemeteries in East Anglia contain at least one urned burial and overall around one quarter of known cremations were deposited in urns (Robinson 2007, 23).

The three separate burial groups may represent different family burial plots, or alternatively, the burials may have been separated by natural or man-made features that have left no visible trace. For example, Burial Group 256 had a noticeably linear arrangement, perhaps running alongside a marker such as a fence-line or hedge, which has left no sub-surface remains. Some cremation cemeteries appear to adhere to a linear alignment that respects earlier field systems, evident at Papworth Everard (Gilmour *et al*. 2010, 21) and Kings Hill, Broom (Cooper & Edmonds 2007, 95). Middle Bronze Age cremation cemeteries were frequently associated with pre-existing monuments, especially barrows (e.g. Robinson 2007, 35). There was no evidence that Cemetery 1 was associated with a barrow although the possibility that one has been ploughed out cannot be discounted; a small circular burial mound (possibly a turf mound) of *c*. 10m diameter could have occupied the space between Burial Groups 256 and 300; such a feature could have been the focus of the cemetery. Barrows have been identified within this part of Cambridgeshire; Hall's extensive fieldwalking survey of the Isle of Ely identified barrows 3km to the south at Wilburton (CHER 05827) and 5km to the east in Ely (CHER 06136 and 07245).

Regardless of the reasons for the spatial arrangement of the burial groups, an interesting aspect is the combination of both cremation and broadly contemporary inhumation burials in the same cemetery. While cremation was the most common form of burial practice in the Middle Bronze Age, inhumation burial within graves is still documented. However, it is unusual to find inhumation burials within what is predominantly a cremation cemetery. Of those Middle Bronze Age cremation cemeteries already mentioned, the Fawcett School in Cambridge (Phillips 2015) contained what is believed to be a contemporary inhumation, although attempts to radiocarbon date the skeleton were unsuccessful. The cemetery found north of Hilton during the A14 excavations was mixed; while the inhumations were thought to pre-date the cremations, radiocarbon dating of one inhumation has returned a Middle Bronze Age date (Richard Mortimer pers. comm.).

Within the nationwide study of cremation burial sites, cremated and unburnt human bone were found together at only 40 sites (Caswell and Roberts 2018, 340). A good parallel for the mixed funerary rites in Cemetery 1 is provided by a Middle Bronze Age cemetery from Biddenham, Bedfordshire, which included 19 cremation pits and three inhumation burials clustered around an earlier (Early Bronze Age) ring-ditch (Luke 2016, fig. 4.23, 175–9). The dominance of cremation burial over inhumation burial takes place in Britain from *c*. 2000 BC, during the Early Bronze Age (Brück 2014, 130). The scope of this article does not allow for an in-depth study of why one form of burial became prevalent over another, except to say that while the widespread use of cremation burial was probably driven by cultural changes at a society level, choices at a local or community level were probably driven by the preferences of families or individuals. The presence of both burial forms existing side by side at Field End may be evidence of these local practices, even though the general trend within Middle Bronze Age cemeteries was towards cremation burial alone. Beyond this observation there was no evidence from Field End to suggest any social distinction between those individuals who were placed within a grave rather than cremated on a pyre.

The weight of cremated bone recovered from Middle Bronze Age cremations in East Anglia is variable, although around 40% contain 100g or less of cremated bone (Robinson 2007, 21). Compared to Cemetery 1 at Field End, considerably less bone seems to have been recovered at other sites of the same date. For example, at the Fawcett School in Cambridge, 29 out of a total of 37 cremations contained less than 199g of burnt bone (Webb 2015). These figures are typical and suggest that only a certain percentage of the bone from a cremation pyre was being selected for interment; studies suggest that in general the entire cremated remains were rarely collected (McKinley 1997, 130). One theory suggests that only part of the

remains were required for burial, with the rest being curated, possibly to be used in other rituals such as the occasional depositing of cremated human bone in settlement contexts (Brück 1995, 257–259).

An association between Cemetery 1 and a nearby area of settlement is assumed, although only three pits could confidently be dated as Middle Bronze Age. It is possible that a number of the undated pits were also Middle Bronze Age, or that an area of settlement lies beyond the limits of the excavation. Alternatively, related settlement may have been further away and instead the cemetery was positioned because of topographical or natural features. Prominent natural features such as rivers, channels and locally the fen edge, are major factors in the siting of prehistoric monuments and burials, evidenced at Papworth Everard (Gilmour *et al*. 2010) and the recent example from the A14 excavations. Cemetery 1 at Field End was positioned to the north of a shallow channel and this may have been an important factor in choosing this site as a place to bury the dead.

