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THE NEOLITHIC TO POST-MEDIEVAL ARCHAEOLOGY OF KINGSBOROUGH, EASTCHURCH, ISLE OF SHEPPEY: FROM MONUMENTS TO FIELDS

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During the past decade our knowledge of the archaeology of the Isle of Sheppey has been significantly expanded through an extensive, multi-stage programme of archaeological investigations at the Kingsborough Manor housing development, commissioned and funded by Jones Homes (Southern). Most aspects of this programme have already been published, most notably the important discoveries of two Neolithic causewayed enclosures as well as Middle Bronze Age cremation cemeteries, later Bronze Age enclosures and Middle Iron Age enclosures with four-post structures (Allen *et al*. 2008). Another article, published in *Archaeologia Cantiana*, CXXIX, focussed on the Late Iron Age/Romano-British, Anglo-Saxon, medieval and younger features discovered up to 2006 (S. Stevens 2009). This contribution aims to present an up-to-date overview of the development of the landscape of Kingsborough from the Neolithic to the post-medieval period, incorporating the results of the investigations carried out in 2007-8. For further detail on the site chronology, the radiocarbon modelling and the finds and environmental assemblages, the reader is referred to the earlier publications. It will suffice here to mention the relevant results; since 2006 the finds and environmental assemblages have been augmented only slightly in number and insignificantly in range, not enough to warrant renewed in-depth discussion.

Site Location and Topography

The site extends over an area of *c*.16ha on and around the second highest hill (72m AOD) on the east-west ridge of higher land on the Isle of Sheppey. It lies approximately 2km north-west of Eastchurch (**Fig. 1**; NGR 597600 172250) and commands wide views to the south across the Swale, the low lying land beside the Swale to the Kent 'mainland' and northwards across

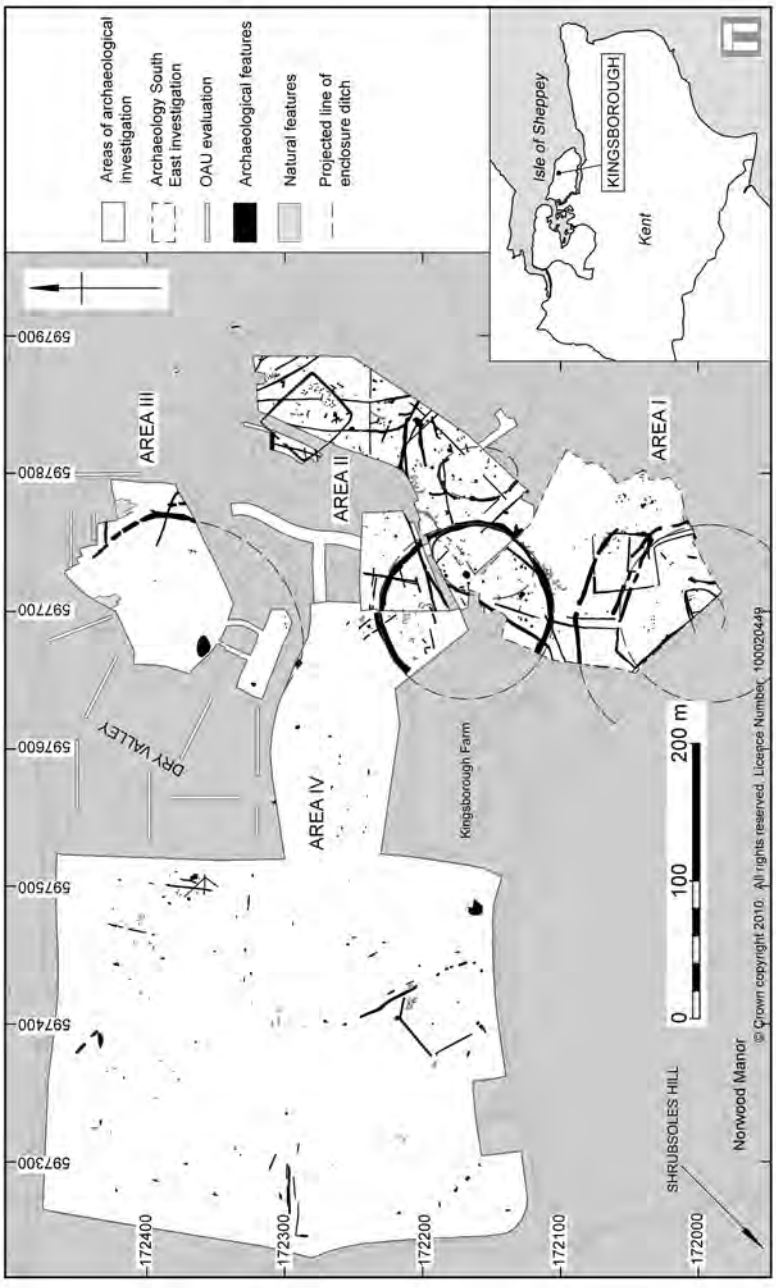

Fig. 1 Kingsborough, Isle of Sheppey. Site location showing all archaeological features and site subdivisions.

the Thames estuary. The different views afforded by this topography were clearly of significance in the location of the two Neolithic causewayed enclosures.

The geology of the Isle of Sheppey is characterised by extensive Tertiary London Clay outcrops, covered by recent (Holocene age) alluvium to the west and south of the Isle (Gallois 1965). The east-west ridge itself has a complex drift geology including Bagshot Beds sand, Claygate Beds and Head deposits over London Clay (Dines *et al*. 1954; Holmes 1981).

The associated soils comprise a reddish-brown/brown clay ('brickearth' *sensu lato*), with patches of gravel, iron, and manganese staining and periglacial features (cf. Murton *et al*. 1998), which support mainly pelo-stagnogleys on higher ground, and pelo-alluvial soils on the marsh (Allen *et al*. 2008, 236). At the base of the gentle southern slope, towards the Swale, is a *c*.4km-wide area of saltmarsh. As a former cliff (Nichols *et al*. 2000) the northern slope is steeper, and the coastline is now only about 1km to the north of the site. In prehistory the location of the coastline was further to the north, providing significantly different resources. The northern part of the development area is divided by a large dry valley known as the 'Boarer's run'. Here, the main excavation area, located to the east of this north-facing valley, has a short but steep break in slope while the slopes on all other sides are more gradual.

