East Midlands Historic Environment Research Framework
Updated Period Resource Assessment: The Later Bronze Age and Iron Age

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PART I. The Resource

1. Introduction to the Resource Assessment

This Assessment updates the one prepared twenty years ago for this formative period in the East Midlands. It aims to summarize the nature of the evidence for the first millennium BC as recorded and currently understood. A huge amount of data is now available as a result of concerted effort and investment. Part I outlines the manner of collection of this information, present challenges, and the variability of the record from across the region. Part II presents the information by chronological division, while Part III considers evidence categories. These components of the Resource hold the potential for addressing the Agenda and Strategy priorities of the Framework. This tripartite structure mirrors that of the original Assessment and thereby enables comparison between that document and the present statement. The opportunity has been taken to include a greater range of evidence types and detail, given the richness of the data now to hand.

1.1. The Geographic Area, Recovery of the Resource and the Context of this Assessment

This Assessment updates the one prepared twenty years ago for this formative period in the East Midlands (Willis 2006). The Assessment represented an initial stage in the development of the East Midlands Archaeological Research Framework (EMRF). The preparation of the original Assessment covered many months of collating information and as with the Assessments for other periods was submitted in March 2003. It was made available online with the Assessments for all periods published in a printed volume edited by Nicholas Cooper in 2006 (see Cooper and Clay 2006, 3, for the genesis of the original Framework documents). A number of key sites for the era had at that time been excavated, but only provisional details were available in some cases; these sites can now be drawn on in full. The years since 2003 have seen a huge expansion of information, particularly as a result of development-related fieldwork, but also from other avenues including community projects, metal detecting and scientific advances. The practicalities of managing and assimilating all the new information are a challenge for the whole sector; for this update selectivity has necessarily been exercised given the scale of the recent interventions and discovery. The aim of this revision, nonetheless, has been even and representative coverage of the region to the extent this is possible, based on the variations in the geography of past investigations and records, and the quality of that existing knowledge.

This Assessment covers Derbyshire, Leicestershire, Lincolnshire Northamptonshire, Nottinghamshire and Rutland. The administrative districts of North Lincolnshire and North-East Lincolnshire (between 1974 and 1996 part of Humberside, but originally parts of the historic county of Lincolnshire) were not included in the area designation of the earlier Assessment (see Cooper and Clay 2006, 1-3 for explanation), though some references to key sites in those areas were included given the geographic and past cultural proximity. The brief for the current Assessment specifies that they are formally included in this updated review, consistent with other organizational structures for the East Midlands (Knight and Owen 2020,

3).

Lying at the heart of England, the region spans the markedly different physical (lowland and upland) zones that reflect also economic and cultural contrasts. Archaeological remains of the first millennium BC are widely and liberally distributed across the East Midlands. In places these remains are dense, multi-phase and artefactually rich. In some areas there is exceptionally good preservation which is often not limited to isolated sites, but represents the extensive remnants of past occupied and experienced landscapes - for instance, in the major valleys of Northamptonshire, The Fens of Lincolnshire, and some parts of north Derbyshire. The varied character of the sites, monuments and feature types has led to various modern approaches – different archaeologies – as the particular nature of the remains requires. Everywhere the archaeological record attests to variation; both differences of detail within broader trends and themes, and contrasts of substance and form, and hence (presumably) meaning. Interest lies in defining the major trends and patterns of similarity, while exploring the balance of these strands of difference. Tracing and interpreting the information, as it survives, is the prerogative, challenge and reward of the archaeologist working in later prehistory and of those sharing a curiosity in the period. The first millennium BC was an era of comparatively rapid social and cultural developments, generating a dynamic archaeological record. Yet the expression and experience of life in the first millennium BC contrasted in some aspects region to region; Haselgrove *et al.* (2001, 22-5) noted that regional differences were a standard feature of the British Iron Age and that their definition and evaluation is an important objective for research. In sum, the East Midlands is a key area for observing and understanding these broad changes (cf. Haselgrove 1999a; 1999b), as it contains a diverse matrix of evidence, constituting a substantive resource.

1.2 Data Sources

The three decades since the publication of Planning Policy Guidance 16 in 1990 have seen an explosion in archaeological data. Commercially funded investigations and publications have greatly enhanced the quality of the documentation available, and there has been no shortage of interpretations of sites and of the period. That said, our comprehension of the nature of society at this time still remains markedly patchy. As noted in the original Resource Assessment (Willis 2006) there remain areas of considerable weakness in our knowledge. Knowledge of the first millennium BC is still partial and variable across the region, being determined by familiar factors, but particularly now the uneven distribution of modern development. In consequence some areas have been subject to numerous archaeological interventions while in others there has been little such activity. The concentration of modern development along particular corridors and places in the contemporary landscape exacerbates the issue. Other factors include the variable visibility of the record (itself the consequence of various factors), the extent of arable cultivation (conducive to generating cropmarks and fieldwalking and metal-detecting data), and endemic difficulties encountered in developing chronologies.

As with the original Resource Assessment this guide aims to outline and characterise the nature of the known archaeological resource for the region. It follows, to begin with, a chronological

path (Part II), and progresses to a thematic review (Part III). These elements outline the known Resource and the extent of its exploration that hold the potential for addressing the Agenda and Strategy components of the Framework (cf. Knight *et al*. 2012). Strengths, weaknesses and imbalances in our knowledge are highlighted. Regarding distillation of the broad picture, the later 20th century and turn of the millennium saw several synthetic studies each following a methodical, sophisticated approaches drawing on the quality of the evidence from the region (cf. Knight 1984; Haselgrove 1999a; Knight 2002; Lane and Morris 2001). These were supplemented by several more recent works on specific categories of evidence (e.g. Leins 2011; Farley 2012; Markoulaki 2014). Nonetheless, it must be accepted that for some sub-regions, periods, and evidence types the record is still too limited to permit anything approaching comprehensive synthesis. On the whole, however, it is clear that there is a rich and nuanced record of this period across the extent of the East Midland counties. The sites recorded to date, together with those yet to be explored, comprise a valuable and complex resource with tremendous potential for future engagement, through fieldwork, analysis, interpretation, education and display. This can be achieved through wide involvement utilizing the strong and accessible data archiving infrastructure. By this means a robust and textured understanding of practice, experience, environment and society continues to emerge for the era.

1.3 Chronology

1.3.1 Chronology: Challenges and Scope

Unlocking the potential of the archaeological remains of the first millennium BC is dependent upon our ability to construct a satisfactory chronological framework. Such frameworks allow us to place remains into sequences, to comprehend contemporary similarities and differences, to analyse developments and trajectories, and to undertake valid comparison. Although, in terms of human history, the first millennium BC was not an especially long period, it witnessed in southern Britain a comparatively rapid set of fundamental developments, and preceded a period in which dating can be quite precise.

One might in principle, therefore, anticipate the development of a subtle chronology for the first millennium BC. In fact, establishing a reliable dating framework has proved far from straightforward. Rather it has proved an 'Achilles' Heel' for studies of the period both more broadly on a national scale (e.g. Willis 2002) as well as within the region (Knight 2002). This is due to several factors. Significant amongst these have been: (i) the conservatism and lack of elaboration of regional pottery traditions; (ii) the paucity of pottery finds for the earlier first millennium BC; (iii) the limited corpus of metalwork finds, especially in stratified association, when changes in metalworking technology and types has been traditionally accorded a key chronological significance for the period (cf. Cunliffe 2005, 3-23; May 1976a, 102-201); (iv) the well-known problems with regard to the radiocarbon calibration curve during this era (Barnett 2000; 2001; Knight 2002; Willis 2002; Monckton 2006); (v) a previous lack of robust sampling strategies aimed at collecting absolute dates (see Haselgrove *et al*. 2001); and (vi) the nature of sites of the period and their survival is such

that there is often little by way of stratified layering to link deposits and features, while key intercutting features may have few finds, that are not residual. A case in point is the settlement site at Holme Dyke, Gonalston, Nottinghamshire, where an Iron Age roundhouse sequence (Note 1) shows two phases of wall trenching and a later post-hole ring together with recut entrance post-holes; all of these features lie within an enclosure ditch but are not linked to the enclosure by stratification, frustrating attempts to elucidate the structural sequence; what features were contemporary remains uncertain (Knight and Elliott 2008, 172, figs 10-11). Further examples are provided by pit alignments and multiple dyke systems, monuments which have become increasingly recognized as key elements of the East Midland first millennium landscape, but which have proved difficult to date (cf. Section 7).

As a consequence of the above factors, dates attributed to excavated sites and phases have been broad and vague, the 'precision' being stated in terms of centuries or half centuries. This constitutes a fundamental difficulty for our connection with the resource and its interpretation. The challenges are attested in many reports, as the monographs on the work at Billingborough, Lincolnshire (Chowne *et al*. 2001, 7-20 and 89) and Covert Farm, Crick, Northamptonshire (Hughes and Woodward 2015, 9-17), and the report on the Iron Age enclosure site of Enderby II (Meek *et al*. 2004, 29) readily demonstrate. More positively, there is likely potential for establishing absolute artefact chronologies, particularly firmer ceramic phases, for the first millennium BC (cf. Needham *et al*. 1997). Issues relating to first millennium BC pottery and chronology generally in Britain were discussed by Willis (2002), specifically by Jackson and Dix, in the case of Northamptonshire (Jackson and Dix 1987), and, for the region by Knight. His work on the regional pottery sequence (Knight 2002; 2010) has significantly assisted date attributions, albeit within the limitations that are a function of the nature and frequency of the ceramics of this period in the region.

The utility of radiocarbon dating has improved over the past two decades as a consequence of more critically aware sampling strategies, multiple sampling, accelerator dating and Bayesian techniques (cf. Haselgrove *et al*. 2001). Advances with radiocarbon dating for the Iron Age in recent years are having a significant impact on our general chronological grasp of the period (see Hamilton *et al*. 2015; Hamilton and Haselgrove 2019; Waddington *et al*. 2019). Multiple sampling for radiocarbon dates and the application of Bayesian statistics have resulted in more precise dating schemes based on probabilities, Hallam Fields, Birstall, and Fin Cop, Derbyshire, being cases in point (Speed 2010, 36-7, table 2; for Fin Cop see Section 6 for references). Bayesian modelling of the relatively few dates assisted the dating at Humberstone, Manor Farm, as well as the recognition of distinctions in the Iron Age pottery styles (Thomas 2011a). In the case of Burrough Hill, Leicestershire, as part of the current post-excavation stage, provisional modelling of C14 dates using the Bayesian approach has proved instructive (pers. comm. John Thomas, January 2022). Bayesian modelling was also undertaken for Sutton Common, South Yorkshire, just to the north of the East Midlands region (see Section 6). The approach has also been used to explore the dating of artefact deposition at Burrough Hill, and in the case of the Enderby shield (see Section 4.5.4). However, dating work in the case of Glenfield Park, Leicestershire, has highlighted the problems that still exist (pers. comm. John Thomas, January 2022;

Thomas 2018). Pearce and Davis' examination of Bronze Age metalwork from the Trent valley specifically focuses on dating using Bayesian modelling (Pearce and Davis forthcoming).

In contrast to the progress with radiocarbon dating, the early promise associated with luminescence dating in establishing chronologies for the period (e.g. Willis 2002) has yet to be fulfilled. As noted in the original Resource Assessment thermoluminescence dating of both ceramics and soils had been seen as a potentially useful chronological tool for the first millennium BC (Willis 2006, 129). The possibility that the method would provide close and reliable dating was, twenty years ago, however, always uncertain as shown by mixed success through its experimental deployment during the 1980s and 1990s (e.g. Heslop 1987; Beamish 1998). In the East Midlands the method was systematically deployed during the excavations in Northamptonshire, at Covert Farm, Crick, but the results proved problematic in a number of ways and could not be adopted for dating the site phasing scheme (Hughes and Woodward 2015, 15). Presently, dates arising from luminescence really require corroboration by other indicators to ensure confidence in the method: comparison of the results of different techniques remains important. In any case, deployment of the method has been restricted in recent years.

Comparatively little material has been recovered for dendrochronological dating, the study of the wood from Fiskerton, in the Witham Valley, being a significant exception (Field and Parker Pearson 2003). A small number of samples for dendrochronological dating were collected at the Late Bronze Age site at Washingborough, also on the Witham but no dates could be obtained for a variety of reasons; one important reason for this was that lack of sufficient (likely) contemporaneous sequences from the region (Tyers 2009). At Sutton Common (see above this Section) measurement for tree-ring dating was conducted; a sequence for nine samples from posts used in the construction of a palisade produced a 70-year site mean, but neither this, nor any solitary sequences, could not be matched with known dated chronologies (Nayling 2001).

Archaeomagnetic dating has also been little used for sites within the region, but has been shown to provide useful results when suitable contexts are encountered, as demonstrated by work at the Rainsborough hillfort, Northamptonshire (Clelland and Batt 2010). To place these matters in a wider frame of reference, most dating in archaeology is inherently 'fuzzy' (Millett 1987) but given that the main need is to locate data in sequences that can be related to each other, the steady accumulation of dates for material from secure contexts has contributed to a gradual improvement in our understanding of the chronology of the first millennium BC.

Archaeological remains lie in 'drifts' through human lived pasts. That is to say the landscape of the archaeological past is uneven: there are periods and places where the remains are quantitatively thicker (and perhaps more pursued and studied) and there are others where the record is thin (in actuality and/or through lack of exploration). This is very evidently the case with the East Midlands during the first millennium BC. The uneven character of the record in temporal

terms has been considered elsewhere (Willis 1997), while its geographical imbalance will be readily apparent from the present Assessment. For instance, a high proportion of sites known from Northamptonshire occur in the Nene valley and on the Limestone. These were doubtless favourable areas for settlement and farming but the higher density of known sites in these environments may reflect in large part the suitability of these geologies to cropmark generation and the extensive archaeological investigations undertaken in these specific areas in advance of large-scale mineral extraction, together with other developments such as house building and infrastructure work in the valley (Willis 2013a). Our ability to build chronological frameworks and to date sites and phases is determined by the nature of these 'drifts' in the archaeological record, the *qualities* of those remains (whether, for example, there are typological developments enabling us to determine sequences, or discovery of material suitable for absolute dating) and the utility of our methodologies (e.g. typologies and 'scientific' dating).

In this Assessment the evidence is divided into four phases in order to aid the identification of trends and to assist interpretation and discussion. These phases are conventional: the Late Bronze Age; the earlier Iron Age; the Middle Iron Age; and the Late Iron Age (for their approximate dates see Table 1). This separation is attempted for the settlement and artefactual evidence sets, in their broadest definition, although some evidence categories are considered under separate headings in Part III. Of course these four phases do not correspond with neatly discernible changes in site horizons, types and forms. Here, as in other works covering the period, dates and attributions are inexact (as noted above). Generally this is not problematic for the present review, which aims to unite the various strands of data into a broad picture of the nature and development of the region through this era, and to define areas of relative strength and weakness within the available archaeological data. The four phases conform to Hill's structure for the period (Hill 1995a), and they are 'ideal' categories in the Weberian sense; that is to say their status is that of a tool created for purposes of helpful instruction - in this case, approximations to periods of time and phases of cultural practice. The four chronological phases used here accord with (i) the periodized labelling of the evidence in the original county-wide Assessments, which were drawn on for the original Resource Assessment, with the exception of Northamptonshire (see below), and (ii) those employed elsewhere, principally in the extensive published and archived literature on excavated and surveyed sites and landscapes, as well as artefacts and ecofacts, and embedded in the region's county Historic Environment Records (HERs).