Significantly at Field End there was evidence for funerary activity continuing into the Late Bronze Age. Two cremations within Cemetery 1 (341 and 482) returned radiocarbon dates which straddled the Middle–Late Bronze Age transition (Fig. 3), raising the possibility that further burials in the cemetery were of a similar date. Two out of the four cremation burials in Cemetery 2 were radiocarbon dated to the Late Bronze Age, making it probable that the other two are contemporary.

Burial practices within the Late Bronze Age are harder to define. Until recently there was still a perceived lack of Late Bronze Age burials of any type within the archaeological record in Britain (Brück 1995, Harding 2000, 75). With an increase in the number and size of excavations, as well as increased use of radiocarbon dating, this is beginning to change (e.g. Gilmour 2015, see below), although compared to the Middle Bronze Age human remains are clearly under-represented during this period. A number of reasons have been suggested for this, with Brück (1995) suggesting that it is related to other social changes occurring during the Late Bronze Age.

Where Late Bronze Age cremations exist they are commonly found as isolated examples, such as Clay Farm, Trumpington (Phillips and Mortimer 2012), Striplands Farm, Longstanton (Evans and Patten 2011), Puddlebrook Playing Fields, Haverhill (Muldowney 2010) and locally at North-West Ely (Moan and Phillips 2018). Only occasionally do burials appear in greater numbers, such as Eye Kettleby, Leicestershire, where four cremations were found in a small group (Finn 2011, 95). These cremations were associated with both Late Bronze Age settlement activity and Early Bronze Age ring ditches. An example of a larger and nearby cemetery has been found at Turner's Yard, Fordham (Gilmour 2015) where a cemetery of 21 unurned burials or deposits extended from close to a barrow along the line of a slight depression. Radiocarbon dating proved this to be a rare example of a Late Bronze Age cremation cemetery (with dates of 1006–844 cal. BC, 1043–903 cal. BC and 1119–931 cal. BC).

A rare discovery was the possible mortuary structure (434) surrounding grave 277, which contained the remains of a young adult female (Sk 278) and a pre-term infant (Sk 680). Interpretation as a dedicated mortuary structure is due to the obvious association between the grave and the postholes, as well as its proximity to Cemetery 1. However, it is possible that the structure could have been domestic in function originally, or at least, non-funerary. Certainly, its sub-circular form and possible elaborated 'porch' is reminiscent of contemporary domestic architecture. There may even have been a link between the structure and the female (Sk 278) buried within it, although the lack of other comparable domestic structures on the site perhaps makes this less likely. It is notable that, to the authors' knowledge, no other example of a Late Bronze Age inhumation buried within a mortuary structure has been recorded in the East of England.

Late Bronze Age and Early Iron Age settlement and economy

The settlement evidence, comprising an extensive scatter of pits, four and six-post structures, isolated postholes and possible wells is entirely characteristic of Late Bronze Age settlement and can be compared to sites in the county such as Striplands Farm (Evans and Patten 2011), the Hutchison Site (Evans *et al*. 2008), Dimmock's Cote, Wicken (Gilmour 2014), Barleycroft Farm (Evans And Knight 1997) and Rhee Lakeside South (Evans *et al*. 2013). The pottery and general finds assemblage is modest in size at Field End but this should not be seen as a reflection of low settlement intensity. Large artefactual assemblages from Late Bronze Age sites typically rely on the recovery of rich midden-like deposits, often only preserved where they have been deliberately deposited into the tops of earlier monuments, such as at Turner's Yard, Fordham (Gilmour 2015) or Toll House, Broom (Cooper and Edmonds 2007) or in the tops of wells as at Striplands Farm (Evans and Patten 2011). This is well illustrated by evidence from the Godwin Ridge at Over, where a large assemblage (over 6000 sherds) was derived from very partial sampling of midden-like accumulations within preserved buried soils, with very little from any cut features. Had the site been plough truncated (as at the current site) it might have produced 200 sherds or so (see Brudenell 2016).

Although small, the faunal assemblage is interesting in the dominance of cattle, which should be viewed in the wider context of cattle dominated Middle Bronze Age assemblages in the region. This trend may have continued into the Late Bronze Age based on the evidence from Striplands Farm (Rajkovača 2011), Turners Yard, Fordham (Faine 2015) and North-West Ely (Moan and Phillips 2018). Across Southern Britain, the Late Bronze Age witnessed a rise in sheep numbers in proportion to cattle numbers, a rise which appears to take place later in pockets of East Anglia. It is possible that this reflects the higher compatibility of cattle to the fenland landscape. The percentage of

equid remains is low, probably due to the fact that horses were used primarily as mounts during the Bronze Age, as opposed to as a food source. This is similar to sites such as Turners Yard, Fordham (Faine 2015) and Dimmock's Cote, Wicken (Faine 2014).