Archaeological and historical background

Prior to the investigations of the last decade, only a small number of archaeological finds was known from the Isle of Sheppey. These include a Middle Bronze age palstave, spearhead and sickle, and a Late Iron Age currency bar, all from the foreshore near Minster. A Roman hoard of 2,500 radiate coins of the third century AD was found at Minster (Coles *et al*. 2003, 5; Kent HER Nr. TQ 97 SE 23) and another hoard, comprising 431 second-century coins, was discovered on the shore at Leysdown (Kent HER Nr. TQ 07 SW 8). A complex of Bronze Age barrows and cremation burials, Late Bronze Age land divisions and field systems, and later Iron Age to Anglo-Saxon settlement evidence is located at Shrubsoles Hill *c*.800m to the south-west of the site. Evidence of a similar date range has also been recorded during trial trenching at Norwood Manor (Coles *et al*. 2003, 5) (Fig. 1).

Late Iron Age and first to second-century Romano-British cremation burials were discovered during investigations along the A249 Bypass between Iwade and Queenborough (*Archaeologia Cantiana*, CXXIX, 2009, 361). Cremation burials of the second century AD were found at Halfway House (Mills 1969), and recently three urned cremation burials of the late first to early second century AD were discovered during an evaluation at Thistle Hill, south of Minster (Wessex Archaeology 2006).

A Late Bronze Age/Early Iron Age enclosure is present under the Minster Abbey (Philp and Chenery 1998), and other ephemeral Bronze Age features have been recovered in its proximity (Diack 2002). The abbey itself was established after AD 664 (probably *c*.675-9) as a Benedictine nunnery, which was deserted before the Norman Conquest. Refounded in 1130 as an Augustinian nunnery, it returned to Benedictine rule by 1186, subsequently reverting back to the Augustinian order by 1396 before dissolution in 1536 (Welch 2007, 241; Kent HER Nr. TQ 97 SE 1). More than 50 west-east aligned graves have been excavated in the Minster churchyard, some of which at least are likely to date from the late Anglo-Saxon period (Philp and Chenery 1998, 10-12; Richardson 2005, 57). Evidence of Anglo-Saxon settlement activity, possibly from the fifth century onwards, was recorded in the Abbey's vicinity (Kent HER Nr. TQ 97 SE 41), and five possible sunken-featured buildings were discovered at Barton Hill Drive in Minster (Kent HER Nr. TQ 97 SW85). However, the number of Anglo-Saxon settlement sites on the Isle of Sheppey remains markedly small, compared for instance with the Isle of Thanet which equally had a royal monastic foundation of the seventh century, at Minster-in-Thanet (Welch 2007, 197).

To the south-west of the site, Norwood Manor (Fig. 1) is known to have been a medieval manor and courthouse (S. Stevens 2009, 150), and some of the large number of saltworking mounds of medieval to post-medieval date known from the Isle of Sheppey have been found in its vicinity (Coles *et al*. 2003, 5).

The excavation results

For ease of reference in this article, the site is subdivided into Areas I-IV (Fig. 1). However, this is ultimately a reflection of the various stages of archaeological investigations, principally conducted by Wessex Archaeology and Archaeology South-East, but including an evaluation by Oxford Archaeology (see Appendix for list of interventions and archive reports, most of which are available online).

Neolithic

The two Neolithic causewayed enclosures, Kingsborough 1 (K1) and Kingsborough 2 (K2), were found in Areas I and III at either end of a spur running perpendicular to the east-west ridge (**Fig. 2**). Their centres are only *c*.375m apart, whilst the distance between their outer ditches is estimated at about 200m. Apart from having different 'viewsheds' – K1 facing south towards the Swale and the Kent mainland; K2 affording extensive views north across the Thames Estuary and the Essex coast beyond (Leivers and Allen in Allen *et al*. 2008, 278 fig. 17) – the two