Figure. Knight's scheme of the chronology of the East Midlands …

Developing this consideration of chronology further, we can recognize a difficulty arising from the fact that the pottery sequences for the region do not change comfortably in step with the four-fold periodisation employed here, although there is *broad* correspondence (Knight 2002; 2010). This is problematic since pottery is the main artefact class recovered, on which reliance has had to be placed for dating in the absence of other means. Specific difficulties exist in distinguishing 'Late Bronze Age pottery' from 'Early Iron Age pottery' resulting in an amalgam of sites which can only be broadly labelled Late Bronze Age – Early Iron Age. The situation is exacerbated by the infrequency of other dating evidence through the earlier first

millennium given that some sites have only pottery finds (often small quantities with few date-indicative rims or other sherds). In addition where metal items do occur such objects are typically undiagnostic or not usefully stratified. Bone artefacts and animal bone groups are often equally sparse at such sites (as at Milton Ham, Northamptonshire: Leslie and King 2021) or has been 'lost' in acid soils. Equally the debut of Middle Iron Age pottery styles is not securely anchored, and, moreover, these styles endured across parts of the region well into, and indeed, beyond what we term the Late Iron Age (e.g. Pryor 1984, 155; Rollo 1988; cf. Knight 2002). In other words, pottery that is stylistically or technologically of Middle Iron Age tradition was still being made through the later Iron Age, forming significant proportions of many assemblages alongside typologically later types. Consequently, as Kidd has pointed out in the case of Northamptonshire, a proportion of sites occupied during the period *c.* 100 BC to AD 50 have Middle Iron Age cultural associations (cf. Kidd 2004). This phenomenon raises interesting questions for those studying cultural expression, practice and change during the period, and awkward questions *vis-à-vis* the typological approach to chronology. For instance, sites occupied during the 'Late Iron Age' may be incorrectly dated because they seem earlier on the basis of their pottery. For this reason, in the original Resource Assessment for Northamptonshire, Kidd placed some sites which lack 'Late Iron Age' cultural indicators in the Middle Iron Age bracket or within a Middle/Late Iron Age bracket, at variance with the periods assigned by their excavators (e.g. some Wootton Hill style enclosures, such as Aldwincle and Brigstock; see Jackson 1989). Finally, it should be emphasised that there are few excavated sites of the period within the region which have long stratified sequences to assist sophisticated relative dating, though among these is the site of Dragonby, North Lincolnshire, where a long sequence of ceramic phases was discerned (albeit relating to a comparatively short period through the later Iron Age), the outcome of conscientious study and where the pottery was very thoroughly reported (Elsdon and May 1996).

[Tables 1 and 2 Here]

Table 2 characterises each of the four chronological phases of the era considered by this Assessment, and summarises these uncertainties. Many key questions can, of course, be addressed without the need for precise dating, although in most cases the quality and subtlety of the answers is improved by the existence of a refined chronological framework and 'closely' dated site evidence.

1.3.2 Chronology: Recommendations

While undertaking this Assessment update it became clear that scientific dates are now more routinely secured, being enabled within recent project budgets. Several factors, however, mean that the piecemeal accumulation of dates can be better harnessed to facilitate a stronger anchoring of the processes and manifestations of change through the first millennium BC. This is a fundamental aspect for the comprehension of the period. It would have been desirable for this Assessment exercise to have had the time resource to collate reported dates, but a particular issue here is the highly variable ad hoc manner in which the scientific (most commonly radiocarbon dates) are presented in the reports, ranging from lab graphs and full

audit details and commentaries to only the headline summary of an interpretation of such dates. In other words no standard is being adhered to across the range of those preparing reports. This hinders collation and the ability to establish overall trends and to make comparisons. Accordingly, it is recommended that a standard is adhered to, most obviously the full reporting of the lab data and commentary.

Further, it is apparent from this update that there has been no substantive progress with the recommended EMRF Agenda and Strategy objectives for the Late Bronze Age and Iron Age focused on improving chronological understanding (Knight *et al*. 2012; now online). EMRF Agenda point 4.1.1 specifies the aim of maximizing the potential of scientific dating methods as tools for refining the regional chronological framework for the first millennium BC, with Agenda point 4.1.2 asking 'How can we refine further the ceramic chronology for the first millennium BC?' These points gave rise to the Strategy objectives 4A and 4B. The aim of Strategy 4A is to 'Compile an audit of radiocarbon, dendrochronological and other scientific dates' and 4B 'Refine first millennium BC ceramic chronology by additional radiocarbon dating and typological analyses'. To realize the objective of Strategy 4A a dedicated project will be necessary (noting the initiative compiling regional dates for Bronze Age metalwork conducted by Pearce and Davis cf. above, Section 1.3.1). With 4B, again, a bespoke undertaking is required, as it is unlikely this would happen through present means, unless large scale projects conducted in the region can enshrine this in their designs, as, indeed, had featured as an ambition in the Crick, Covert Farm, Project Design in the late 1990s (Hughes 1998; Hughes and Woodward 2015).

Sites where C14 dates have been obtained and Bayesian modelling applied are noted in Section 1.3.1 providing good models for practice in establishing site-specific chronology. Where possible this should become routine if the subject is to establish site date and duration adequately. This will also assist development in dating region-wide processes and the tempo of change.

The expanded sample of dates now available, together with the aforementioned site-focused radiocarbon dating programmes, benefitting from applied Bayesian modelling, means there is a realistic prospect that a region-wide collation and assessment of these determinations will result in an enhanced understanding of the unfolding processes of the period through time, particularly where this can be linked to stratified ceramics. Collation and assessment of these dates should be considered a priority.

1.4 The Nature of the Evidence: Sub-Regional Differences, Differential Archaeological Visibility and a Changing Archaeological Record

Three inherent factors structure the evidence for the first millennium BC in the East Midlands and consequently affect its analysis and interpretation.

1.4.1 Sub-regional Differences in the Record

There are marked sub-regional differences in the quantity of evidence documented in the county/administrative HERs and in other databases such as that of the Portable Antiquities Scheme (Note 2). This arises for a variety of reasons. A major variation, emphasised by Bishop (2000), is between the region's 'lowland' and 'highland' zones. This is significant for all periods. Investigating these differences is a matter of considerable archaeological interest and potential, warranting specific attention (cf. Cockrell 2016). 'Highland' areas have much less arable land, with pasture predominant today, even in valley floors, plus forest and bracken scrub. This is relevant as arable regimes are conducive to the generation of cropmarks and site detection via fieldwalking, metal detecting and other types of survey, but have been associated with piecemeal erosion of underlying deposits, as is well-known. The point is that sites are particularly visible under conditions of modern arable cultivation. The paucity of Iron Age sites identified in parts of the uplands of north-western Nottinghamshire and Derbyshire (especially the Peak District National Park region) may be partly due to the lack of modern arable cultivation at such places (cf. Bevan 2000), but also low frequency of pottery use through the period, creating a false impression of modest levels of settlement at the time. In the valleys of these areas, other means of site detection might be systematically undertaken and LiDAR data studies may be one of those approaches. Elsewhere, factors include post-first millennium BC alluvial and colluvial accumulations over lower valley slopes and in valley floors, as seen on a major scale in the Witham valley south of Lincoln (French and Rackham 2003; Rackham *et al*. 2004) and sea level changes in Lincolnshire, notably, in The Fens and Humberhead Levels.

Equally, turning from detection to past settlement and farming preferences, across north-west Europe generally, river valleys with their sand/silt/gravel subsoils were preferred areas to settle and farm in later prehistory, with the possibilities of access to differing local environments (valley floors and flood plain, valley slopes and higher surrounding land) presenting a variety of conditions for mixed agriculture. Settlement and access routes were often on valley slope edges. These locations are often conducive to cropmark generation through the nature of the sub-soils and enable detection of past activity through modern arable cultivation as noted above. This is also the case in the East Midlands. In consequence the proportion of records for the period is towards valley and lowland localities. This is illustrated by the case of the Nene valley, which has double the density of HER entries for the Iron Age than the next highest geology/density area of the county (Willis 2013a). A qualification remains that evidence can be concealed in valley locations as a consequence of alluvial and colluvial deposition.

Julius Caesar tells us that Britain in the mid-first century BC had an exceedingly large population and that the landscape was heavily dotted with homesteads (Caesar, Book V.1.12). There is a conventional view that population numbers increased strongly through the first millennium BC, especially from the mid-point of the millennium (Cunliffe 2005, e.g. 257; Hill 1995a, 61), although whether this varied regionally is yet to be established. As population rose through the Middle and Late Iron Age the wider landscape began to fill and farms and settlements developed in areas erstwhile less conducive to agriculture such as plateaux and heavier soils. By then, however, iron tools and probably bigger and stronger

livestock enabled colonization (e.g. Haselgrove 1982b; Gaudefroy *et al*. 2001; cf. Knight 2007). These processes may have operated unevenly across the landscape zones of the East Midlands. So, for example, by the Late Iron Age Northamptonshire is characterized as 'filling-up', with continuous harnessed landscapes, based on settled agriculture, especially along valleys in the central southern part of the county. There is a general intensification which presages further change in the Roman era. Nonetheless, local details are likely to provide instructive contexts nuancing the broader picture. Mapping of sites and finds demonstrates varying distributions and densities for the period across the county as elsewhere relating to place, topography and cultural traditions, choices and access (Deegan 2007; Willis 2013a). At present for Northamptonshire there are relatively low heritage asset densities for the valleys of the Cherwell, Welland and Ise, though that may not be an index of the remains that actually occur (Willis 2013a). By contrast, upland areas of Nottinghamshire and Derbyshire were settled and in use by the Bronze Age though knowledge of these areas is comparatively limited and densities appear to be thinner. In such areas, further research is required to establish how far this reflects genuine contrasts in settlement density, or in fact variability in their archaeological visibility (for example, by low levels of surviving material culture, as at Hanging Banks, Wingerworth, Derbyshire (Malone 2022)).

1.4.2 A Thinner Record for the Earlier First Millennium BC

A series of factors which are far from unique to the East Midlands continue to operate against the identification of settlement and other sites of the first half of the first millennium BC (e.g. Kidd 2000; cf. Pryor and French 1985, 306). They include a general lack of archaeological visibility resulting from the inherent nature of such sites and activities undertaken by people at this time. This was an era when the ceremonial monuments and marked burial features that had characterised earlier landscapes were no longer being constructed, and when domestic structural works and other daily undertakings leave limited physical trace. Typically Late Bronze Age and Early Iron Age settlements in the lowlands of the region will have been characterised by wooden buildings leaving a 'light footprint'. These dwellings and foci left, at best, only postholes and/or shallow ditches and gullies, as, in Nottinghamshire, at Station Road, Elton-on-the-Hill (Brudenell 2018) and perhaps Gamston (Knight 1992), or were arranged in open settlements. Yet remains may be very ephemeral. Load-bearing structural timbers may not have been set in the ground but positioned on padstones or simply placed on floor surfaces (potentially using the top of the tree root spread, sawn flat, as a splayed foot), held firm by the carpentry of structures and the weight of the roof; walling will have often not held weight so could comprise insubstantial screening and insulation, achieved by wattle and daub or perhaps turfs, either of which will have left little archaeological trace in normal circumstances.

Where sites were enclosed this was (on the basis of some evidence and supposition) often by means of wooden palisading, resulting in narrow trenches, much less traceable than earthwork ditches and banks which tend to appear from the Middle Iron Age (cf. Willis 1999). One example might be Gamston, Nottinghamshire, where a possible palisade trench was recorded

at the entrance, but was cut by the terminals of the phase 2 enclosure ditch (Knight 1992, 28); no pottery was associated with this feature which was allocated to site phase 2 though it could have represented a significantly earlier iteration). On the uplands roundhouses may have had stone walling and can endure, although again even here survival and identification can be challenging as a result of small sizes, reuse and colonization by vegetation, as on the Peak District Eastern Moors (Barnatt 1999; cf. Ainsworth 2001), while some upland roundhouses did not have stone walls (as at Gardom's Edge (Barnatt *et al*. 2017, chapter 6)). Detection therefore is difficult. Such archaeology is not readily detected by techniques like aerial photography and geophysical survey. Similarly, pottery at such sites is, generally, not likely to have been plentiful and is unlikely to survive long within ploughsoils due to its friable character and generally due to comparatively low firing temperatures; the sizable assemblage from Mam Tor (Coombs and Thompson 1979) is unusual and may be a function of intense episodes of use of the site, yet no pottery came from the evaluation of a potential hillfort at Castle Gresley (also) in Derbyshire (Brown 2019). More sites require examination before the true nature of the incidence is clear. In addition, it is widely accepted that the population at this time was probably lower than in the later Iron Age (e.g. Knight and Howard 2004, 79-113; Knight and Elliott 2008, 180). Population appears to have begun to increase during the Iron Age, yet the characteristics of Late Bronze Age and Early Iron Age settlements that affect their recognition remained unchanged well into the mid-first millennium. These characteristics have confounded the regular identification of settlement sites across much of the region before the time in the Middle Iron Age when ditched enclosure, field systems and penannular gullies defining house or other foci appear with greater regularity, though in some areas they are discernible from the later Bronze Age (Yates 2007). Detection methods are, however, becoming more sophisticated, especially in the domain of geophysics, LiDAR and drone survey, while comprehensive machine trenching for evaluation work and area-stripping in advance of development is now standard and can result in the detection of features likely to be otherwise missed. Now that geophysical survey, evaluation trenching and area strip-map-sample approaches are routine and can be conducted rapidly (cf. Bradley *et al*. 2016), even where no previous archaeological remains are recorded on HERs, the records for this erstwhile less well-documented period are increasing across the region, though they remain limited in number.

1.4.3 The Changing Archaeological Record from the Bronze Age to the Iron Age

The nature of the archaeological record between the Bronze and Iron Ages changes fundamentally. Through the Early and Middle Bronze Age burials and monumental remains form a very prominent proportion of records for the East Midlands, with comparatively few settlements known. This configuration changes in the Iron Age. This reflects the pattern seen broadly elsewhere in Britian and north-west Europe, emergent over the past 40 years or so of research, but implicit beforehand (e.g. Bradley 2007). For the East Midlands the transformation can be illustrated by data from the Northamptonshire HER up till 2013, where, for the Bronze Age, settlement (domestic), agricultural and multiple 'heritage assets' (i.e. records) combined account for just 13% of all entries (Table 3). By contrast the equivalent figure for the Iron Age is 68% though the geologies on

which the 'assets' are mainly located remain the same (Willis 2013a). Dominating the records for the Bronze Age are the religious, ritual or funerary records which mainly comprise burials and barrows, whereas the equivalent records for the Iron Age make up only 3% of the records for that period. Industrial assets number nine for the Iron Age compared to just one for the Bronze Age, where these are the iron smelting sites of the later period (Table 3). Another markedly significant change is the decline in bronze hoarding/deposition after c. 800 BC (Bradley 2019).

[Table 3 Here]

PART II. The Resource by Chronological Periods

2. The Late Bronze Age *c.* 1000 BC – 800 BC

2.1 Settlement Evidence

2.1.1 General Picture

Settlements of the later Bronze Age, as revealed by features, layers and stratified finds, are far from numerous across the East Midland counties (cf. O'Brien 1979, 301; Knight 2007, 193; cf. the original county Assessments for the first millennium BC), broadly reflecting the national picture. Factors to do with the nature of activity at this time were discussed above (Section 1.4.2). A number of sites have come to light only because they were found to underlie settlements of later date, as at Gamston, Nottinghamshire (Knight 1992), and Kirby Muxloe, Leicestershire, where discovery followed fieldwalking which had indicated Iron Age and Roman activity (Cooper 1994). The evidence is often ephemeral, spatially quite specific rather than extensive, and yields very limited cultural and fauna/palaeoenvironmental assemblages that cannot be closely dated. Some sites have produced Post Deverel-Rimbury Plainware which is a very helpful pointer, especially if radiocarbon dates can also be secured (e.g. Stickford, Lincolnshire (Lane and Trimble 2010)). Others, frustratingly, have yielded pottery that can be grouped under the heading of Late Bronze Age - Early Iron Age being highly distinctive typologically - including carinated vessels with extensive finger-tip and incised or grooved geometric ornament - but straddling the divide between the Late Bronze Age and Early Iron Age (Knight 2002, 126–31).