The Early Iron Age features are interesting in that they seem to represent a direct continuity of activity, with pits and another four-post structure located in the same area as the main concentration of Late Bronze Age settlement.

Metalworking

Most of the identified mould fragments appear to belong to the broken-up remains of one or more sword castings although fragments of a sword chape and a possible chisel tool were also recovered. Analysis of the blade and hilt mould fragments indicate that these swords belong to the classic period of Late Bronze Age manufacture represented by the Ewart Park industry, which Needham dates to 1020–820 BC (Needham *et al*. 1997). The single radiocarbon date from well 596 corresponds favourably with this date range (1120–920 cal. BC). Both Ewart Park and the earlier Wilburton swords have been found on numerous occasions within the Cambridgeshire Fens as metalwork deposits within rivers and pools, and also as hoards intended for use as scrap (Colquhan and Burgess 1988).

However, the Field End mould fragments are a rare example of the primary production of swords and other bronze objects, perhaps from the melting down of bronze scrap, which may or may not have included lead-rich Wilburton metal. The results of a recent national study suggest that evidence for Late Bronze Age metalworking within East Anglia is best represented in Essex in the south and further north in parts of Cambridgeshire (Adams *et al*. 2017), although the number of sites is limited and the type of site varies noticeably between the two areas. In Essex, an association with ringworks is very strong; Needham alludes to the evidence at Springfield Lyons, hinting at elite control or access to bronze working (Needham and Bridgford 2013), while for the Mucking North and South Rings, Evans *et al*. (2016, 211) see metalworking as key to these ringworks, which are viewed as elite residences. The picture from northern East Anglia is, however, arguably somewhat different, mould fragments coming from what look more like regular settlements, including Striplands Farm (Evans and Patten 2011), Eynesbury (Ellis 2004), Stonea Grange (Jackson and Potter 1996) and Maxey Quarry (Meadows 2006). This could indicate that metalworking was occurring more routinely at Late Bronze Age settlements in Cambridgeshire, or alternatively, that recognising high-status sites is difficult in areas where features such as ringworks are not present. It is notable that one nearby site may buck this trend. At Barleycroft Farm, mould fragments (including from a sword and a spear) were recovered from a well. Associated with a Late Bronze Age longhouse and high levels of deer and horse bone, it was argued that the combined evidence indicated a high-status site (Evans and Knight 1997).

One of the more site-specific discoveries is the recognition of the 'clay jacketed' method of bandaging together what were probably two halves of the primary sword mould within a well-knitted and thermodynamically stable organic-rich daub. Only one reference to the discovery of these two-layered sword moulds is noted elsewhere (Colquhan & Burgess 1988, 131), though this method was not described in any detail. This is a significant discovery, which offers an insight into the technology of casting swords in the Late Bronze Age.

An overview of Pre-Iron Age activity on the Isle of Ely

As detailed above, the limited but increasing picture of pre-Iron Age settlement activity on the Isle contrasts with the record of Middle–Late Bronze Age metalwork deposition. The distribution and character of this metalwork has been discussed in detail – not only by Evans (2002), but more recently by Yates and Bradley (2010) and Barrowclough (2013). These discussions make much of the association between metalwork deposition and possible routes or causeways which cross the fens and the river (Fig. 2; Barrowclough 2013, figure 5). Most of these possible routeways are unconfirmed, although in the 1930s Lethbridge observed and excavated part of a timber causeway which seemed to extend from dry land at Barway across the Cam, effectively linking the Isle of Ely to the Soham peninsula – and found a bronze ornament and Bronze Age pottery in association with it (Lethbridge 1935, 161–3).

Writing over 15 years ago, Evans (2002, 49) acknowledged that the apparent dearth of early settlement might partly reflect the limited number of large-scale excavations, but concluded ultimately that Ely's clay uplands may only have seen seasonal exploitation of its resources. Social gatherings and rituals associated with this seasonal usage may have been the context for much of the metalwork deposition.

While the idea of gatherings is entirely valid, especially considering how communities must have been displaced when fen-edge pastures were flooded during certain times of the year (*ibid*, 48), more recent excavations challenge this interpretation. Sites including Field End and the Middle–Late Bronze Age findings at North-West Ely (Phillips and Morgan 2015; Moan and Phillips 2018) and Ely Leisure Centre (Robinson Zeki 2018) are characterised by evidence entirely consistent with settlement and fixed agriculture of the kind known from elsewhere in the region. Crucially, the site at Field End also provides a very tangible link between the well-known metalwork record and this new evidence of settlement in the form of the sword moulds.

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