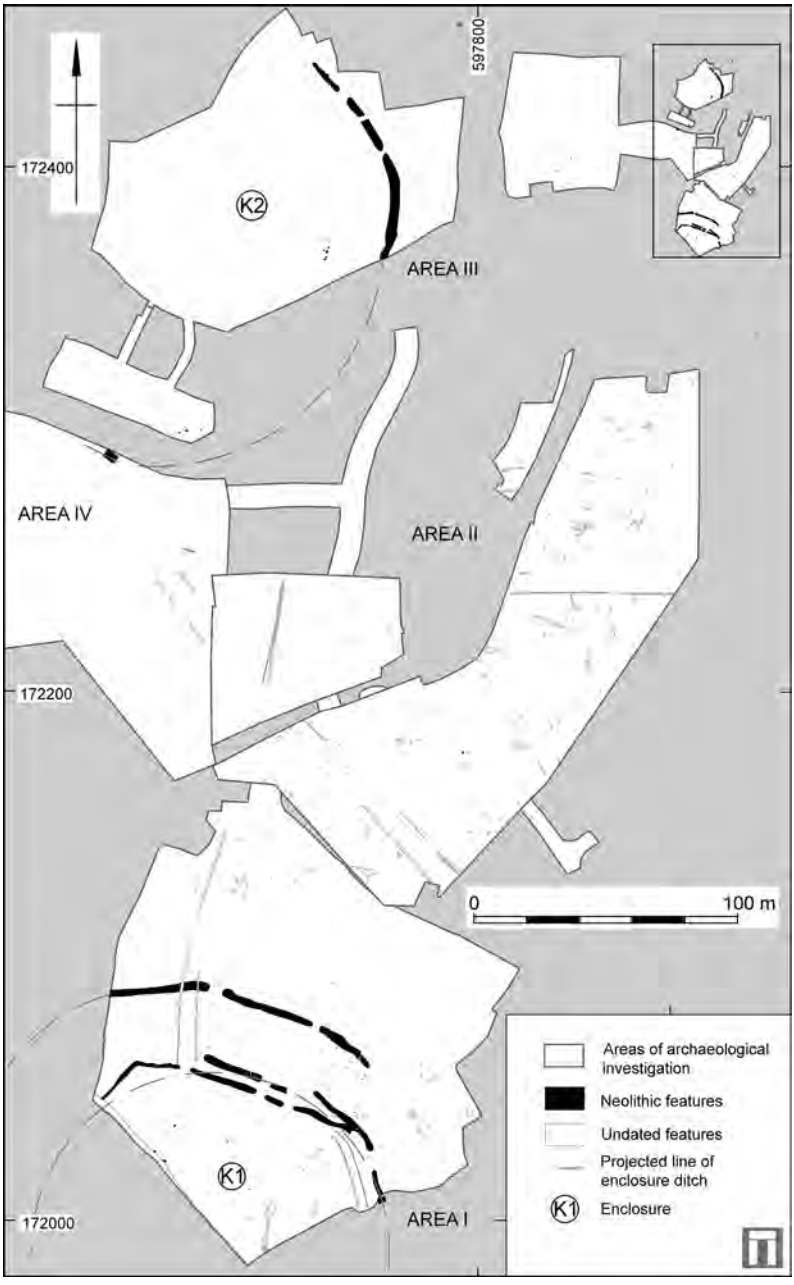

Fig. 2 Kingsborough, Isle of Sheppey. Neolithic features.

monuments are also of clearly different form. K1 has three concentric circuits and is assumed to be a complete enclosure; in contrast, K2 has an open-ended, D-shaped circuit whose ends are facing north-west towards the edge of the 'Boarer's Run' dry valley.

Three segments with two causeways were exposed of both the outer and the middle circuit of K1, forming approximately one quarter of an enclosure which, assuming it was circular in plan, would have had a diameter of *c*.200m (S. Stevens in Allen *et al*. 2008, 239-242 figs. 3-4). The outer circuit displayed a variety of profiles, while sections through the middle circuit revealed a flat-bottomed ditch. Five segments separated by three causeways were excavated of the inner circuit, which had a more V-shaped profile. Most ditch sections showed episodes of re-cutting and cleaning out, particularly at the terminals. Interpretation of sections, especially through the outer circuit, was problematic because of truncation possibly caused by ploughing and hillwash as well as disturbance by Romano-British cremation deposits and field systems. Significant assemblages of Neolithic pottery were recovered from sections through the middle and inner circuit, and the latter also contained most of the Neolithic flintwork as well as possible quernstones. In contrast, only limited quantities of Neolithic pottery and flintwork were recovered from the outer circuit, mainly from tertiary deposits, and no pottery at all from primary deposits. Additionally, three post-holes and a pit were dated to the Neolithic period. Some of the undated features within and outside of the enclosure may also be contemporary with it, although this cannot be decided with any degree of certainty considering the presence in the vicinity of features of proven later date.

The D-shaped single circuit enclosure K2 was located *c*.350m due north of K1 (Fig. 2). Three ditch segments belonging to the northern extent of the enclosure were investigated (Clelland in Allen *et al*. 2008, 242). The enclosure continued beyond the limit of excavation. A ditch recorded in a previous watching brief is likely to be part of the enclosure, suggesting that it formed an arc with an internal width of *c*.170m, its ends facing the north-west exposed slope of the dry valley. Two phases of recutting/cleaning out were identified in the northernmost segment, while the middle and southern segments each had three phases. Lenses of redeposited natural were occasionally found separating the secondary and tertiary silting sequences. As these lenses were predominantly found on the western side, i.e. the 'inside' of the ditch, it is assumed that they derive from erosion or levelling of an internal bank (*ibid*., 243-4, figs 5 and 6).

The middle segment contained a number of 'structured' or 'placed' deposits, for instance pottery, struck flint, quern fragments and some animal bone from the basal recut of the northern terminal. In the primary fill of the last recutting of the southern terminal a large fragment of a

ground stone axe had been placed over a small amount of animal bone. The axe is made of a hard, grey, Palaeozoic Sandstone, the nearest sources for which are either the Ardennes or Scandinavia (Leivers in Allen *et al*. 2008, 258 fig. 11B; 262). No placed deposits were found in the northern and southern segments; however, further finds included pottery, flint and a possible quern fragment from the secondary fill of the recut in the central part of the northern segment (Clelland in Allen *et al*. 2008, 245). Two post-hole groups were found within the enclosure, one near the south-eastern boundary of Area III in the middle of K2, the other in the southern part of the area. They did not form any discernible features but were included in the Early Neolithic phase on the basis of a few pottery sherds from their fills.

The earliest radiocarbon dates from the site come from the K1 enclosure but are likely to relate to pre-enclosure activity: charcoal and a hazelnut fragment probably relating to a clearance phase dating to 3980-3795 cal BC, pre-dating the construction of the enclosure by one hundred years or more. The Bayesian modelling of the radiocarbon dates suggests that of the two enclosures K2 appears to have been constructed first, in 3710-3635 cal BC, and being used for up to 185 years. Construction of K1 is suggested to date to 3660-3580 cal BC, with a use of up to 150 years (Allen and Bayliss in Allen *et al*. 2008, 264 table 3; 269 fig. 15). Thus, despite the slightly earlier construction date for K2, both enclosures were essentially used contemporaneously, a fact also borne out by the ceramic and lithic technologies from the two enclosures belonging essentially to the same traditions (Leivers and Allen in Allen *et al*. 2008, 279).

The Neolithic pottery from Kingsborough belongs to the Mildenhall (Childe and Smith 1954) or Decorated (Whittle 1977) style of early Neolithic pottery, which has a date range between 3800 and 3200 cal BC (Gibson and Leivers in Allen *et al*. 2008, 245-253). Although very similar at a broad level, detailed analysis has revealed differences between the assemblages from K1 and K2, for instance the use of ferruginous clays in the fabrics from K2, not present in those from K1. Such fabrics were equally found at the causewayed enclosure at Chalk Hill, Ramsgate. There is also a variation in the use of organic temper, with the K1 material containing small quantities of very fine organic material. While this is not unknown at K2, there are also two vesicular fabrics with organics as the main (somewhat impractical) tempering agent. The material includes grains, glumes, rachis and chaff of emmer wheat (Gibson and Leivers in Allen *et al*. 2008, 251).