The ephemeral traces may in part be explained by seasonal occupation and indeed the 'visiting' rather than habitation of 'activity areas'. Often pits are the only features identified (see below). Unsurprisingly there are regional variations in the frequency of known sites. Whether the limited current distribution of sites is representative of the actual picture – in terms of sub-regional trends – seems improbable. Later Bronze Age settlements are elusive in Leicestershire and Rutland (Clay 2000), although the number known compares well with other East Midlands counties. Development work in the past two decades has seen more discovery; this has included burnt mounds and middens (cf. Knight and Howard 2004).

In the Winton Road area of Navenby by the A15 in Lincolnshire a number of pits were recorded dated approximately to the Late Bronze Age – Early Iron Age which are somewhat typical of the evidence found across the region (Palmer-Brown and Rylatt 2011). Across an area *c.* 200m by 150m nine pits were discovered through evaluation trenching (hence there is a high probability there were more). Similar fills with small assemblages of mixed material were recovered, some burnt, including animal bone, pottery sherds, ash, fire-cracked stone, hazelnut shells and cereal grains; these contexts could not be well-dated (Knight 2011). There was no evidence for direct burning in the pits. Although remains of a house mouse were recovered the excavators suggested this might not represent a settlement but an occasionally visited area (Palmer-Brown and Rylatt 2011, 13-4).

The identification of earlier first millennium BC cropmark enclosures is not straightforward, as there is a paucity of diagnostic indicators to distinguish them from mid- and later first millennium BC sites. Generally there has been a tendency to ascribe cropmark enclosures to the later Iron Age or perhaps Roman era in preference to the later Bronze Age – earlier Iron Age. This should be borne in mind although there is no information on how frequently mis-dating of enclosure cropmarks occurs.

Since settlement remains and stratified features of the Late Bronze Age are comparatively rare and less well-understood, sites with foci of this period, when threatened by development, should be examined with the aim to maximize information return (e.g. of artefacts and palaeoenvironmental data) with higher sample percentages of features being excavated than may be stipulated for some other eras (Haselgrove *et al.* 2001, 9-14).

2.1.2 Hillforts and Analogous Sites

There are relatively few major defended sites in the region that can be categorized as hillforts or promontory forts and they are sparsely distributed (Lock and Ralston 2017; Ralston 2019, fig. 2.1). Whilst amongst these sites evidence of settlement can be marked, only a small number have yielded traces of later Bronze Age occupation (Table 4). On the whole, these sites are not well characterised or explored, so further indications of Late Bronze Age occupation may be forthcoming and that would not be surprising given that a proportion of hillforts in Britain show later Bronze Age activity, if not necessarily certain origins as hillforts at that time. As Scheduled Monuments, away from areas likely to be subject to development, future investigations will only be justified by projects concerned with preservation and conservation management in the light of visitor access, heritage presentation and associated mitigation. Relevant in these respects is the larger multivallate contour hillfort at Borough Hill, Daventry, Northamptonshire (RCHME 1981, 63–5; Jackson 1991; 1994a; 1997; Chinnock *et al.* 2020, 6), as it is possible it was established during this period following earlier use in the Bronze Age. It has produced Ewart Park metalwork, although pottery from the interior cannot be categorised more closely than Late Bronze Age – Early Iron Age. Recent work at the site was designed to inform access and presentation agendas (Chinnock *et al*. 2020). There is no necessary reason to suppose continuous occupation from the Late Bronze Age through to the Early Iron Age

at the site (pers. comm. Colin Haselgrove).

Elsewhere later Bronze Age occupation within some major defended sites is confirmed or probable at several locations. In Derbyshire the Peak District moorlands contain a range of surviving earthworks relating to settlement and agriculture of this period (see below). The enclosure at Gardom's Edge had been conjectured to be a hillfort-like enclosure but concerted fieldwork suggested alternative interpretations (Barnett *et al*. 2017, 54-8). Important evidence comes from Mam Tor, a comparatively well-known if extraordinary site which has been something of a 'magnetic north' for later Bronze Age studies in the Midlands. Here some two hundred 'house platforms' occur on its exposed and barely accessible summit, indicating a large community, perhaps seasonally present. Several of the house platforms were examined in the 1960s when the earthworks were also sectioned. Pottery and other finds, including a socketed axe, found in association with the house platforms seem to attest occupation during this period, although questions concerning the nature of this activity and the chronology of the ramparts and occupation sequence still remain areas for debate and future investigation (Coombs 1976; Coombs and Thompson 1979; Barnatt 1995; Guilbert 1996; Bevan 2000; Barrett 2000). The occupation at Mam Tor is consistent with that seen elsewhere, for example, on a smaller scale, at Breedon Hill, Leicestershire (cf. below), and perhaps further afield at Eildon Hill North, Borders (Rideout *et al*. 1992) - though a degree of caution is necessary given that dating of sites may be subject to refinement where older evidence becomes superseded. (The ramparts at Mam Tor are yet to be dated).

Occupation of what might be considered marginal locations could have been seasonal and relate to patterns of movement, perhaps tied to annual, especially agricultural cycles. More dramatically, such sites may be places of security in what has been cast as an endemically Hobbesian period of violence and threat (cf. Parker Pearson 1993: Thorpe 2013). Despite concerted fieldwork and scholarship at Mam Tor, this colossus of later prehistory remains enigmatic at a number of levels, and in a manner that is metaphorical for our presently limited understanding of the earlier first millennium BC in the region. The promontory fort at Ball Cross, likewise in the Peak District, has also yielded pottery tentatively identified as Late Bronze Age to Early Iron Age (cf. Coombs and Thompson 1979).

Sites seen as 'ringforts' have been identified in the East Midlands and might be seen as a reduced equivalent to hillforts, enclosing smaller communities, though they may have differed in their roles site to site (see Section 2.1.5).

[Table 4 Here]

2.1.3 Settlements: Derbyshire and Nottinghamshire

At Gardom's Edge, in Derbyshire, fieldwork by the Peak District National Park Authority and Sheffield University investigated possible 'house sites' and field systems

yielding important and varied artefactual material, dating the settlement to the Late Bronze Age and Early Iron Age (Barnatt *et al*. 1995-2000; Barnatt and Smith 2004; Ainsworth and Barnatt 1998; Barnatt *et al*. 2017). C14 dating indicates a start date for the main floruit in the Late Bronze Age (Barnatt 2008; Barnatt *et al*. 2017, table 6.1). Three timber-built roundhouses were excavated, with relatively well-preserved features and associated pottery and other material, spatially recorded. The new understanding of the material culture from Gardom's Edge, particularly the pottery assemblage (Beswick 2017a), has implications for chronology and interpretation of the period in northern Derbyshire, not least in the case of Mam Tor. The site at Gardom's Edge has been suggested to be typical of the surviving prehistoric archaeological remains, including field systems, on the East Moors area. These remains have now been broadly dated from the Bronze Age to the Iron Age via comparison with Gardom's Edge, and as a result of radiocarbon dating of environmental samples from settlements (cf. Barnatt 1999; Bevan 2000; Long *et al.* 1998). They seem to have been occupied over a prolonged period.

Elsewhere in Derbyshire and Nottinghamshire evidence for Late Bronze Age and/or Early Iron Age settlement is sporadic. Apparently open settlements, burnt mounds and a midden at Girton provide quite a range of evidence implying that regular use of 'strip, map and sample' procedures ahead of gravel extraction etc. could reveal significantly more traces for the period (Knight and Howard 2004, 86-90).

In Derbyshire several sub–regions, such as the Coal Measures, lack firm evidence for Late Bronze Age settlement. That such sites may exist is suggested by the limited evidence from Tibshelf (Manning 1995; Barrett 2000). A roundhouse dating to the first half of the millennium has been excavated in the Trent valley at Swarkestone Lowes (Elliott and Knight 1999; Guilbert and Elliott 1999). In Nottinghamshire several very small collections of pottery (including Post Deverel-Rimbury Plainwares) seem to indicate later Bronze Age and/or Early Iron Age settlement; yet this pottery is insufficiently diagnostic to facilitate close dating. A little of this material is associated with features and stratified contexts, although the artefact-yielding features tend to be isolated or loosely grouped, rather than representing clear structural evidence (cf. Pryor and French 1985, 306). These Nottinghamshire finds mainly come from sites with extensive later occupation (cf. Section 2.1.1). Although constituting only 'glimpses', such collections are nevertheless significant as they evidently represent forms of settlement activity. Occurring mainly on the eastern side of the county, they are otherwise dispersed. Cases include Dorket Head, Arnold, on the Mercian Mudstone hills (Turner and Swarbrick 1978; Turner and Turner 1997), Gamston on the Trent gravels (Knight 1992), Epperstone in the valley of a tributary of the Trent (*East Midlands Archaeological Bulletin* 1964, 25; 1966, 35-6; Challis and Harding 1975; pers. comm. Sheila Elsdon), and Red Hill, Ratcliffe-on-Soar, on the Keuper Marl by the Soar–Trent confluence, where postholes and gullies were revealed by the work of Greenfield (Elsdon 1982). The ceramics from the latter site may be Early Iron Age rather than Late Bronze Age. Scratta Wood, on the Magnesian Limestone, also produced pottery that is understood to be Late Bronze Age/Early Iron Age (Bishop 2000).

Turning to the Don Valley area Cockrell's thesis mapping Bronze Age monuments (Cockrell 2016, fig. 5.7) recorded more on the upland fringe of the southern Pennines and around the Don Gorge, but the distribution of Bronze Age find-spots of material culture (2016, fig, 5.8) shows a much more even distribution (albeit less on the Coal Measures and Sandstone, echoing the general archaeological record for prehistory). His conclusion was that all areas were in use. The issue for the period under scrutiny here is that settlement and pottery become much more elusive for the later Bronze Age.

2.1.4 Settlements: Leicestershire and Rutland

A comparatively good sample of later Bronze Age – earlier Iron Age settlement sites with buildings has been identified via excavations in Leicestershire and Rutland. Later Bronze Age settlement is recorded at a wide range of sites including Bardon Hill, Barkby Thorpe, Willow Farm (Castle Donington), Eye Kettleby (Melton Mowbray; see Section 2.3), Glenfield, Glen Parva, Kirby Muxloe and apparently Ridlington (Clay 2000; Cooper 1994; Beamish 1997a; 1997b; 2002; Finn 1998; Liddle 1982, 19). Excavated evidence from the site at Willow Farm, Castle Donington, on the alluvium/gravels of the Trent flood plain, had provisionally been ascribed a later Bronze Age – earlier Iron Age date (Coward and Ripper 1998; 1999; Willis 2006) but is now dated to the later Bronze Age (Ripper *et al*. 2017); here at least one post-hole defined timber roundhouse (5.5 m in diameter with an entrance defined by posts) was identified together with numerous post holes that may indicate other structures, together with pits. A nearby pit alignment had sterile fills and may be Iron Age (Ripper *et al*. 2017, 24). At Ridlington, in Rutland, settlement is attested by a double-ring roundhouse (Beamish 1997a). Contemporary occupation is presumed at the hilltop site of Budden Wood, and possibly Beacon Hill, Woodhouse Eaves (Liddle 1982). Pottery scatters had indicated a further 15–20 sites that may be of this date (Liddle 1982).

2.1.5 Settlements: Northamptonshire and Lincolnshire

In Northamptonshire there are again few sites that can be attributed firmly to the Late Bronze Age. The ringwork at Thrapston is an exception to this (see below this Section). Features excavated at Harlestone Quarry, Northampton, include a shallow ditch system perhaps with an enclosure, that was undated but thought likely to be Late Bronze Age, with pits and four-poster features (see Sections 2.2 and 4.3 on these features) within the system which were of Late Bronze Age date; two pits yielded loom weights and it is suggested there was probably occupation at this site at that time (Clarke *et al*. 2017). Another site in the vicinity of Northampton of this period is the settlement at Sandy Lane, Northampton (Garland *et al*. 2019). Here two likely roundhouses recognized from post settings lay adjacent and unenclosed, together with associated pits (Garland *et al*. 2019). A series of sites are, here too, pigeon-holed as Late Bronze Age–Early Iron Age. Flag Fen/Fengate, in north-west Cambridgeshire (Pryor 1974; 1978; 1980; 1984; 2001), was evidently a (?major) focal point at this time and, with others like it, may have been significant in the politics and culture of the Nene valley and its hinterlands.

Turning to Lincolnshire, in the mid-1970s May could only state that there was an absence within the historic county of firmly identified settlement sites of the Late Bronze Age (May 1976a, 109). Several important settlements of the transitional period are now known from the valleys and terraces approaching The Fens. Excavations to the south-east of Billingborough (1975-8), produced a range of features (Section 2.2), with evident longevity of the activity from the second half of the second millennium BC; by the Late-Bronze Age –Early Iron Age salt-working was being undertaken with possible structural evidence (Chowne *et al*. 2001, 7-16 and 89). Close dating of these activities was elusive though the site yielded a ceramic sequence showing a progression from Deverel-Rimbury to Post Deverel-Rimbury styles, albeit with some qualification (Knight 2002; Chowne *et al*. 2001 31-56). Elsewhere, in some cases, preservation has been found to be particularly good. In the Lower Welland valley work in advance of gravel extraction at Deeping St James (Lincolnshire) revealed a well-preserved settlement of Late Bronze Age – Early Iron Age date sealed by alluvium (Mouraille *et al*. 1996). The site included the following, but whether these features are specifically Late Bronze Age is not apparent from information available: an enclosure with double boundary ditch, surrounding post-built roundhouses, four-poster structures and rectangular buildings, with extant floors, hearths and associated pottery and faunal assemblages; earlier work had revealed a likely eaves-drip gully from a roundhouse (Mouraille *et al*. 1996); evidence for a field system was encountered, thought to relate to stock management with pastoral agriculture likely to have been important given the environmental setting (Membery 2002, 2). In Bourne Fen, Lincolnshire, later Bronze Age – Early Iron Age pottery was found together with evidence of occupation including a hearth and fired daub (Lincolnshire HER). Further north in Lincolnshire identification of Late Bronze Age settlement has been very limited. This is emphasized by the near total absence of evidence for this period through the course of the Covenham to Boston pipeline (Bush forthcoming). Only two locations produced evidence for this period: at Covenham St Bartholomew (site A2), on the Marsh, a pit group was encountered with evidence of crop processing dated to the Late Bronze Age, or possibly Early Iron Age, while at Hundleby (site N2) on the south–east of the Wolds, a pit with an assemblage indicative of settlement/occupation was excavated (Bush forthcoming, chapter 2); a complete conical spindlewhorl of later Bronze Age type was recovered. By contrast a rectangular enclosure complex possibly of this date was located on the Lincolnshire Wolds at Kirmond le Mire; sherds attributed to the Deverel-Rimbury and Post Deverel-Rimbury ceramic traditions were found, suggesting activity related to the time of transition, although it may pre-date the first millennium BC (Field and Knight 1992). In North Lincolnshire a small settlement site of Late Bronze Age date, with circular structures and Post Deverel-Rimbury Plainware pottery, was documented at Hibaldstow (Allen and Rylatt 2001; Allen and Knight 2001).

At Washingborough, by the Witham, downstream from Lincoln, work undertaken 2004-5 (Allen 2009), combined with earlier discoveries (Coles *et al*. 1979; Elsdon 1994a), produced a series of significant finds dated to the later Bronze Age (1100-800 BC). Here trenches revealed made ground and surfacing by the riverside, with a range of activities, perhaps seasonal, attested, including crop processing and animal husbandry, together with

metalworking, and a heated tank possibly for brewing. The inference is that the river was used for transport, communication and trading (Allen 2009). The finds of dugout canoes (logboats) from the Witham may bear witness to such traffic. Extensive use of this river margin elsewhere during the first half of the millennium is likely, though the dynamic nature of the river through the first millennium BC should be noted meaning that sites may have been lost, disturbed, or buried by moving channels, erosion and deposition (Rackham 2009; Chowne 2015).

A few cases of smaller earthwork enclosed/defended settlement sites, often termed 'ringforts' are known in the region. These are similar to excavated sites documented elsewhere in eastern England, specifically at Springfield Lyons and Mucking (North Ring) in Essex and at Thwing, Yorkshire, during its final, Late Bronze Age phase (cf. Parker Pearson 1993; see Hull 2001 for references). In Northamptonshire, however, a partially excavated evident 'ringfort' at Thrapston yielded a Post Deverel-Rimbury Plainware assemblage and a single radiocarbon date centred on the eighth century BC (Hull 1998; 2001). The site was defined by a single ditch *c.* 1.8 m deep and a likely interior bank and measured *c.* 110-120 m in diameter with likely interior features. A number of evident placed deposits were encountered (see Section 10.2). Other possible or likely ringforts may exist, notably at Thenford in western Northamptonshire (RCHME 1982, 143-4), or amongst the modest number of uninvestigated smaller earthwork-enclosed sites in Leicestershire and Lincolnshire, such as Yarborough Camp, or on the Mercia Mudstone uplands of Nottinghamshire (see Table 4). The possibility remains that such sites had a ceremonial dimension and indeed some evidence from Thrapston points to feasting and/or high status consumption.

2.2 Settlement Morphology

The sample of settlement sites known for this period is very limited and diverse, meaning that any attempt at the distillation of trends can only be provisional. On present evidence comparatively little can be said regarding the arrangement and organization of settlements, and the capture of such information via excavation remains a priority. It is likely that many Late Bronze Age sites were either unenclosed, or enclosed only by palisading. Several examined settlements within the Late Bronze Age–Early Iron Age envelope were unenclosed, as on the Eastern Moors of the Peak District (pers. comm. Bill Bevan). Another unenclosed settlement within this chronological span is Wilby Way, near Wellingborough, Northamptonshire, where early development sees four roundhouses adjacent to an enclosure with no buildings within and interpreted as a stock enclosure (Enright and Thomas 1998, 32; 1999). The nature of the site at Swarkestone Lowes (Derbyshire) is uncertain as no features contemporary with the roundhouse were encountered (Elliott and Knight 1999; Guilbert and Elliott 1999); it is entirely possible that this Late Bronze Age – Early Iron Age settlement (if such it was) was likewise unenclosed. Provisional assessment of the extensive settlement complex at Crick, Northamptonshire, had suggested occupation from this period (Hughes 1998; cf. Willis 2006) but detailed study demonstrated that the occupation lies entirely within the Iron Age (Hughes and Woodward 2015).

As noted, ditched enclosures of the later Bronze Age are known at Billingborough and Kirmond le Mire (Section 2.1.5), as well as elsewhere, as in The Fens (cf. Pryor 1996). However, the spatial distribution of enclosed settlements during this period remains a matter for further research. In addition, better evidence is required to clarify how frequently such features are settlement boundaries or concerned with the management of herds, or served other purposes, such as communal meeting areas. Phase 1 at Billingborough (Middle to Late Bronze Age) is thought to represent the remains of a settlement, defined by a U-shaped enclosure containing four post structures, pits, an occupation layer and a fence (Chowne *et al.* 2001). Evidence for buildings was absent, probably due to erosion. (Four post structures are not particularly common in most parts the East Midlands compared to Wessex and are best represented at sites in Northamptonshire; they are most often taken to represent granaries but may have had other functions).

2.3 Buildings and Structures

Some variety in building types occurs in the region. A rectangular building, of posthole and beam-slot construction, is recorded at Eye Kettleby, Leicestershire (Finn 1998; 2011), where Post Deverel-Rimbury Plainwares (of approximate eleventh- to ninth-century BC date) were associated. Rectangular buildings are also reported at Deeping St James while circular structures occur at several sites in the south of the region, including Kirby Muxloe, Glen Parva and Deeping St James (Cooper 1994; Liddle 1982, 19; Trimble 1996; Membery 2002; Lincolnshire HER). Double-ring circular structures presumed to represent roundhouses occur at several sites, specifically Willow Farm, Castle Donington, Leicestershire, Ridlington, Rutland (Beamish 1997a) and Swarkestone Lowes, Derbyshire (Guilbert and Elliott 1999), where the structure dates to the Late Bronze Age or Early Iron Age. The posthole ring of the latter, representing its inner roof-supporting timbers, is *c.* 7 m in diameter. In the north of the region work at Gardom's Edge, Derbyshire, revealed three circular buildings with substantive stakehole walls and posthole doorways with no stone footings recorded, and it is apparent that structural evidence in this landscape can have no visible surface indicators (Barnatt *et al.* 1995–2000; Barnatt 2008, 52; Barnatt *et al*. 2017). The three roundhouses faced east and south-east, measuring 5.25, 6.25 and 10 m in diameter. Mapping of the spatial incidence of finds in and around the houses at Gardom's Edge makes a significant contribution to the value of that report (Barnatt *et al*. 2017, chapter 6). At Sandy Lane, Northampton, the post settings defining two roundhouses were approximately 8.5 and 6.8 m in diameter, though the report authors note that these timbers may have belonged to load bearing inner rings and not represent the outer wall, so the buildings may have been bigger (Garland *et al*. 2019). Both structures had pits within containing hearth type debris and the pit in the smaller of the two roundhouses produced a radiocarbon date of 1194-998 cal. BC; it may have faced south-east. Loom weights were also associated with these structures (Garland *et al*. 2019). With a gap separating the rings of just 1.5 m it is possible that they were not contemporary. At Gamston a post-built structure, perhaps of semicircular type, and possibly relating to Late Bronze Age – Early Iron Age activity, was truncated by a Middle Iron Age enclosure ditch (Knight 1992, 25). 'D' shaped structures are a known later

prehistoric type, and are often thought to represent working areas. A pair of L-shaped gullies at Billingborough possibly open to the west, with an apparent entrance on the east may represent the partial survival of structural footings or perhaps screening associated with salt-winning (Chowne *et al*. 2001, 16, fig. 8).

Figure. The distribution of Post Deverel-Rimbury … Edge 'House 1'

2.4 Environment

As is well-known, the early part of the first millennium BC was a period of comparatively poor climate, with increased ground wetness and lower temperatures. More recent work has refined the trend and it is now recognized to have had its greatest effect somewhat later than previously thought, falling within the earlier first millennium BC. Hence Waddington and Passmore, referencing specific studies (Van Geel 1998a; 1998b; Yeloff *et al*. 2007) emphasize the 'profound climatic downturn to very wet and cold conditions between *c*. 900 and c. 500 cal. BC, the latter sometimes being referred to as the 2.7 ka event' (Waddington and Passmore 2016, 187). As they point out 'more localised climatic conditions will have no doubt also affected different regions and upland massifs across the British Isles throughout this period but within the context of [this] broad trend' (*ibid*.). Flooding and inundation occurred, for instance, in The Fens and Fen margins (Pryor 1984; Pryor and French 1985, 305–6). Nonetheless, on the East Moors of the Peak District pockets of arable cultivation associated with field systems and settlement appear to have continued in use from the second into the first millennium BC, with pastoral activity also likely (Long *et al*. 1998). At Gardom's Edge, for instance, the evidence from 'Houses 2 and 3' indicates that occupation did not end with the start of the new millennium, and it is emphasized that there was no wholescale upland abandonment in the period to c. 600 BC (Barnatt *et al*. 2017, 125). This begins to 'correct' earlier interpretations suggesting the abandonment of upland areas in Britain around the end of the second millennium BC (cf. Burgess 1985).

Cockrell's thesis looking at the Don and its catchment (Cockrell 2016) has collated a range of evidence for the environment of that area during this era drawing on various sources. On the Hatfield Moors east of Doncaster pollen data (dated 1540-1280 cal. BC) was interpreted as indicating that on drier areas livestock grazing was taking place before the first millennium BC (Smith 2002, 32). To the north Cockrell noted that on Thorne Moor (on the North Lincolnshire - South Yorkshire border) pollen from plant taxa indicated areas of open water, open woodland and pastoral farming; here lower amounts of tree pollen combined with the presence of hazel, grasses and sedges (cf. Buckland 1979; Smith 2002, 36); sampling included the vicinity of a trackway dated to the Late Bronze Age (Cockrell 2016, 135). Cereal cultivation perhaps continued on higher land in the area at this time. Oak pollen at the trackway side was found to reduce markedly and insect fauna reflecting wet environs increase in the context of sustained warm temperatures (cf. Buckland 1979, 47, 136; Buckland and Smith 2003, 42) associated with a date of 1450-950 cal. BC (Chapman and Gearey 2013, 29, based on Birmingham 358: 980+/- 110 BC (Buckland 1979, 16)), that is

just prior to the climatic downturn. Cockrell speculated that the increase in wet environs may be related to local factors. At Leash Fen (in north-east Derbyshire, southern Pennines) the evidence suggests grazing and continuing clearance in the earlier Bronze Age from a sample dated *c*. 1790 BC (Cockrell 2016, 135; Heath 2003, 35); clearance seems to have peaked *c*. 1500 BC with evidence of some arable cultivation until the Late Bronze Age, but then declines with the expansion of peat (Heath 2003, 35 and 40). Thereafter climate deterioration has been suggested to account for a decline in cereal production in upland areas (Long *et al*. 1998, 517-8; Heath 2003, 38).

Later, at Thorne Moor, there was an increase in grassy environments and likely continuity in the intensity of use (dated *c*. 870-540 cal. BC) although by that time the levels included more raised mire (cf. Smith 2002, 36). Broadly speaking, a pattern of pastoral activity with some arable cultivation endured (Smith 2002, 49; Cockrell 2016, 140). To the south-east, around the Isle of Axholme, metalwork finds suggested to Cockrell significant activity (Cockrell 2016, 33). Here a wetter landscape with bogs and less trees will have endured through the first millennium BC; accordingly, this environment will have been less suitable to cattle (cf. Cockrell 2016, 316-7).

Elsewhere, Clay had highlighted the fact that the palynological information garnered from the Leicestershire and Rutland sites of Croft (Smith *et al*. 2005), Hemington, Kirby Muxloe and Oakham (Greig *et al*. 1999) identify a pattern of increasing clearance from the later Bronze Age and a predominance of grassland (Clay 2000). Instances of erosion dated to or attributed to the early and mid-first millennium BC are seen as a consequence of concerted clearance and farming, though Knight has suggested this becomes marked by the later first millennium BC in the Trent valley (Knight 2007). In Lincolnshire, environmental change in the Witham Valley and the Lincolnshire Fens has in part been characterized for later prehistory (Hayes and Lane 1992, e.g. figs 7-10; Rackham *et al*. 2004; Chowne 2015). Instructive pollen, wood, insect and molluscan samples are published from Washingborough on the Witham dating to the Late Bronze Age (Allen 2009, chapter 5, see specialist reports). With reference to Washingborough we may note that bones of the house mouse were recovered from two contexts at Washingborough, these rodents probably feeding on cereal grain, and representing the earliest records for the species in Britain (Rackham 2009, 97-9, 140, table 5.10); beaver bones and beaver gnawed wood was also recovered (Wood 2009; Taylor 2009a). Beaver was also represented in the faunal assemblage from the 1981 work at nearby Fiskerton, probably later in date (Field and Parker Pearson 2003, 128), and was likewise recovered from Welland Bank Quarry (cf. Section 2.1.5; Rackham 1996). Sampling for pollen was conducted at the latter site but assessment suggested the method had low potential given the nature of survival (Mouraille *et al*. 1996). Pollen sampling was also undertaken at Willow Farm, Castle Donington, with results reported for the Bronze Age (Ripper *et al*. 2017).

Turning to the Trent valley, pollen samples, insect remains and plant macrofossils show areas of the valley to have been cleared of woodland for cereals by the Late Bronze Age - Early Iron Age and in agricultural use, though woodland pasture will have been important during this period when an emphasis on livestock raising is suggested (Knight and Howard

2004, 83; Monckton 2006, 269; Knight 2007, 192-3). In the Lower Trent valley, coring and palaeobotanical remains from north of Girton and Waycar Pasture show arable cultivation underway in the second millennium BC enduring into the Roman era though livestock rearing was evident from indicators such as dung beetles (Knight and Howard 2004, 84). Following the period of climatic deterioration, as the first half of the millennium progresses, there occurs further clearance of the Middle and Lower Trent valley and increased attention to cereal cultivation (cf. Knight 2007).

2.5 Material Culture

2.5.1 Metalworking and Metalwork

One of the main sources of knowledge for the later Bronze Age in the region remains metalwork. This is especially significant for areas where documented settlement and other evidence is meagre. The regional collection is an eclectic ensemble, deriving from piecemeal discoveries and reporting, supplemented more recently by PAS records, as in the case of a fine Ewart Park type sword recovered by a digger operator during gravel extraction at Church Wilne, Derbyshire (Hughes 1999, 6, fig. 18). Comparatively few items derive from controlled fieldwork at settlement sites or elsewhere. A number of later Bronze Age hoards are known in Leicestershire and Rutland, including the important groups from Beacon Hill, Cottesmore and Welby (cf. Liddle 1982, 17, fig. 8; Boughton and Scott 2014 – for the Welby hoard). In Northamptonshire a significant Late Bronze Age hoard was recovered at Ecton (Kidd 2000). The Nettleham hoard from near Lincoln is also of regional importance (cf. May 1976a, 103), as are the Hallstatt Gündlingen type swords found together near Tattershall in the east of the county (Cowen 1967, nos 189-90). The corpus covering Lincolnshire published by Davey (1973) includes much later Bronze Age metalwork from the historic county, while May's (1976a) volume on Lincolnshire continues to provide a valuable summary. May included a distribution map of Late Bronze Age bronze objects (*ibid*., fig. 63), which shows clearly areas of numerous finds (e.g. the Middle Witham valley and its immediate hinterland) and those for which there is an absence (e.g. the Middle and Outmarsh areas bordering the coast, The Fens, and the middle and northern Wolds). More recently the Isle of Axholme has been noted as a cluster point (Cockrell 2016, 33) though most of the finds are older records. Cockrell noted that the distribution of later Bronze Age loped and socketed axe heads and spearheads must indicate the importance of the Magnesian Limestone and adjacent wetlands at this time (Cockrell 2016, 316-7).

Turning to production, evidence for Late Bronze Age copper alloy metalworking was recovered at Washingborough by the Witham in the form of two crucible rims and three mould fragments for multiple identical pin heads (Northover and Bridgford 2009). A fragment from a clay mould for a chisel or socketed axe was found in one of the pits in the Winton Road area at Navenby (cf. Section 2.1.1) associated with Late Bronze Age - Early Iron Age pottery (Palmer-Brown and Rylatt 2011, 14; Bayley 2011). At Girton Quarry, Clifton Hill Fields, Nottinghamshire, fieldwork in 2008-9 located a solitary pit dating to the Late Bronze Age (Poole *et al*. 2018). This contained 98 fragments from bipartite refractory

clay moulds for the manufacture of peg-socketed spearheads, as well as, perhaps, leaf shaped swords of Wilburton type (c. 1140-1020 BC); the pit also yielded 62 sherds of Post Deverel-Rimbury Plainware making this an important regional association of this class of pottery and Late Bronze Age metalworking waste (Percival 2018). In the vicinity of Fiskerton and Washingborough on the Witham a series of Late Bronze Age finds are recorded, both single finds and hoards, including a hoard of four or five socketed axes (Washingborough 1 hoard) plus a mould for a socketed axe (Field and Parker Pearson 2003, 155).