A comparable picture of similarities at the broad level and interesting divergence in the finer detail also emerges from the analysis of the relatively small worked flint assemblages (K1: 854 pieces; K2: 143 pieces) (Butler and Leivers in Allen *et al*. 2008, 253-262). Both are relatively similar in their mix of – presumably – local raw material and tools. The

range of implements from K1 can be compared to those from Windmill Hill in Wiltshire, Staines in Surrey and Etton in Cambridgeshire, but at K1 their proportion is unusually high. There is evidence of the use of the implements as well as their working and processing. Bullhead flint makes up 20 per cent of the K1 assemblage but is much rarer at K2. As this material can be sourced locally from chalk overlain by Thanet beds, the varying amounts must be a deliberate choice of the users rather than a question of proximity to the raw material. The variations in the use of raw material and the technologies employed to work them could indicate different group associations; however, it has been suggested as more plausible that these differences are a reflection of divergent or complementary uses of the two enclosures, similar to other enclosure pairs (Oswald *et al*. 2001).

The material differences apparent between the two enclosures have been interpreted as representing 'activity on a large scale, probably involving some form of conspicuous consumption and ceremony undertaken by large groups of people' at K1, while the smaller assemblage from K2 suggests different activities on a smaller scale, some of which may even have been private, or secretive (Leivers and Allen in Allen *et al*. 2008, 279-282).

Bronze Age

After the monumental use of the landscape during the Neolithic period there was a hiatus in occupation of almost 2,500 years (Ellis and Allen in Allen *et al*. 2008, 282-288). Infrequent visits to the area in the Early Bronze Age are indicated by single sherds of pottery from a secondary fill of enclosure A and the upper silts of K2, which also contained an amber spacer bead. Radiocarbon dates from the tertiary fills of the ditches of the Neolithic enclosures show that they had almost entirely silted up by the Middle Bronze Age, although they and the corresponding banks would have still been visible as slight features.

Two cremation cemeteries containing unurned burials and redeposited pyre debris mark the first significant post-Neolithic activity (**Fig. 3**) (McKinley in Allen *et al*. 2008, 288-292). Seven unaccompanied cremation burials or cremation-related deposits were found in a line along the ridge and overlooking the shallow valley (col) on the eastern edge of Area II; one additional burial lay due north-east of enclosure A. A tightly clustered cemetery of 25 cremation burials or redeposited pyre debris was excavated to the north-east of enclosure E. Two radiocarbon dates of each of the cemeteries indicate the linear 'cemetery' is slightly earlier (1430-1260 cal BC) than the clustered cemetery (1260-970 cal BC), although the radiocarbon model suggests that the dated elements of the two cemeteries are statistically indistinguishable (Allen in Allen *et al*. 2008, 303; 305

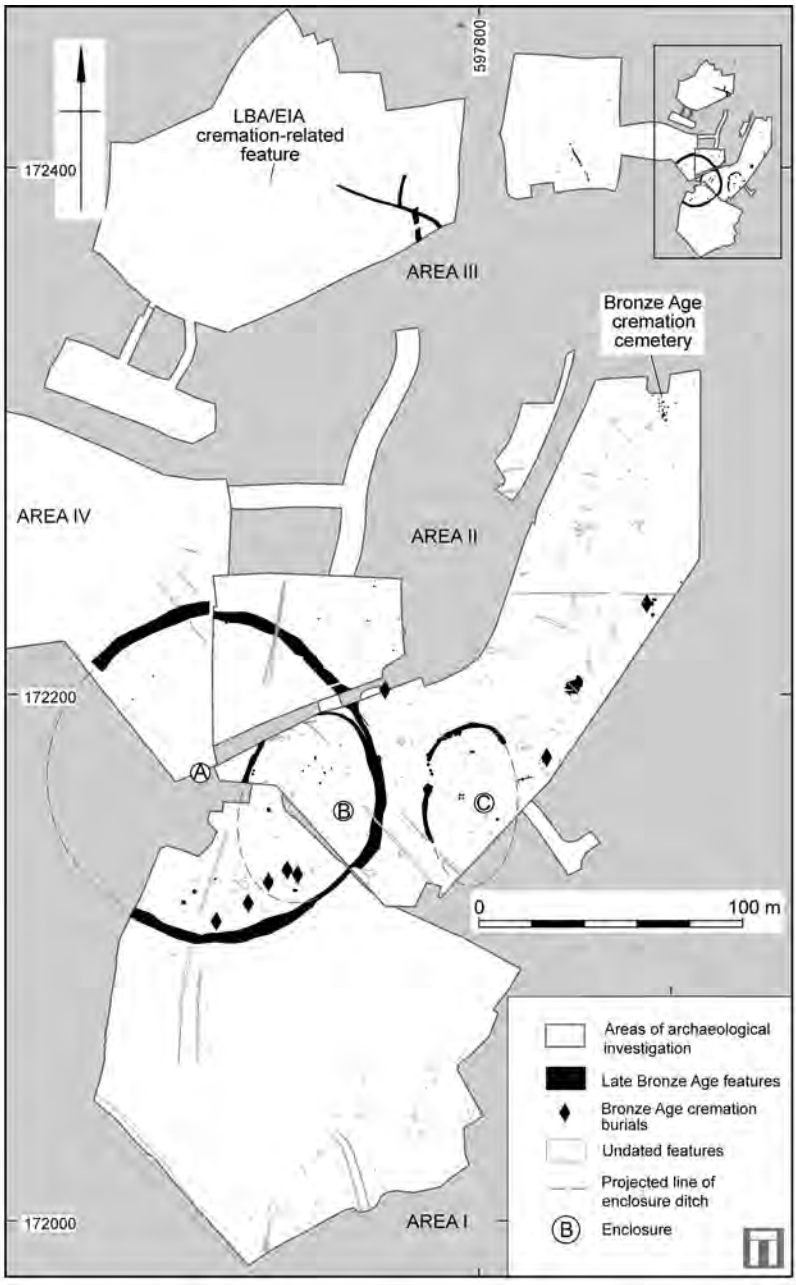

Fig. 3 Kingsborough, Isle of Sheppey. Bronze Age features.

figs 22 and 23). Broadly contemporary cremation burials and cremation-related deposits have also been found at Shrubsoles Hill, where some of the burials also appear to be aligned along an enclosure ditch, while the deposits appear to spread around the edges of the enclosure (Coles *et al*. 2003, 17-18).

The chronological resolution of the small material assemblage does not allow establishment of a closely phased sequence of the three enclosures (A-C) within the Late Bronze Age (LBA). Suggestions of a sequence are based on the stratigraphic relations and variations in shape of the enclosures and accompanying evidence, partially supported by radiocarbon results. Enclosure A appears to be the first and is the largest of the LBA enclosures. It is carefully sited between Neolithic K1 and K2 and seems to respect these enclosures, which would have been still visible. With a diameter of *c*.130m, covering an area of 1.3ha, it was of similar size to K1 and K2. The enclosure ditch had a steep U-shaped profile and was 4-5m wide and averaged 1.4m in depth. Although presumably almost two thirds of enclosure A has been excavated to date, no entrance has yet been discovered, which is in the unexcavated western circuit of the ditch. A single sample of charred residue from pottery, recovered from the base of a slot cut through the northern circuit of the enclosure ditch near the eastern limit of Area IV, returned a radiocarbon date between 1610-1120 cal. BC (3108±85 BP, NZA-29854). The relatively large radiocarbon error of ±85 years is due to low-carbon content, and the fabric of the sherd suggests a date nearer the later end of the date range (M. Leivers, pers. comm.). Evidence for recutting of the ditch during a later phase of its use, but before construction of enclosure B, was found along its eastern and northern extent. Apart from a number of shallow pits and post-holes, no discernible features were recognised within the enclosure, although it incidentally encompassed five cremation burials of the 'linear' cemetery.

Unfortunately, it has not been possible to discern the relationship between enclosure A and a line of parallel ditches – perhaps a trackway – intersecting the enclosure ditch in the north-west (Area IV) and south-east (Area II), where one of the ditches was thought to cut the enclosure (Fig. 3). The 0.15m-deep ditches appeared to be segmented, although it is possible that they were initially continuous but have subsequently been severely truncated. However, the well-defined gap between the south-westerly ditches immediately north of the enclosure may have been a deliberate break, possibly marked by two nearby post-holes located between, and aligned on, the parallel ditches. One of the post-holes contained several sherds from a small bowl of possibly Neolithic date. Late Bronze Age pottery from the northern ditches is abraded and may be residual, thus the dating of the ditches remains problematic. If the ditches pre-date the enclosure, they may have been associated with the Neolithic monuments. If they post-date it, it is likely they are considerably later,

after the Bronze Age enclosure ditch had fully silted up, as there is no evidence of deliberate backfilling.

Enclosure A was eventually replaced by ovate enclosures B and C. An initial well-defined terminal and entrance in the north-western side of enclosure B was subsequently closed. To its east lay enclosure C, which is assumed to be contemporary although there is no stratigraphic relationship between the two. It had an 8.5m-wide entrance on its north-western side. Together with two large post-holes in either of the terminals a line of three large post-holes may have belonged to an entrance structure that restricted the gap to 3.5m. A group of four post-holes near the centre of enclosure C is small (1.3 x 1.2m) compared to the Iron Age four-post structures in Middle Iron Age enclosure E. A *c*.12m long fence, which comprised at least 10 post-holes, was aligned east-west and perpendicular to the enclosure's postulated eastern circuit. An irregular-sided quarry pit lay 35m north-east of enclosure C and was unusual in that it contained a moderately sized finds assemblage including several pottery vessels and an unidentified copper alloy object.

Further Late Bronze Age/Early Iron Age features include two phases of probable field boundary ditches cutting across the eastern circuit of the Neolithic enclosure K2 in Area III. In the southern half of Area IV, a north-west/south-east oriented ditch could be traced for at least 110m, and a smaller ditch, running parallel *c*.4m further north-east, may be contemporary. These ditches, extending over the Kingsborough ridge, appear to be part of an extensive area of open grassland for grazing animals and rectangular fields for crop production (Ellis in Allen *et al*. 2008, 307). This landscape can be shown to have extended as far as Shrubsoles Hill, *c*.500m to the south, where similar field systems were discovered (Coles *et al*. 2003, 52).

Iron Age

A cremation-related feature or pyre deposit located in the centre of Area III was radiocarbon-dated to 800-510 cal BC. Although the pottery assemblage has a potential date range of Late Bronze Age to Middle Iron Age, no diagnostic Early Iron Age forms have been discovered at Kingsborough. It is therefore assumed that the Middle Iron Age phase represents renewed activity after a hiatus of several centuries (**Fig. 4**). The main features dated to the Middle Iron Age are a D-shaped enclosure within K1 (enclosure D in Area I; radiocarbon-dated to *c*.380-90 cal BC) and rectilinear enclosure E in Area II. Both enclosures contained four-post structures: enclosure D enclosed one and rectilinear enclosure E three, two of which were radiocarbon-dated to 380-110 cal BC (Allen in Allen *et al*. 2008, 303-4 tab. 16). While enclosure D and its four-post structure were artefact poor, the better defined ditches of enclosure E,