Riverine contexts for such metalwork are frequent, echoing patterns observed across northern Europe (Bradley 1990). Most of the 19 instances of Late Bronze Age metalwork on the Nottinghamshire HER *c.* 2003 were associated with the River Trent (see now Pearce and Davis forthcoming). From this river have come Hallstatt swords, which used to be seen as comprising both local and imported items (Cowen 1967, nos 191-3; MacCormick 1966, 36, fig. 7.7–8). More recent study emphasises significant insular development of the Ha C sword types in Britain (e.g. Milcent 2017), hence the corpus from the Trent may now be seen as more likely to represent swords of indigenous manufacture (only later did types circulate on both sides of Channel (pers. comm. Colin Haselgrove)). West of Scunthorpe a hoard of Late Bronze Age socketed axes was found buried in the bed of the Trent when Keady Bridge was constructed in the early 20th century. Finds are also known from the Witham, including an extraordinary antennae-hilted sword (Hawkes 1946, 12, pl. 3a–b; Davey 1973, fig. 20 no. 199; May 1976a). Chowne has noted the comparatively high number of later Bronze Age metal finds from the peat fen between Lincoln and the Slea (Chowne 1980). He eschewed an interpretation of these items as part of a ritual phenomenon, suggesting instead that since these items were particularly associated with the edge of the fen, where the peat layer was thinner, they derived from settlements subsequently buried by peat growth.

Elsewhere, Late Bronze Age metalwork has been found at sites with domestic occupation. These include the ridge-top settlement at Glenfield, Leicester, and Gardom's Edge, Derbyshire. In Northamptonshire, Ewart Park metalwork was found in the interior of Borough Hill, Daventry (RCHME 1981, 63–5; Jackson 1994a; 1997). A significant find comprises the fragments of a socketed axehead from Mam Tor, typologically Late Bronze Age, but manufactured in lead (Guilbert 1996), raising the possibility that lead was being extracted in the Peak District during later prehistory (cf. Section 3.5.1 regarding socketed axeheads). Waddington and Montgomery have pointed up the possibility of lead and copper extraction from White Peak ores in later prehistory (Waddington and Montgomery 2017, 55).

Assessing the evidence from Lincolnshire, May pointed out that the frequency with which bronzes of Late Bronze Age date have come to light indicates that bronze must have been plentiful during this period (May 1976a, 103). A case could be made for this being so for the whole of the East Midlands. Significantly, May deduced that this indicated 'a well-organised and secure supply of metal, since there were no local sources either of copper or tin' (*ibid.*). In sum, the region has yielded a large number of Late Bronze Age metal artefacts, some of which are magnificent items by any standard. Certain types of tool, martial

equipment and ornamental pieces predominate, as they do elsewhere in Britain. These bronzes indicate the wealth of the region, and its cultural and economic articulation with southern and western Britain and the northern Continent at this time. Some at least of these pieces were presumably fashioned locally and constitute an index of technological awareness within Late Bronze Age communities in the region. The nature of many of these pieces and of their find-spots suggests attention to symbolism and ritual. They remain important items both for materials analysis research and also for considering society and social practice.

2.5.2 Pottery

Assemblages and collections of Late Bronze Age pottery are not numerous, nor are they well characterised. Key references are Knight (2002) and the *Gazetteer of Later Prehistoric Pottery Collections (First Millennium BC)* accessible through the Archaeological Data Service (Earl *et al*. 2007). As a general point on the study and reporting of first millennium BC pottery David Knight (pers. comm.) observes that there is much scope for improved standardisation in the employment of terminology and ceramic phases across the region building on existing reference sources (Knight 2002).

Spanning the very end of the second millennium BC until *c*. 800 BC are the Post Deverel-Rimbury Plainware styles, which are succeeded by (overlapping) Late Bronze Age – Early Iron Age styles (Barrett 1980; Cunliffe 2005, 88-90; Knight 2002, 123-6). Post Deverel-Rimbury Plainware is known from a select number of sites particularly from the Peak District and the Fen hinterland, including Ball Cross, Derbyshire (Stanley 1954) and Mam Tor (Barrett 1979; superbly drawn by Jenny Coombs; see Appendix), Billingborough (Chowne *et al*. 2001), Deeping St James and Hagnaby near Stickford (Knight 2002). Large Plainware assemblages from Langtoft and Welland Bank in south Lincolnshire (Pryor 1998a; pers. comm. David Knight) have the potential to be dated via radiocarbon determinations on associated organics. Elsewhere, May published details of pottery finds from the period recovered at Brigg and Washingborough in the northern and central areas of the historic county (May 1976a, 109-13; cf. Coles *et al*. 1979; Elsdon 1994a). The pottery items from the latter site can now be seen more readily as Late Bronze Age given the evidence from the site that was recovered in 2004-5; overall this is a significant pottery assemblage for the region which has received comprehensive attention (Allen 2009, 41-57). Further north again in Lincolnshire pottery of the period with everted rims and finger impressions has been published from Barnetby (Didsbury and Steedman 1992). In Leicestershire comparatively little Late Bronze Age pottery is known or reported. Some 776 sherds of Post Deverel-Rimbury Plainwares are mentioned in a note on the site at Willow Farm, Castle Donington, and four vessels are illustrated, but no details are published (Marsden 2017, fig. 23). A reassessment of the pottery from Mam Tor is required in the light of the finds from Gardom's Edge (Barrett 2000; Bevan 2000; Beswick 2017a). Thin-sectioning of pottery samples from the 1960s fieldwork at the site provided new insights with regard to the typology and other aspects of this important collection (Guilbert and Vince 1996), further demonstrating the research potential of archived materials.

At Tibshelf, in north-east Derbyshire, adjacent to the M1, a Late Bronze Age upland enclosure on Coal Measures was excavated (Manning 1995). Pottery ascribed to the Late Bronze Age by the excavators (135 sherds from 2 vessels) has been in need of further study to verify the ascription (cf. Barrett 2000, 4). Elsewhere in the north of the East Midlands region there is a lack of confirmed pottery of the Late Bronze Age in the Don Valley area (Cockrell 2016, 312), reflecting the lack of settlement sites for this period.

Finally, in the case Northamptonshire, the ringwork at Thrapston produced a significant if small assemblage for this period (cf. Section 2.1.5) with another small assemblage of pottery dated to the Late Bronze Age – Early Iron Age forthcoming from Harlestone Quarry (Clarke *et al*. 2017, fig. 18); a small and generally undiagnostic pottery group for this era is, however, reported from Sandy Lane, Northampton (Garland *et al*. 2019).

2.5.3 Other Artefact Categories

The Late Bronze Age riverside site at Washingborough has yielded a range of notable finds. In 1973 a cheek piece from a horse bridle fashioned from antler and showing use-wear was recovered (May 1976a, 111, fig. 61.6; Coles *et al*. 1979, fig. 4). Excavations in 2004-5 produced a range of bone implements and a large part of a finely made wooden bowl showing from a full profile that the form mirrored that seen with contemporary pottery styles (Taylor 2009b). Present too were shale items including a ring and bracelet with the latter repaired with lead (Allen 2009, fig. 4.15); the shale source is potentially Swine Sty in Derbyshire. 'Shale' or more accurately cannel coal was evidently being worked in the Late Bronze Age at the settlements at Gardom's Edge and Swine Sty to fashion large jet-like rings for bodily adornment (cf. Beswick 1994; 2017b). Also from Gardom's Edge came four annular blue (turquoise) glass beads for which a Late Bronze Age or Early Iron Age date is ascribed on typological grounds, these items or the glass they were made from originating from a source in the Near East (Jackson 2017). At the extraordinarily well-preserved Late Bronze Age site at Must Farm, Cambridgeshire (just to the south of the East Midlands region), over 100 beads were recovered, including many glass beads, plus amber, glass, stone and jet beads from a necklace, suggesting beads may have been quite common in ordinary domestic contexts at that time (Knight *et al*. 2019; www.mustfarm.com). An amber bead was also recovered at Washingborough, the source of the amber being the Baltic or possibly the eastern coast of Britain (Allen 2009). Illustrations of the artefacts in the 2009 Washingborough monograph (Allen 2009) are of particular high quality, being mainly the work of the late Dave Hopkins.

Amongst the bone tools from Washingborough was a polished weaving batten indicative of textile manufacture at or in the hinterland of the site (Allen 2009). Textile manufacturing was also attested at Harlestone Quarry, Northampton, where a group of loom weights came from a pit dated to the Late Bronze Age by a radiocarbon determination, with a stone spindle whorl also found at the site (Clarke *et al*. 2017). Loom weights were also recovered at the

Late Bronze Age settlement at Sandy Lane, Northampton (Garland *et al*. 2019).

On the Fen edge in Lincolnshire, at Hagnaby Lock, work in advance of the Covenham to Boston Pipeline (site Y1) recovered a large assemblage of struck flint (comprising 274 items) indicative of flint working, mostly from midden deposits but also ditches (Bush forthcoming; Bishop forthcoming). Along with pottery, burnt stone and briquetage, the assemblage dates to the Late Bronze Age and was thought probably to be associated with more extensive deposits (cf. Lane and Trimble 2010). Bishop suggests that the total number of flints at this site 'could amount to many thousands of pieces' (Bishop forthcoming). A series of dumps of midden or possibly 'burnt mound' debris may parallel the 'seeded' middens (that is to say middens wherein cultural material appears to have been intentionally included or added) of the Late Bronze Age-Early Iron Age that are known in southern Britain (Needham and Spence 1997; Waddington 2009; Waddington and Sharples 2011; see also Knight 2007, 196, for Trent valley parallels). This assemblage is a reminder that flint implements were still being used and created, often in an ad hoc manner, through the first millennium BC.

2.6 Agriculture

(Monckton's synthesis for the original Resource Assessment remains a valid and useful summary for this period (Monckton 2006)). Yates' study of field systems, settlement, population, and 'political economy' identified processes of change in the Late Bronze Age in southern England (Yates 2007), with field and settlement abandonment and perhaps population decline arising from various pressures and dynamics and due in part to climatic changes (cf. Section 2.4). His findings and interpretations have not been widely addressed in the East Midlands in recent work and here the impacts may not have been so marked, but this requires more investigation (cf. Section 2.4).

A few later Bronze Age sites have yielded evidence for cereals. Spelt being noted on drier sites, there having been an increase in the identification of such remains in recent years. Elsewhere spelt is not so apparent (cf. Monkton 2006, 269). Deeping St James, Lincolnshire, yielded evidence of barley, bread wheat, and emmer cultivation during the Late Bronze Age (pers. comm. Angela Monckton), with flax and hazelnut shell also represented. Emmer and nut shell were also recovered at the Lincolnshire Fen-edge site at Hagnaby Lock near Stickford (Murphy 2010). On the south-eastern Wolds recent work at Hundleby (cf. Section 2.1.5) sampled a pit ascribed to the Late Bronze Age which contained some cereal grains and hazelnut shell plus a hulled wheat glume base (Fosberry forthcoming). At Covenham St Bartholomew on the Lincolnshire Marsh (cf. Section 2.1.5) a Late Bronze Age pit group yielded hulled wheat chaff and grains with spelt present and a minor emmer component, and in the round thought likely to derive from the final stages of cereal processing (Fosberry forthcoming). Emmer, barley and nut shell were present at Eye Kettleby, Leicestershire (Monckton 2011). Querns have been recovered at a number of sites or contexts believed to date to this period, like Tibshelf, where a saddle quern is reported (Manning 1995) and Gardom's Edge (Barnatt *et al*. 2017).

At Rectory Farm, West Deeping, near the river Welland, southern Lincolnshire, an

extensive co-axial field system was established in the Late Bronze Age with a groups of associated pits yielding much pottery of this period (Savage *et al*. forthcoming). In the valleys leading to The Fens, livestock, particularly cattle, appear to have become increasingly important (Pryor and French 1985, 306). Excavations at Washingborough, Lincolnshire, between 2004-5, at a site dated to the Late Bronze Age, showed cattle dominated the faunal assemblage, the interpretation being that they were kept principally for dairy products, with pigs important for meat rather than sheep (Rackham 2009). Earlier finds from the area likewise showed cattle to comprise half of the faunal assemblage, the remainder consisting of a mixture of domestic and wild animals, birds and fish (Coles *et al*. 1979). Regarding the fish bones from the 2004-5 work Rackham concluded these were likely to be mainly the consequence of natural deposition at this riverside location, with some possibilities of food use in specific contexts (Rackham 2009, 141).

In a cogent article Pryor (1996; cf. 1998b) outlined a case for identifying large-scale sheep raising on the western Fen margin during the later Bronze Age, with many of the enclosures and ditches of this landscape seen as relating to flock management. He suggests the regime did not continue much into the first millennium BC, due to flooding of summer grazing areas with sea level change and climatic deterioration. Salt 'winning' at this time may in part have been directed towards the provision of licks for sheep and other animals, providing them with vital dietary supplements (*ibid*., 322).

Mixed agricultural regimes were evidently practised at this time in favourable pockets on the East Moors, Derbyshire (cf. Long *et al*. 1998). Extensive field systems have been recognised across the moors during the Bronze Age, and it seems that some of these at least continued through the first millennium BC.

3. The Earlier Iron Age *c*. 800 BC– 450 BC

3.1 Introduction

Difficulties of evidence and methods (Section 1.3) mean that chronological resolution around this period is often such that it is impossible to assign archaeological remains either to the Late Bronze Age or Early Iron Age in a clear manner. The shift from the use of bronze to iron tools, and the other changes associated with the emergence of the Iron Age, were in any case part of an unfolding process of transition. Change did not occur at a fixed moment in time but was a matter of transformation and adaptation made over several generations. In this section, therefore, the evidence lying within the approximate parameters of the transition and the Early Iron Age is grouped together. Sites, activity areas and finds of this period are infrequent and often elude remote sensing and survey methods; where found it is frequently as a precursor to a firmer footprint of evidence during the Middle Iron Age (cf. Willis 1997; Clay 2000; Kidd 2000; Beamish and Shore 2008, 63-4). On the basis of a range of changes, recognised as having taken place in the century between 850-750 BC (e.g. Needham 2007), the date of *c*. 800 BC is taken here for the start of this transition.

As with the Late Bronze Age settlement remains and stratified features of Late Bronze Age/Early Iron Age ascription are comparatively rare and not well-understood. All sites with foci of this period threatened by development should be examined with the aim to maximize information return, with perhaps higher percentages of features excavated than may be stipulated for some other eras.

3.2 Settlement Evidence

The archaeological visibility of settlements during the earlier Iron Age is at best only marginally higher during the earlier Iron Age than during the Late Bronze Age, largely because the character of sites is not markedly different. Defended settlements of the period might be thought to be more readily identifiable, but there has been only limited investigation of potential sites, with a concomitant lack of diagnostic material.

As noted above, a number of sites have produced modest evidence for occupation during the Late Bronze Age and/or the Early Iron Age. In the Trent valley these include the sites at Dorket Head, Epperstone, Gamston, Red Hill and Willington, Derbyshire, while also in the north of the region, evidence assigned a similar date has been forthcoming from Scratta Wood, on the southern slopes of the Ryton valley west of Worksop, and at Gardom's Edge (cf. above). Further south, both Crick and Wilby Way, Wellingborough (Enright and Thomas 1999), in Northamptonshire, and Empingham, Rutland (see below this Section), have yielded evidence of activity/occupation of this period (attribution to this phase in the case of Wilby Way being confirmed by radiocarbon dates). In all these cases this evidence represents the earliest phase of a settlement which is long-lived, with either apparently continuous occupation through the Iron Age and into, in some cases, the Roman period, or where subsequent occupation through these periods is evident but not necessarily unbroken. At least some of these sites were, during this initial period, unenclosed.