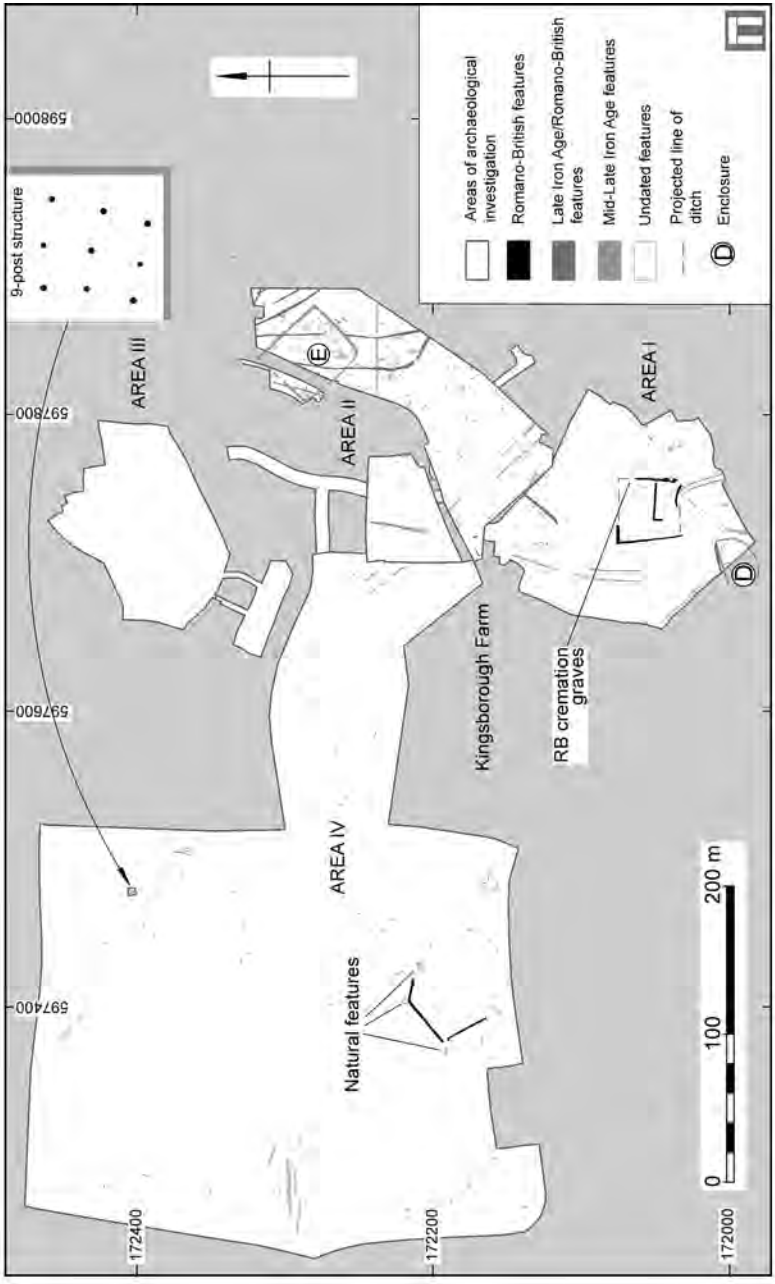

Fig. 4 Kingsborough, Isle of Sheppey. Iron Age and Romano-British features.

mainly its secondary fills, contained many finds, predominantly pottery, but also some burnt flint, fired clay and vesicular fuel ash slag. All post-holes of the four-post structures within it contained Middle Iron Age pottery as well as residual Middle to Late Bronze Age sherds. A line of three shallow oval pits has been included in the Middle Iron Age phase based on its alignment with the south-eastern side of enclosure E and also lying opposite its north-western entrance. While the small amount (42g) of fuel ash slag from the main enclosure ditch is not necessarily related to metalworking, three pieces (179g) of iron slag are considered to relate to iron working during the Middle Iron Age. The iron slag was found in an oval pit cut by a Late Iron Age/Romano-British field ditch located near the north-eastern corner of Area II (Ellis and Allen in Allen *et al*. 2008, 288).

Late Iron Age activity is indicated by the recut ditches of a possible droveway whose ditches cut across enclosure E (S. Stevens 2009, 129-30). However, the residual assemblage of Late Iron Age or early Romano-British pottery recovered from these ditches is too small to permit more precise dating (Lyne in S. Stevens 2009, 135).

A nine-post structure excavated in the north-eastern corner of Area IV was devoid of datable finds, but is included here as it most likely dates to the Iron Age or Romano-British period. The post-holes were laid out in a three by three grid *c*.3m square. The only find was a piece of undiagnostic worked flint from the north-western post-hole. A tenth, similar post-hole, *c*.2m to the north-west of the structure may be associated with it. Parallels for the structure are interpreted as granaries or other storage structures with raised floors, for instance Structure G at Redgate Hill, Hunstanton (Bradley *et al*. 1993, 76), and a structure at Glastonbury and Meare associated with preserved grain (Gent 1983, 250), both of which are dated to the 1st millennium BC. However, a nine-post granary at the Roman villa at Gorhambury was dated to the later 1st century AD (Goodburn 1978, 445).

Romano-British

Elements of Romano-British activity include the remains of a field system consisting of north-south and east-west aligned ditches of enclosures and droveways represented by ditches and gullies in Area I (Fig. 4). Pottery recovered from these ditches suggests a second- to third-century date (Lyne in S. Stevens 2009, 134-135). The remains of an enclosure in Area IV cannot be more closely dated within the Roman-British period, but its corner points may have taken their location from the position of trees which had collapsed by the Anglo-Saxon period, suggested by the inclusion of a small number of Anglo-Saxon sherds in the tree-throw holes. Apart from a small amount of Romano-British pottery, the

enclosure ditch also yielded a tile with a dog paw print and a quernstone fragment of Niedermendig Basalt Lava. Fragments of such quernstones were also recovered from medieval contexts (Barber in S. Stevens 2009, 139-140)

Two second-century cremation graves were found in the upper fill of the outer ditch of Neolithic causewayed enclosure K1 in Area I. Both graves were heavily truncated by ploughing, but one burial still contained three ceramic vessels, the other three ceramic vessels and one glass bottle (Barber in S. Stevens 2009, 138-139 fig. 5). A small platter was found in the plough soil close to the burials, but it remains uncertain from which grave it came. The grave with the glass bottle contained the remains of an unurned burial of an adult (*c*.23-40 yr.) female and the urned burial of an adult (*c*.30-45 yr.) possible male, while the other grave held the remains of the urned burial of an adult (*c*.30-45 yr.) individual (McKinley in S. Stevens 2009, 140-2 tab. 1).

Anglo-Saxon

A sunken-featured building in the southern annexe of Area III did not contain any identifiable finds, but charcoal from its fill provided a radiocarbon date of cal AD 430-650 (Allen in S. Stevens 2009, 148-9). Apart from this, evidence for Anglo-Saxon activity is confined to ditches of a ?rectangular enclosure and pits in Area II, and a tree-throw hole (see above) and a ditch in Area IV (**Fig. 5**). The pottery associated with these features clearly relates to activity in the fifth to seventh centuries (Mepham in S. Stevens 2009, 135-6), although their exact function remains uncertain.

The steep-sided ditch in the western part of Area IV contained a large dump of shellfish. The phasing of this ditch remains insecure as the only dating evidence is one sherd of Middle to Late Saxon sandy greyware, possibly a continental import (L. Mepham, pers. comm.). The shellfish dump was several metres long, included mussels, oysters and whelks and had been thrown into the ditch from the northern side. The dump may derive either from a settlement north of the ditch or from feasting on the hillside. This maybe reminiscent of a recent excavation on the hillside overlooking Pegwell Bay at Cliffs End Farm near Ramsgate (Leivers *et al.* forthcoming) where 69 Anglo-Saxon pits, often containing large numbers of shellfish, were found. There was an early Anglo-Saxon cemetery in the immediate vicinity at Cliffs End, and the shellfish may be the remains of feasting which continued into the Middle Anglo-Saxon period. It was noticeable at Cliffs End that the pits were only dug in an area from which the sea could be seen. The sea is also visible from the location of the ditch at Kingsborough Manor.

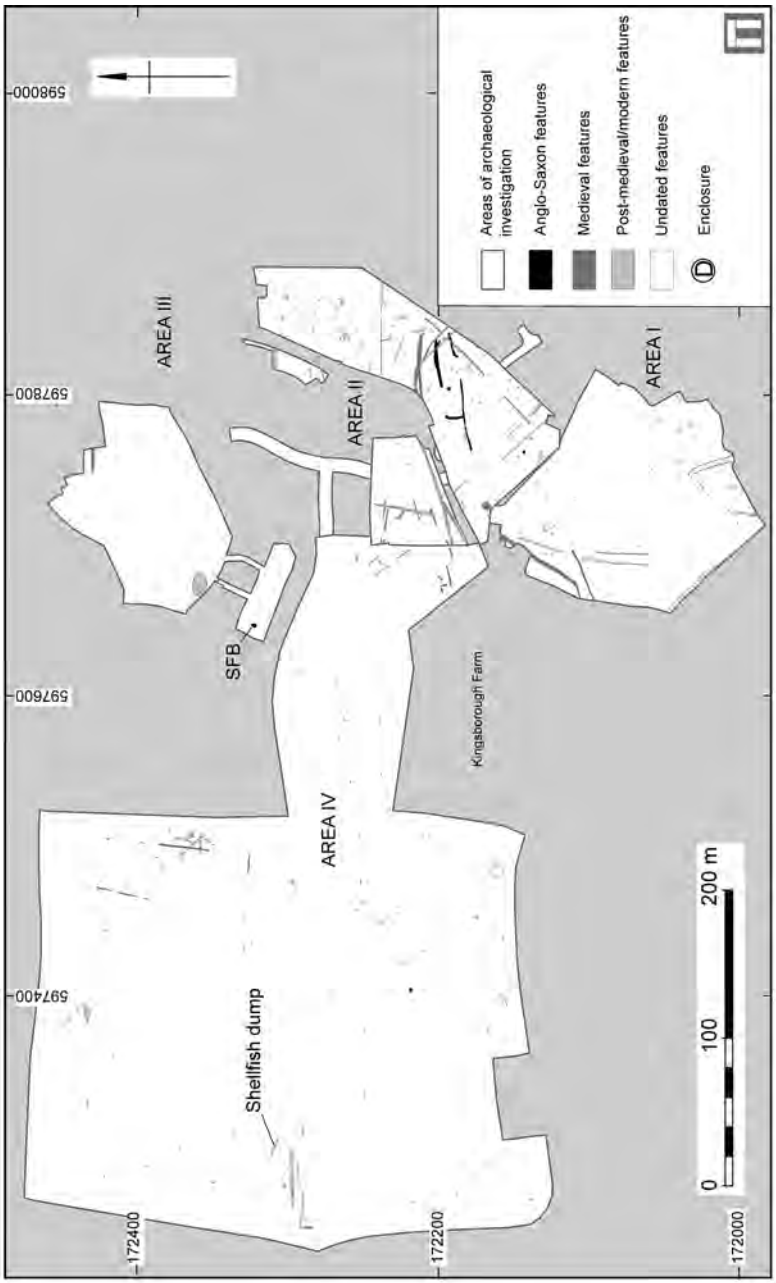

Fig. 5 Kingsborough, Isle of Sheppey. Anglo-Saxon, medieval and later features.

Medieval and later

A number of ditches and pits contained medieval pottery, most of which is likely to date to the 12th or 13th century (Barber in S. Stevens 2009, 136-8; Wessex Archaeology 2008, 13). The ditches are probably the remains of a north-south and east-west oriented field system with trackways. A small cluster of three ditches in the south-eastern corner of Area IV may have been the remains of barriers for livestock management. Only a small number of post-medieval and modern features were discovered, spread thinly across the site. They include short lengths of ditches, pits, brickearth quarries and tree-throw holes as well as a bomb-crater in Area III.

Overview of the environment of Kingsborough

Although the weakly calcareous deposits at the site were conducive to the preservation of neither land snails (Allen *et al*. 2008, 269) nor animal bone (Sibun in S. Stevens 2009, 142), analysis of pollen, charred plant remains and charcoal allow a broad reconstruction of the local environment and its use. Pollen samples from the northern segment of K2 show that the woodland preceding the clearance of the site before the construction of the causewayed enclosure included lime, but also some oak, alder and hornbeam. Following the clearance of woodland, hazel flowering or scrub growth is indicated by higher percentages of hazel in the lower fills of the enclosure ditch, while the local habitat after construction of the enclosure was open grassland, possibly pasture, with some cereal cultivation (Scaife in Allen *et al*. 2009, 269-271). In common with other Neolithic assemblages from southern England, cereals include emmer wheat, barley and free-threshing wheat. Differences in the assemblages from the two causewayed enclosures can be seen in the abundance of hazelnut shells from K1, which are rare at K2. Seeds and stones of other wild food resources like sloe and elder were also recovered from K1. Cereal grains were far more common at K1, but emmer chaff more so at K2. The chaff was used as temper for pottery, and organically tempered pottery was more frequent from this enclosure. The samples indicate that grain and wild foods had been processed at K1, while the predominance of emmer chaff at K2 appears to be associated with pottery production, carried out at the time of the harvest and the processing of cereals in late summer (C.J. Stevens in Allen *et al*. 2008, 271-274).