At Hamilton, outside Leicester, a trackway and structural evidence on a valley side were dated by radiocarbon to the end of the Late Bronze Age and Early Iron Age (Beamish and Shore 2008). Evidence for perhaps four roundhouses was recovered. South of these the trackway, defined by a series of parallel ditches and vestigial metalling, was interpreted as a livestock management feature for channelling, processing and separating cattle (or maybe sheep and goats if hurdles were employed). In other words this was interpreted as a droveway with races (i.e. the aforementioned channels) in line with the suggestions for the morphology of such arrangements outlined by Pryor (1996) and similar to features found at Pegswood Moor on the Northumberland coastal plain, likewise interpreted (Proctor 2009; cf. Section 6.2).

The precise chronology of the two important Leicestershire hillforts at Breedon Hill and Burrough Hill is not yet entirely clear (Table 4; Clay 2000). A Late Bronze Age start date is possible for Breedon Hill, but occupation at Burrough Hill, while previously speculated to have started in the Bronze Age or earlier Iron Age, is now suggested to date from the 5th century BC on the basis of C14 dates obtained during the 2010-14 excavations (cf. Liddle 1982, 22;

Taylor *et al*. 2012; Thomas and Taylor 2015, 30; pers. comm. John Thomas). Kenyon's seminal work at Breedon Hill indicated that occupation pre-dated the construction of the defensive works (Kenyon 1950, 20), which may also have been the case at Mam Tor. Whilst the sequence of the defences at Breedon Hill is fairly well understood, the dating of the site's development during the first millennium is vague, and the nature of the remains inside the earthworks is not clear (e.g. Wall 1907, 246–7; Wacher 1964; 1977; Liddle 1982). In Northamptonshire occupation at several hillforts is attributable to this phase (for instance, at Hunsbury (Kidd 2000) and Rainsborough (Avery *et al*. 1967)).

Away from the hillforts earlier Iron Age occupation/activity has been identified at several sites in the south-east of the region, including Empingham (Cooper 2000, 46–8), Stamford Road, Oakham (Clay 2000), and perhaps Ridlington (Beamish 1997a), all in Rutland, while settlement of this period is also attested on the Welland and Nene valley gravels. Just over the border in Cambridgeshire, work on the Deepings' bypass revealed an Early Iron Age settlement with circular structures in the Welland valley; pottery from the site is transitional, from Early to Middle Iron Age (perhaps sixth to fifth centuries BC).

At Gonalston, in the middle Trent valley, possible structural evidence was encountered at an unenclosed site, with Post Deverel-Rimbury Plainwares and Late Bronze Age – Early Iron Age pottery in association. Features included scattered pits, post holes and what may be the truncated foundations of roundhouses; these features occurred in dispersed fashion along a gravel 'island' (Elliott and Knight 2008, 165-7). This pattern of scattered unenclosed features is quite characteristic for the period.

By contrast two small contemporary Early Iron Age ditched enclosures have been excavated at Station Road, Elton-on–the-Hill, Nottinghamshire, lying 500m apart and dated by C14 (Brudenell 2018). The most complete was in Area 1 being sub-circular and 26 m in diameter with at least two phases; phase 2 dated 761-429 cal. BC at 95.4% probability. In Area 2 the second phase included a sub-rectangular enclosure 18 x 8 m. A date from bone at Area 2 was 411-231 cal. BC at 95.4% probability. These are perhaps the earliest dated Iron Age enclosures in the region (Brudenell 2018; see Section 3.3).

In Northamptonshire sites of Late Bronze Age – Early Iron Age date occur along the Nene valley. Small-scale sites are also known at Gretton by the Welland (Jackson and Knight 1985), and in the undulating terrain between Corby and Kettering, at Weekley Hall Wood (Jackson 1976) and Great Oakley (Jackson 1982), where the subsoil is clay. At Foxhills, Brackley, an isolated pit [722] produced a radiocarbon date 500-400 BC consistent with the attribution of associated pottery as Early Iron Age. The pit contained bones of cattle, sheep and dog and although solitary (bar a later adjacent pit) a case is made that this is a domestic assemblage indicative of a short-lived settlement, suggested to be typical of the light traces of this period when structures may have been ephemeral (Morris 2019, 90-1). In sum, in Northamptonshire, sites attributed to this date are concentrated on the permeable geologies of the Nene valley, but as in Leicestershire and Rutland occupation on claylands is precedented. In western Northamptonshire defended sites on the higher ground are believed

to be occupied during this period. Fewer sites are known on the clay subsoils of southern and western Northamptonshire and Leicestershire, but this may be due to difficulties of archaeological visibility and non-intensive research input.

Kidd (2000) noted that the distribution of likely domestic activity is very much broadened when the incidence of Late Bronze Age–Early Iron Age pottery collections is plotted using the *Gazetteer of Later Prehistoric Pottery Collections* database (Earl *et al*. 2007). This applies particularly to Northamptonshire, and to a lesser degree to Leicestershire, Rutland and parts of Nottinghamshire and Lincolnshire where such material has been collected, especially via surface survey.

3.3 Settlement Morphology

As noted the evidence for settlement for this period is infrequent. A significant proportion of the evidence is limited in extent, of low density, non-structural (typically pits and shallow gullies), often truncated and, indeed, unenclosed by ditches or palisades – a significant contrast to the subsequent Middle and Late Iron Age evidence. With such a modest sample of settlement sites, the identification of spatial trends and morphological characteristics is largely precluded. One significant conclusion can, however, be drawn: the morphology of occupation sites is not distinctive or prominent enough to make them regularly visible to current survey and prospection methods.

The site at Station Road, Elton-on–the-Hill, Nottinghamshire, produced rare evidence for two enclosures (Section 3.2; Brudenell 2018). In Area 1 the initial enclosure was defined by discontinuous ditches with breaks - possibly entrances – with a ditched funnel-like entranceway to the north-east. In a second phase a regular penannular enclosure, slightly smaller, was instituted again with an entrance on the north-eastern side; the funnel may still have been extant. Likely postholes suggest a gate at the entrance while the ditches could be palisade slots (Brudenell 2018). In Area 2 the earliest features were a series of curvilinear ditches representing a boundary. This was superseded by a small enclosure 18 x 8 m with an entrance to the south-east, thought probably to form part of a larger ditched complex. Given that the two enclosures are approximately contemporary but differ in that one was curvilinear and the other rectangular it was suggested this may represent a functional difference (Brudenell 2018, 96). It was suggested that the enclosures represent farmsteads and that they may have had associated roundhouses that left no archaeological traces (Brudenell 2018, 96). At Sileby in Leicestershire two small Early-Middle Iron Age enclosures were recorded; these may have been approximately contemporary with the enclosures at Elton-on-the-Hill ; one had traces of a roundhouse within (Luke and Barker 2014). In sum these sites demonstrate that enclosure via ditching and presumably associated banks was occurring at settlements and field systems by the end of the earlier Iron Age (cf. Knight 2007, 197) with a parallel being drawn with Gamston although that site is later in emphasis (Brudenell 2018; Knight 1992). At Gonalston, Nottinghamshire, comparatively rare evidence for a bank besides a major boundary ditch was extant (Elliott and Knight 2003; Knight and Elliott 2008, 165, 67 fig. 6).

Figure. Aerial Photos of the Elton-on-the-Hill site …

Sites excavated in Northamptonshire may be broadly typical of non-upland sites in the region as a whole. In Northamptonshire the small number of sites recorded to date, at Gretton, Great Oakley and Weekley Hall Wood (see above and Kidd 2000) demonstrate that settlements are often unenclosed and of small scale, containing perhaps only one to a few timber structures and pits. This pattern is seen also in areas further south, as at Bancroft, Milton Keynes (Williams and Zeepvat 1994, 20–40). At Weekley Hall Wood a probable circular, or possible semicircular structure was recorded (Section 3.4); of the six four post structures discerned, five occurred in an east-west string indicating zoning; two post structures were also present, but pits were few (Jackson 1976).

3.4 Buildings and Structures

The evidence from Weekley Hall Wood is suggested as perhaps likely to be fairly representative for much of the region (Jackson 1976). Here, the probable circular structure was represented only by an incomplete ring of postholes defining a semicircle; if genuinely semicircular, this structure may have been a shelter (as at Gamston); alternatively, the other half of the circle may have been lost, potentially as post settings were shallow. If it was a circular building, a south-east facing entrance is possible (*ibid.*), and its diameter will have been *c.* 13 m, hence very much at the larger end of the size range for such structures. Similarly, at North Hamilton, outside Leicester, three apparent roundhouses (perhaps four) of this era were detected from partial, varied, remains of slot-like lengths for walling and post settings from which they were extrapolated to be *c.* 13.5 m in diameter and placed on the southern edge of an enclosure, not necessarily contemporary and perhaps successive; in one case an entrance was discernible, and it faced east (Beamish and Shore 2008). One feature seen too at Wanlip (cf. Section 4.4, Beamish 1998) was that the walls seem to have been constructed as a series of straight panels not a circle.

The four post structures at the Weekly Hall Wood site are of broadly similar dimensions with a long axis of *c.* 2.5–3.8 m, bar one which is *c.* 1.5 m square. Four post structures are normally thought to represent granaries, although other functions have been suggested: drying frames, funerary platforms, shrines and towers (Ellison and Drewett 1971; Gent 1983; Knight 1984, 154; Beamish 1998, 29). A variation on this theme may be a post structure at North Hamilton with five posts (Beamish and Shore 2008). Covered, but maybe open sided, storage functions for wood or other resources may be imagined.

3.5 Material Culture

3.5.1 Metalworking and Metalwork

Very early evidence for iron smelting was recovered at Greetwell Hall Farm, Messingham south of Scunthorpe in 2007-8 and 2015, with slag mounds and excavation revealing a furnace containing 630 kg of slag; samples from charcoal obtained from without and within

the furnace provided a date of *c.* 780-590 cal. BC (Pitts 2016; Halkon and Jinks-Fredrick 2018; North Lincs HER MLS21192; see Section 8.6).

Metalwork of this period is scarce across central eastern England (cf. Boughton and Scott 2014, 37, referencing the Portable Antiquities Scheme and the HERs). By this time hoards are not a common practice. Occasional finds for this general period include socketed axe types which may have had a currency to *c.* 500 BC. One of the few recovered items is a socketed axehead from Mam Tor attributed to the late seventh century BC (cf. Bevan 2000, 147). This item, in copper alloy, is of Sompting type and was recovered at platform 4 at the site in the 1960s (Coombs and Thompson 1979, 44). Another example, found by a metal detector user, though in this case complete, came from Hathern in north Leicestershire; in reporting this find Boughton and Scott discuss the date of this axehead type and the few instances of Late Bronze Age – Early Iron Age socketed axeheads in the Leicestershire and south Nottinghamshire area (Boughton and Scott 2014). Another example came from Shardlow Quarry, south Derbyshire, a location by the River Trent which has yielded a number of items of Bronze Age metalwork including two swords, two spearheads, a chisel and four other axeheads all of Late Bronze Age date (Davies 2006; see Section 10). A further example, again a find made by a metal detector user, came from Preston Capes, Northamptonshire (Boughton and Cassidy 2012). A variant of a Yorkshire type socketed axe, being a chance find reported from Little Bytham, Lincolnshire, is dated by its reporters to the period 1000-500 BC (Bennet and Phillips 1997).

The Early Iron Age is characterised by the wearing of pins to secure dress rather than brooches. Pins occur too on sites of Middle Iron Age date. In Northamptonshire a Swan's Neck pin was recovered at Wilby Way, Wellingborough, being a type that was in circulation from the Early Iron Age (Bircher 2003). A complete ring-headed pin was excavated at Station Road, Elton-on–the-Hill, Nottinghamshire, and given the context should date to the Early Iron Age (Brudenell 2018). Another example was recovered from a pit alignment at Gretton, Northamptonshire, (Jackson 1974; see Section 7.4), while others are known from Flag Fen and, in Lincolnshire, from Crowland Abbey in the lower Welland valley, and from the upper ditch filling at Giant's Hills I long barrow, where the explanation could be that it was an offering at an older monument (May 1976a, fig. 66.1 and 2). Excavations at Glenfield Park, Leicestershire, resulted in the recovery of a copper alloy ring-headed pin, together with one made of iron (Thomas 2018).

3.5.2 Pottery

Towards the end of the Bronze Age an increase in finger decoration occurs, as evidenced by assemblages from further south in England. However, the East Midlands lacks sites where this shift of emphasis from Post Deverel-Rimbury Plainwares to Decorated vessels occurs (cf. Thrapston: Hull 1998; 2001). A significant assemblage comes from North Hamilton where C14 has assisted in dating the material to this era of transition, where T-shaped rim forms apart, the form typology might have suggested a later Iron Age date (Cooper 2008); no Scored ware ('Ancaster-Breedon') types (see Section 4.5.2) were present in this assemblage,

which is taken as a chronological indicator. Typologically Late Bronze Age – Early Iron Age pottery has been recovered at Harborough Rocks, Derbyshire (Makepeace 2004). Residue analysis was undertaken at Thrapston (Hull 2001).

A significant assemblage of typologically Early Iron Age pottery was forthcoming from Station Road, Elton-on-the-Hill, Nottinghamshire (Brudenell 2018). The great majority of the pottery was tempered with shell which is typical of groups from Nottinghamshire and Lincolnshire during the earlier Iron Age and so this assemblage is broadly consistent with the slightly later groups from Fiskerton and Billingborough (Lincolnshire), Gamston, Red Hill (Ratcliffe-on-Soar) and Clifton Park and Ride, Nottinghamshire (Brudenell, 2018, 89 with references). At least 67 vessels were represented amongst the assemblage from Elton-on-the Hill, with ovoid or barrel jars with short up-standing or out-turned rims (one with finger-tip decoration) and a slack shouldered jar with everted rim present. No Scored ware ('Ancaster-Breedon') type pottery was present, which is a dating indicator consistent with the suggested earlier Iron Age and possibly transitional date for the material of *c.* 500-350 BC (Brudenell 2018, 91).

3.5.3 Other Artefact Categories

A small assemblage of lithics was recovered at the North Hamilton site and is seen as typical of such groups from sites of this period (Cooper 2008).

Fragments from two or three shale bracelets were recovered associated with house platforms at Mam Tor in the 1960s consistent with other cases of items of this type from Late Bronze Age – Early Iron Age contexts; one was 7 cm in internal diameter (Coombs and Thompson 1979, 44).

3.6 Agriculture

There is a mixed and partial picture for agricultural activities through this period. Cereal grains in the form of barley and spelt were recovered in very low numbers from features associated with the roundhouses at North Hamilton leading Monckton to suggest the site may have concentrated on livestock production whilst noting that very low frequencies of grains are typical of samples from prehistoric sites (Monckton 2008). Beamish and Shore suggest that the scale of the droveways and races at the site will have been best suited to processing large numbers of animals, and so probably represent a facility used for a number of herds, perhaps belonging to different groups, and gathered and processed on an occasional basis (Beamish and Shore 2008). The possibility of seasonal occupation was floated by these authors related to these specific activities. They point up the juxtaposition of the archaeological record of the period which on the one hand is typically thin and ephemeral and suggests modest human population numbers, with a fairly open landscape with divisions by pit alignments (cf. Section 7.2) not enclosures, and on the other an installation for processing hundreds of animals implying a large number of consumers.

Only three charred cereal grains were recovered from bulk sampling at Station Road, Elton-on–the-Hill, Nottinghamshire, all from Area 2, either due to poor preservation, taphonomic aspects or because crop processing was not undertaken at the site (Brudenell 2018). So these absences of evidence may not mean crops were not being grown in quantity.

Comparatively few saddle querns have been found in the East Midlands generally, though more recent work in Leicestershire and Rutland has increased the corpus. No querns were present at the Station Road, Elton-on–the-Hill, site (Brudenell 2018). Examples are known from Breedon Hill and Wanlip, Leicestershire, Ancaster Quarry, Lincolnshire and Swarkestone Lowes, Derbyshire, where the one example occurs in a fine-grained sandstone (Elliott and Knight 1999, 124, fig. 16.1). Where present saddle querns often occur in contexts with imprecise dating. A case in point is the saddle quern fashioned from Millstone Grit, which perhaps dates to the Middle Iron Age, present in a pit at Aston-on-Trent, Derbyshire (Hughes 1999, 185). It is possible that fragmentary or not they are not consistently recognized by excavators, who may not be aware of the characteristics of such items, especially at sites with much other stone present. Consequently numbers and presence (catalogued in site reports) may under-represent the actual occurrence. The improvised use of locally available stone (e.g. river and boulder clay cobbles) seems to have been normal.

4. The Middle Iron Age *c*. 450 BC–100 BC

4.1 The 'Identity' of the Middle Iron Age and the Nature of the Record in the East Midlands

As Clay and others have pointed out, the Middle Iron Age is as much a cultural phenomenon as a chronological entity (Clay 2000; Kidd 2000; Hill 1997a). Like the preceding periods it does not have hard and universal chronological parameters but relates to a set of practices that were of comparatively long duration and which were replaced gradually and at differing times. Defining attributes of the Middle Iron Age are hillfort building and use, a floruit of agglomerated sites, the adoption of bow brooches (and penannular brooches), and the appearance of La Tène style decoration.

A large number of sites attributable to this phase are known from Northamptonshire where they may be described as ubiquitous (Kidd 2000). Elsewhere in the region fewer sites have been identified, but the corpus has been steadily accruing as a consequence of interventions arising from PPG16 and its successors, notably in the Trent valley and around Leicester. In Lincolnshire, for instance, if one goes back just a quarter of a century only a tiny number were known (cf. May 1976a; Willis 1997); now the picture in the region is transforming through a cascade of evidence, albeit from some specific 'hot spot' areas of development.

The original 2003 Resource Assessment noted the greater number of Middle Iron Age sites recorded and published for Northamptonshire compared to the rest of the region (Willis 2006). The question then was whether this was due to differential archaeological survival,

potentially reflected an actual difference in settlement spread and density, or linked to factors around the intensity and long term investment in archaeological investigation, perhaps related to different levels of mineral extraction and later 20th century settlement expansion. Now the density of records from Northamptonshire for the Middle Iron Age is matched by areas around Leicester, especially to the north of Leicester (Beamish and Shore 2008, 72-3 and fig. 16; Speed 2010, fig. 23; Kipling and Beamish 2018, fig. 94), the Trent valley (Knight 2007) and the Humber Bank in the Killingholme area (see Section 5.1.3 and for general observations 5.1.1). The emerging picture from these areas seems likely to be representative of many others in the region yet to be intensively investigated and documented.

With one or two exceptions, sites in the region have not yielded the quantity of remains found where sizeable interventions have taken place in other regions in southern and eastern England, for instance, at Little Waltham in Essex (Drury 1978), at Wetwang and Garton Slack in the East Riding (Brewster 1980), or in the Upper Thames valley. That said, that calls into question how the frequency of finds is established, given that volumetric analysis (i.e. ratios of finds per volume of deposits excavated) is almost never practiced despite the relative ease with which this can be undertaken.

4.2 Settlement Evidence

4.2.1 General Picture

Rectangular ditched enclosures, generally not covering more than *c*. 0.5 hectares, and typically of *c*. 0.2 ha, and containing one or two circular buildings, together with ancillary structures, have been seen as the customary site type of the Middle and Late Iron Age in central Britain (e.g. Parry 2006, 61). Evidently they represented the farmsteads of small family or kin groups (*ibid*.). Sites of this type dated to the Middle Iron Age have been excavated across the central band of England and further north (cf. Haselgrove 1984), for instance at Bursea Grange in the south-eastern Vale of York (Halkon and Millett 1999, 67–74), Weelsby Avenue, Grimsby (see below) and at Fisherwick, Staffordshire (Smith 1977; 1979), a site which became particularly influential in our understanding of the Iron Age in central Britain.

Such sites are well-known from aerial reconnaissance and field survey in Northamptonshire, where a number have been excavated (Kidd 2000). Some continue into the Roman era, for instance at Weekley (Jackson and Dix 1987). However, the sample of sites that have now been investigated display considerable variation, and generalisations should proceed with caution. This degree of variation mirrors the pattern observed in Cambridgeshire (pers. comm. Christopher Evans) and Leicestershire, though broad trends can be discerned.

One of the better known settlements of this period in the region during the later 20th century was the site at Ancaster Quarry, despite the fact that it was not fully published, simply because so few sites had been explored. The site, located on a shelf on a limestone slope overlooking the Ancaster Gap, was excavated in the early 1960s and a summary was

published by May (May 1976a, 133-41). This apparently open settlement was discovered following quarrying. Features recorded included two circular structures, with, remarkably, ovens and fireplaces, and a series of pits, most of which contained occupation 'refuse'. Bell-shaped pits were reported which may parallel the familiar grain storage pits of Wessex and elsewhere (e.g. at Brackley, Northamptonshire, Section 4.2.2). The pottery typifies the Middle Iron Age East Midland handmade tradition and constitutes one of the 'type-collections' of Cunliffe's Ancaster–Breedon style, also referred to as 'Scored ware' (Cunliffe 1978, 43; 2005, 109-11; see Section 4.5.2). In Northamptonshire another open settlement of Middle to Late Iron Age date was fully excavated in the 1990s at 'The Lodge', Crick (Chapman 1995; Masefield *et al*. 2015); *c*. 20 circular structures were recorded, relating to several phases. At Main Road, north-west of Crick, *c*. 1.5 km to the east of The Lodge, settlement of this date seems to have been enclosed as a sub-square enclosure covering 0.3 ha contained the remains of five likely roundhouses in the later Middle Iron Age, although the chronology of the sequence and associations proved imprecise (Mudd *et al*. 2017).

A number of other important sites have been examined, and some of which are now fully published. At Wanlip, near Leicester, excavations in advance of road construction revealed a variety of occupation features outside a comparatively small enclosure, *c*. 20 by 17 m, which was thought to be associated with cattle/stock management rather than occupation (Beamish 1998). This site, lying on sand and gravel was recorded previously as a cropmark. An integrated programme of radiocarbon and luminescence dating indicated that the settlement was in use between *c*. 450 and 350 BC. Three further significant additions to the corpus of Middle Iron Age settlement sites are published from Leicestershire, all sited on boulder clay. They comprise the Elms Farm/Manor Farm agglomerated settlement at Humberstone, where the partly open arrangement of the initial settlement (cf. Elms Phase 1b) develops through perhaps five centuries over an area of *c*. 13 ha (Charles *et al*. 2000; Thomas 2011a), Beaumont Leys (Thomas 2011a; see below, this Section) and Coventry Road, Hinckley, dated by C14 to the third century cal. BC, with roundhouses within and without a sub-rectangular enclosure but yielding sparse cultural material (Chapman 2004; see Section 4.3). Glenfield Park, Leicestershire, is a further site of broadly similar date, yet to be fully published, but which has yielded important evidence (Thomas 2018; see below, this Section). C14 dating suggests the Beaumont Leys and Glenfield Park sites have their origins around the turn of the Early to Middle Iron Age, slightly later than is the case with Crick in Northamptonshire (Hughes and Woodward 2015).

A site of different type was discovered by chance in 1990 at Sleaford. This comprised a large palisaded enclosure, which measured at least 50 m across (Elsdon 1997). Excavation revealed massive close-set postholes, an entrance and a 'cross-wall'. Only a small proportion of the interior was excavated, with no evidence of domestic structures coming to light. Ancaster–Breedon 'Scored ware' style pottery was recovered, suggesting a Middle or even Late Iron Age date. Monuments of this type and date may not have been particularly rare in eastern England during the Early and Middle Iron Age but their identification and excavation is rare. Elsdon (*ibid*.) suggested that the site might parallel that investigated at Fisons Way,

Thetford, Norfolk (Gregory 1992), but the function is uncertain due to the absence of archaeological features and the lack of excavated parallels. There are indications that the enclosure included stock management and arable crop processing, and whilst suggesting that the site was defensive or ritual, Elsdon did not rule out a domestic function. Around ten palisaded enclosures of the period are known in Northamptonshire including a sub-rectangular example at Briar Hill, measuring 20 by 10 m (cf. Kidd 2000).

Middle Iron Age occupation is well-attested in Northamptonshire, the greatest concentration of known sites occurring, unsurprisingly, along the Nene and Ise valleys and in some instances on the clay subsoils (Knight 1984; Taylor 1996; Kidd 2000). Again, fewer sites are logged in the south and west of the county, probably due to limited survey and intervention needs (cf. Kidd 2000). One site that has been examined in this area is Banbury Lane, King's Sutton, where a settlement was established in the Middle Iron Age and which, in common with at least three other sites in the area, does not continue through the Late Iron Age (Ingham 2017, 83).

Overall, the Iron Age is poorly represented in the Fenland Survey (pers. comm. Tom Lane; Hall and Coles 1994) and was specifically targeted in follow-up work to establish whether this was a reliable pattern. A different picture emerged as excavations in the 1990s revealed a series of sites of the first millennium BC, while sites examined previously have now been published. Along the western and southern edges of the Lincolnshire Fen in particular, an array of sites has yielded evidence for salt production (salterns) and domestic settlement. Data from the survey implied that perhaps a third of the sites, that is those yielding briquetage but no pottery, could be satellite salterns away from the domestic base. Where occupation evidence occurred, it was suggested that such 'settlements' were sporadically occupied, perhaps seasonally (cf. Lane and Morris 2001). These sites have been sampled rather than extensively excavated but a fairly consistent picture is clear, as exemplified by the small-scale work undertaken at Helpringham Fen and at Cowbit Wash (Healey 1999; Lane and Morris 2001).

At Helpringham Fen, in addition to evidence for salt production, pottery, quern fragments, and animal bones were recovered indicating domestic activity at the site or close by. Two radiocarbon dates were obtained (Healey 1999, 19 and appendix), which together with the pottery suggests use in the third century BC. The salterns at Cowbit also produced pottery and animal bone. This complex site yielded evidence of various phases of use, principally during the Middle Iron Age (as denoted by radiocarbon and archaeomagnetic dating), with fairly strong indications that this was seasonally organised (Lane and Morris 2001); the chronology of the earlier phases could not be established. Similarly, excavations at Langtoft, Outgang Road, north of Market Deeping (Lane 2001) where ceramics indicated a Middle Iron Age saltern, also revealed a circular structure *c.* 8 m in diameter, defined by a gully with a series of postholes within. This may well represent the remains of a domestic building; again the faunal record is consistent with other indices suggestive of occupation. At Hoe Hills, Dowsby, on the Fen edge, two comparatively well-preserved successive circular structures of first millennium BC date were also excavated as part of the

Fenland Survey follow-up programme. Associated pottery of Scored ware tradition points to a Middle and/or Late Iron Age date (pers. comm. Tom Lane; Lane and Trimble 1995).

These interventions have established that stratified remains of salterns dating to the first millennium BC (and Roman period) are often extensive, can be comparatively well-preserved, with a variety of cultural and palaeoenvironmental data represented, and with some level of domestic occupation. Unequivocally, the Fenland environment is an important resource for studies of the first millennium BC in eastern England. However, these sites remain subject to serious threats from ploughing and the drying out of waterlogged deposits preserving significant palaeoenvironmental information (Hall and Coles 1994; Lane and Morris 2001). The environmental circumstances and histories of such sites mean that excavation and post-excavation are likely to be complex, and this aspect requires careful consideration when costing archaeological work. Work in recent decades has generally seen interventions of modest scale, often arising from infrastructure easements (e.g. Bush forthcoming); there is a strong case for area excavation at such 'sites', since results to date suggest that these signify extensive complexes with dispersed functional areas.

Work in advance of the Covenham to Boston pipeline recorded extensive utilization of the southern Wolds during the Middle Iron Age but the southern part of the Lincolnshire Marsh (sites D3-D6) showed denser activity, possibly explained if the Marsh were a seasonal focus for summer livestock grazing (Bush forthcoming, chapter 3; Percival forthcoming). The works shed light on an area hitherto little known for this era. On the Marsh apparently unenclosed sites occurred at North Cockerington (site D3) where partial evidence for two (and just possibly three) circular structures was preserved (one, interpreted as a roundhouse, measured 7 m in diameter internally), along with a rectangular structure with possible beam slots 8.5 m by 4.5 m, while at South Cockerington (site D5) two circular structures interpreted as roundhouses were also recorded, one with an eastern entrance and measuring 13 m in diameter internally (Bush forthcoming). On the southern Wolds a site at Brinkhill (site V3) had two circular structures and one possible D-shaped structure and may have been enclosed. An enclosed site was recorded at Harrington (site W4) again on the south Wolds, being of possible D shape but was only partly exposed, measuring 29 m internally; ditch fills suggested there had been an internal bank; it had a 3 m wide entrance on its north-west side with boulders placed in ditch terminals by the entrance. The function of the enclosure was unclear as it was only partly exposed (Bush forthcoming, chapter 3). Less work has been undertaken along the North Sea coast. Here cover deposits mask ancient land surfaces at many locations (Kirkham 2001; pers. comm. James Rackham). A cluster of salterns, however, is recorded in the vicinity of Ingoldmells, via piecemeal work over several decades (Baker 1960; 1975; Kirkham 2001). There is some likelihood that circular features *c*. 9–12 m in diameter recorded by Warren (1932) beside salterns at Ingoldmells Point, represented buildings of this period, associated with salt production. Again, these may not have been domestic structures in continual use, but seasonally occupied dwellings. Alternatively, they may have served some other purpose, perhaps specifically related to the salt production process.

Turning to the defended sites, Breedon Hill and Burrough Hill in Leicestershire, and Crow Hill, Hunsbury and Rainsborough in Northamptonshire were evidently in use during this period (cf. above; Thomas 1960; Brown and Simpson 1968; Liddle 1982; Parry 2006; Jackson 1994b; Avery *et al*. 1967; Thomas and Taylor 2015). This was the main period of occupation at Burrough Hill and, indeed, probably when the site starts; an interesting discovery during the more recent work was the existence of a contemporary settlement outside the hillfort (Thomas and Taylor 2015).

The hillfort at Castle Yard, Northamptonshire (Knight 1987), as well as the plateau fort at Honington Camp (Lincolnshire) may also have been constructed during this era. The sizeable double-ditched enclosure near the Fen edge at Tattershall Thorpe, Lincolnshire, was also apparently in use at this time, as indicated by radiocarbon dating and ceramics (Chowne *et al*. 1986; Seager Smith 1998). Its firm interpretation is doubtful, in part because little of its interior has been explored (or for that matter, its immediate exterior). A central agricultural role in a pastoral economy was favoured by its excavator (Chowne *et al*. 1986), but now it might be suggested that the identity of the site involved domestic, high status and/or ceremonial functions. Proposing, however, that the site is a 'marsh fort' analogous to those at Burgh, Suffolk (Martin 1988) and Sutton Common, (north of Doncaster) South Yorkshire (Van de Noort *et al*. 2007), whilst legitimate, only raises further questions given the limited evidence that is currently available (see Section 6). Information about the interiors of most of these East Midland forts and enclosures is generally meagre, hindering our understanding of their chronology, character, status and function/s (see Section 6).

There is little firm evidence for Middle Iron Age settlement in the Peak District, but this apparent absence of occupation may derive from a lack of archaeological input and an inability to recognise diagnostic Middle Iron Age material and to discriminate sites from those thought to be Late Bronze Age or Early Iron Age (cf. Radley and Radford 1969). These aspects of the evidence are discussed by Bevan (2000) and Chadwick and Evans (2000, esp. 118–9; see above), along with older assumptions about the use of the area at this time, which they understandably see as flawed. Small amounts of typologically Middle Iron Age tradition pottery (but possibly still current into the Roman era) have been recovered from the Peak region although not, as yet, associated with settlement features (Bevan 2000, 147).