The small charcoal assemblages show the predominant use of oak for firewood, although other species used include hazel, the hawthorn group and blackthorn. The charcoal samples identified additional species to the pollen record, suggesting that the local environment supported a relatively broad spectrum of arboreal species growing in sparse or open woodland (Gale in Allen *et al*. 2008, 274-277).

The assemblages of charred plant remains recovered from the Middle to Late Bronze Age cremation assemblages suggest that fire breaks were created around pyres by removing the turf. Plant material, such as pignut tubers, onion couch grass internodes as well as the seeds and stems of other species like vetches and tares, was then picked out of the broken turf and used as tinder in the pyre. Onion couch grass is common in winter pastures, and it is likely that it formed large areas of dense grassland around Kingsborough. The presence of pignut is seen as being indicative of the clearance of woodland prior to the first pyres. Few differences were noted in the assemblages of charred cereal remains from later Bronze Age and Middle Iron Age features, but it appears that emmer was more frequent than spelt in the Late Bronze Age, while they are co-dominant from the Middle Iron Age into the Late Iron Age/Romano-British period. Both hulled barley and free-threshing wheat are poorly represented. Samples from one of the Middle Iron Age four-post structures in Enclosure E were rich in leguminous seeds, especially pea and to a lesser extent broad bean (C.J. Stevens in Allen *et al*. 2008, 296-299).

The charcoal from Middle Bronze Age and Iron Age features included a wide range of tree and shrub species, dominated by oak but also woodland trees such as field maple, birch, ash, beech, yew, holly, and shrubby species, including hazel, blackthorn, the hawthorn/Sorbus group, purging buckthorn, and gorse/broom. Species like yew and buckthorn were only recovered from pyre contexts, which were dominated by oak, and as they are unlikely to have favoured the locally acidic soils it is suggested that they were specially brought to the site as artefacts or ritual items (Gale in Allen *et al*. 2008, 299-302). Beech was not found in samples pre-dating the medieval period, and its more frequent occurrence in southern Britain in medieval and younger contexts may reflect changes in woodland management. It is possible that beech wood was not local to Sheppey but imported to the site (Gale in S. Stevens 2009, 143-145).

Samples of charred remains from Late Iron Age/Romano-British contexts provided evidence for the cultivation of emmer and spelt wheat, and to a lesser extent of barley. Typically for Kent, emmer is dominant or co-dominant with spelt, while the latter is the main crop in Iron Age England. Hundreds of flax capsules from a recut of the western ditch of the droveway across enclosure E indicate a use of the seeds as linseed. The medieval samples may be indicative of the use of different soils, with rye and barley from lighter, drier soils and free-threshing wheat from heavier clays. Broad bean and probably pea were also found (C.J. Stevens in S. Stevens 2009, 145-147).

Conclusion

A decade of archaeological investigations has revealed human activity in

the landscape around Kingsborough since the Early Neolithic period on a scale hitherto unknown for the Isle of Sheppey. Although the evidence does not show continuous occupation of the site, Allen *et al.* (2008, 313-315) do not necessarily want to interpret this as evidence of a lack of activity, but rather a 'shifting of secular and agricultural practices across the landscape'. The importance of the location and its specific topography affording different viewsheds is clearly indicated by the construction of two Early Neolithic causewayed enclosures, taking advantage of the clearance of the site, which is what 'may have imbued the area with significance – denoting the presence of the ancestors' (*ibid.*, 314). Following the Neolithic ceremonial and secular activity no structural evidence was found dating to the following two and a half millennia, although there are still glimpses of ?occasional human presence (amber bead and Early Bronze Age pottery). The ritual/funerary activity of the Middle to Late Bronze Age was clearly sited with reference to the earlier enclosures, but respected and avoided them. The same is true of the Late Bronze Age enclosure A, while all subsequent activity was less concerned with the past (*ibid.*). The enclosures and the activities they represent appear to be more secular/functional, but with the exception of the Anglo-Saxon sunken-featured building suggesting the immediate vicinity of a settlement, the area was given over to agricultural activities at or beyond the fringes of settlements which remain to be located. However, for the medieval period Norwood Manor, *c.*250m to the south, is likely to be the focus of the settlement from which, or for which, the field systems in the area were operated. The housing development of the late twentieth- and early twenty-first centuries is thus the first purely domestic occupation of the site.

From a methodological point of view the investigations at Kingsborough have emphasised the importance of large, open area excavation without which the Neolithic causewayed enclosures would not have been found: in both cases the area had been stripped and the features only became visible after weathering out for weeks.

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APPENDIX. Fieldwork interventions and archive reports

Type	Area	Site code	Date of Fieldwork	Report
Evaluation	I–II	KIF99	March 1999	Archaeology South-East 1999
Excavation	I	KFE99	April–May 1999	Archaeology South-East 2000
Evaluation	II	46792	July 1999	*Wessex Archaeology 2002
Watching briefs	II roads & gas pipeline	46792	July 1999	*Wessex Archaeology 2002
Excavation	II	46792	Jan–April 2000 June 2001	*Wessex Archaeology 2002
Evaluation	III	2245	April–May 2004	Oxford Archaeology 2004
Excavation	III	57170	July–Sept 2005	*Wessex Archaeology 2005b
Evaluation	IV	59630	April 2005	*Wessex Archaeology 2005a
Excavation	IV (south only)	62620	March–April and June 2006	*Wessex Archaeology 2007
Evaluation, Excavation, Strip, Map and Record	IV	62621	Aug–Sep 2007 and Feb–March 2008	*Wessex Archaeology 2008

N.B. Reports marked * are available online at http://www.wessexarch.co.uk/projects/kent/kingsborough

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