In the Trent valley the enclosure of settlements during the Middle Iron Age by ditching has facilitated their recognition (e.g. Gamston: Knight 1992). The shift towards more enclosed ways of living and structuring activities and routines has been outlined by Knight for the valley area (Knight 2007). Site 1 at Holme Pierrepont on the valley gravels, and Aslockton, further east in the Devon valley, may both have begun in the Middle rather than the Late Iron Age (O'Brien 1979; Palmer-Brown and Knight 1993). Another site, at Fleak Close, Barrow-upon-Trent, on the Trent flood plain spans the Middle to Late Iron Age with recut enclosure, centrally placed roundhouses and a range of material culture (Knight and Southgate 2001). During works for the A453 widening scheme by Barton in Fabis, Nottingham, an enclosure

of Middle Iron Age date *c.* 50 m by 50 m was examined. Excavations revealed a centrally placed roundhouse defined by a penannular gully 12 m in diameter; the entrance faced east and the building may have been of two phases (Fairhead and Burgess 2013).

There has been limited identification and investigation of Middle Iron Age sites in Lincolnshire, particularly in the middle and north of the historic county. This is more likely a reflection of the infrequency of modern development rather than an enduring absence of enclosure via ditching, as seen at Ancaster Quarry and Sleaford further south (this Section, above). In North-East Lincolnshire a small settlement, presumably a farmstead, was excavated at Weelsby Avenue, Grimsby, dated to the Middle Iron Age (Sills and Kinsley 1978; 1979; 1990; Wise 1990; Sills 2001; see the latter for the fullest details). The site, located on a till spur with clay subsoil, was enclosed by a single ditch and bank which demarcated an interior *c.* 40 m square; within were two circular structures (roundhouses) and a four post structure. Subsequently the enclosure was used for non-ferrous metalworking (Section 8.7). Approximately contemporary is a banjo enclosure site at Timberland Estate, Scunthorpe, North Lincolnshire (North Lincs HER SLS3984) which provides further indications of enclosed settlement at this time (the term 'banjo' describing the characteristic ditched funnel shape opening to a circular enclosure).

Some degree of continuity is observable in site location, in so far as a high proportion of Middle Iron Age sites in Lincolnshire either continue into the Late Iron Age at the same location, or nearby. This is demonstrated at Ancaster, Helpringham Fen, Sleaford and Rectory Farm, West Deeping (Savage *et al*. forthcoming).

4.2.2 Agglomerated Sites

Agglomerated sites – that is where a geographically close set of settlement clusters occur – emerge as a feature of the Middle Iron Age in the region. Settlements of this type are first seen in the Early Iron Age elsewhere in eastern England (Medlycott 2011, 29) but in our region their origins appear to lie in the Middle Iron Age with a variable pattern of continuity into the Late Iron Age. These sites, which include Covert Farm, Crick, Brackley, Northamptonshire, and Leicester Road, Melton Mowbray, Leicestershire, are considered in detail below (see Section 5.1.6); here the focus is upon their Middle Iron Age ancestry.

Covert Farm has a northern boundary ditch, with another possible boundary to the east, these features probably dating to the fifth century BC, but that apart the site could be seen as 'open' (Hughes and Woodward 2015). Brackley too appears to have been an open site. Some brief details for one of the Brackley clusters can be noted here: at Foxhills, the Middle Iron Age saw a much stronger human imprint than previously (cf. Section 3.2) with four roundhouses 11 m, 13 m, 13 m, 15-16.5 m in diameter plus twelve categorized as roundhouses/auxiliary structures (Morris 2019, table 15; see Table 5). Pits apparently for grain storage appear from the earlier Middle Iron Age, together with four and six post-hole 'granary' structures. The latter became the predominant storage method in the Late Iron Age. The settlement at Beaumont Leys, Leicestershire, like Humberstone and Covert Farm, lay to one side of a linear boundary, rather than being enclosed, and dates to the earlier Middle Iron

Age; it comprised post-built roundhouses, four post structures and enclosures for livestock (Thomas 2011a).

At Leicester Road, Melton Mowbray, excavation and survey results from work in 2016-18 revealed a site covering 10 ha set within a triangular ditched enclosure and containing no less than 67 small enclosures, a proportion of which would appear to be for circular structures (Huddart and Allen 2021). The site is broadly dated as Middle to Late Iron Age and appears to end during the Late Iron Age. In contrast to the Brackley complex this site shows very limited evidence for a crop based economy (lacking grain storage pits) and a livestock focus would be consistent with its enclosed character. Although there is some re-cutting of ditches, the site seems to have been comparatively shorted lived; study of the evidence is as yet only available as an Assessment report (as of March 2022) and so the site sequence may become clearer once those results are available. Excavations at Glenfield Park, also in Leicestershire, revealed a similar looking settlement, but this long-lived site may only have seen four roundhouses standing at any one time and was less bounded (cf. Thomas 2018).

At Covert Farm, Crick, an area of *c.* 13 ha was excavated, with the known Iron Age complex of settlement clusters extending for at least 16 ha. Here it was concluded that the settlement 'at its height included over 40 distinct circular buildings'; given the presence of other nearby settlement clusters, at Long Dole and Crick Hotel (Masefield *et al*. 2015; Hughes and Woodward 2015, fig. 2), the deduction is that a substantial population was located in the area (Hughes and Woodward 2015, Foreword, 1, 137). Attempting to estimate the size of population for the excavated area is problematic as evidence for some structures may have been lost, especially for the early phases when they may have left more ephemeral traces and/or been removed by later occupation features. There is also the proviso that the occupation could have been seasonal. Assuming one person per 10 m² against the total domestic space per period Hughes and Woodward arrive at the following population figures for Covert Farm: Period 2 (Early Iron Age) a population of around 42; this rises in Period 3 (earlier Middle Iron Age) to 140; and then to 241 in Period 4 (later Middle Iron Age); and down to 136 in Period 5 being the Late Iron Age (Hughes and Woodward 2015, 137). The qualification with these figures that some buildings might have been for 'ancillary' use is made by Hughes and Woodward; they also point up that the shift from Period 3 to 4 witnessed greater clustering and zonation. Thomas and Enright make similar observations with regard to Wilby Way where the extent of the site is not known but a snapshot view of the features recorded may give a false impression of the size of the community, and they conclude that the site at any one time may have been small, with frequent shifts in the focus of occupation (Thomas and Enright 2003, 61). Qualifications in terms of, for example, discernible structures, functional use of buildings (i.e. not all were domestic), longevity of buildings, etc. are significant matters, yet it is important too, that investigations result in some consideration of population numbers. All told, the Covert Farm site is very large compared to that of 'farmstead' enclosure sites and complexes seen in the contemporary landscape elsewhere in the East Midlands including Northamptonshire, and this is without adding the point that the Covert Farm site is part of a greater clustering.

The emergence of these agglomerated sites has implications for the hitherto prevailing models of settlement systems and hierarchy. Their existence raises questions around their relationship with hillforts given that occupation and use of these places (such as Hunsbury and Borough Hill, Daventry) will have been concurrent and with similar population sizes. There may be a case for seeing these aggregated sites as having similar purposes and functions to that of contemporary hillforts, including clustered settlement and large capacity for produce storage, combined with close ties to agriculture (cf. Bradley 2019).

The presence of an extensive Middle Iron Age settlement outside the hillfort at Burrough Hill (Thomas and Taylor 2015) suggests the hillfort may have been the 'acropolis' to a larger agglomeration. Colin Haselgrove (pers. comm.) observes that this may well be repeated at other hillforts such as Hunsbury, hence extension of geophysical survey beyond the earthworks (see Section 6), could prove informative as to the actual spread of occupation foci around hillforts.

[Table 5 Here]

4.3 Settlement Morphology

No standard, regular, pattern of settlement morphology is discernible for the Middle Iron Age in the region. Instead, sites display variations in layout (in terms of landscape setting), aspect, internal arrangement and enclosure type, doubtless reflecting different environments, functional needs and ideas. That said a series of familiar elements in terms of archaeological features occur, as in the preceding and succeeding periods, both within the region and beyond. The 'footprint' of occupation and activities becomes significantly more marked. In the East Midlands morphological elements occur in differing combinations and configurations; sometimes certain elements are present, sometimes not. Whilst no precise template for settlement morphology was being followed the 'grammar' is similar in so far as some ordering principles were clearly adhered to in the materialisation of individual sites (Speed 2010, 66-71). Some clustering of family/kin/other groups is implied by the number of apparently contemporary roundhouses in certain areas.

Enclosure become more common from the earlier Middle Iron Age and at some sites this took the form of palisading but the general trend was for ditching and banks, probably with hedging. Palisades take more effort to construct and, moreover, wood resources for structural purposes were probably becoming less accessible (judging from environmental indicators such as pollen). Hence it is likely that wood was curated for essential uses in many locations. In time palisades gave way to earthworks. One proviso with roundhouses within enclosures is that almost invariably there is no stratification that links the two: their contemporaneity is usually assumed due to relative placement (and orientation), and sometimes via finds (though dating may not be precise) and as simply a reasonable deduction. A case in point is the site at Holme Dyke, Gonalston, that is mentioned above (Section 1.3).

The publication of Wanlip (Beamish 1998) had highlighted a number of significant aspects in

the anatomy and biography of this site which reveal a 'grammar' in the human and social practices undertaken there. Through careful analysis and presentation of the evidence, various trends noted elsewhere in the British Iron Age were shown to be reflected in the archaeology of this site. It was suggested that buildings and enclosure entrances were systematically oriented in - what was seen following the conventional thinking of the time - relation to cosmological events (cf. Oswald 1997; Hill 1995b) but which may now be explained by other imperatives and practices; and the phenomenon has been much discussed (e.g. Pope 2003; 2007; Speed 2010, 46-7). Two post structures occur at Wanlip in an east–west band across the site (reminiscent of the band of four-posters at Weekley Hall Wood) and are aligned roughly north–south (Beamish 1998). Another such alignment is suggested at North Hamilton, Leicester (Beamish and Shore 2008). There is an overall symmetry to the arrangement of the major site elements; zones with pits occur, with the main interior of the enclosure essentially clear of pits.

It is characteristic for settlement sites of this period to commonly include evidence for circular buildings and ancillary structures, particularly four post and two post structures. These structural components are present at Wanlip, where one of the four post structure, that was exceptionally large, had a centrally placed cremation burial (Beamish 1998). What two post structures represent is often not clear. They may represent drying frames, upright looms, or the remains of entrances to circular buildings otherwise not visible (cf. Knight 1984, 159; Ellison and Drewett 1971); the latter is suggested at Wanlip (Beamish 1998, 34–6).

The settlement revealed at Elms Farm, Humberstone (Charles *et al*. 2000) part of a larger site of agglomerated nature (Thomas 2011a), during its Middle Iron Age phase comprises a cluster of several penannular gullies, plus other gullies, a small enclosure (containing no structures or features), and two four post structures; not all features are contemporaneous. The settlement was essentially open, but lies within and seems to respect a Bronze Age enclosure, the remains of which may have been partially visible at this time. Building orientations are to the east. The largest penannular gully presumably denoted the largest building and this lies to the front of the rest, four out of five of which are in a row.

At Coventry Road, Hinckley, all seven roundhouses faced east, as did a sub-rectangular enclosure containing four of these structures, including a large example 12 m in diameter and one with a pair of post-settings by the entrance presumably relating to a doorway; one of the roundhouses outside the enclosure was of similar scale (Chapman 2004). No internal features survived. A 2 m deep feature at the site could be a well or water pit. It was suggested that the site was short-lived and occupied by a single family over perhaps just one generation on the basis, seemingly, of the lack of obvious roundhouse replacement and low finds count (Chapman 2004).

Variety in the morphology of settlement enclosure is further highlighted by sites in Northamptonshire. Enclosure A at Stanwell Spinney, Northamptonshire, dating to this period, was oval in plan and seems to have enclosed a circular building (Dix and Jackson 1989). At Banbury Lane, King's Sutton, Northamptonshire, at least two roundhouses

were located west of a broad ditch but were replaced by a number of re-cut small rectilinear and penannular enclosures. The boundary system was remodelled on more than one occasion on a co-axial theme, all within the Middle Iron Age (Ingham 2017). One of the roundhouses (G6) was defined by a drainage gully *c.* 14 m in diameter and the actual structure was probably 10 m in diameter; the entrance was to the south-east. A second drainage (presumed eaves-drip) gully was 13 m in diameter and this structure faced east, while traces for two further possible roundhouses were noted. The occupation could have lasted into the early Late Iron Age but there was probably only one roundhouse standing at any one time (Ingham 2017, 83). To the south three four post structures were present in a separate 'zone' (Ingham 2017). Bones from two dogs of medium size, probably from complete burials, were encountered, one in a ditch and the other in the eaves-drip gully of G6 and this is not uncommon for sites of this period (Maltby 2017).

Important to note is a phenomenon reported from Wilby Way, Wellingborough, from both study of the distribution of the pottery and animal bone at this relatively extensive site: both categories show evidence for patterning in discard practices which may indicate zonal organization of activities or interventions to do with waste management decisions and practice (Thomas and Enright 2003).

Excavation of the Middle Iron Age site at Hallam Fields, Birstall, Leicestershire, in 2004-5, revealed two adjoining ditched enclosures (one larger than the other), each with a centrally placed roundhouse, sub-divisions and zones of pitting. Of interest is that the overall layout of the enclosures mirrored each other (Speed 2010). To account for this 'symmetry' the excavator suggested that a template may have been followed or the close similarities arose from the practicalities of the way people acted and moved (*ibid*., 37). Zoning and functional divisions of space were identified, such as pit concentration, while phosphate analysis – a sampling method perhaps seen less in recent times than might be expected - suggested specific enclosure locations for the accommodation of livestock (Speed 2010, 50-5, 61). Magnetic susceptibility study was also undertaken as part of the soil micromorphology strategy. The site, which may have been in use for *c.* 140 years, was set within an immediate wider landscape showing broader spatial organization during a period when settlement sites show a trend towards enclosure.

During the life of the sub-rectangular enclosure at Wanlip, a south facing entrance existed throughout, with a least one other opening to the east, during one sub-phase. Weelsby Avenue, Grimsby, also had a south-facing entrance in its Middle Iron Age phase. The palisaded enclosure at Sleaford had an entrance (perhaps the main entrance) facing south-east.

On the Lincolnshire Marsh the two circular structures recorded at North Cockerington (Section 4.2) were both small at 7 m in diameter, possibly for functional reasons, with one facing east or south-east and the other east; the rectangular structure (c. 8.5 m by 4.5 m) had beam slots on three sides and a cluster of post settings within but its purpose is unknown (Bush forthcoming, chapter 3). Of the two circular structures at site D5, South Cockerington,

one faced east and was 13 m in diameter and the other was 7-8 m in diameter, represented by part of an arching gully (Bush forthcoming, chapter 3). Towards the southern end of the Lincolnshire Wolds, at Brinkhill (see Section 4.2), one circular structures measured 10 m in diameter internally with an opening to the south-west, while a later circular structure was 11.7 m internally with a possible north-east entrance, with a pair of post holes set within the entrance way presumably relating to a door (Bush forthcoming, chapter 3). The morphology of the settlements associated with salt winning on the Lincolnshire Fen edge, however, remains unclear and warrants further investigation.

In sum, it is apparent that archaeological data gathered for sites at this period is often more extensive than with settlement sites of the Late Bronze Age and Early Iron Age but also more informative of the layout, organization and use of space.

4.4 Buildings and Structures

In contrast with the variations in site morphology during this period, the buildings and structures are more coherent in type and size, though nonetheless dissimilarities occur. Roundhouses predominate and their maximum size is considered to be 10-12 m for the structure (cf. Thomas and Enright 2003, table 11), so gullies beyond that diameter may normally be seen as drainage or eaves-drip features. Considering variations, the one certain circular structure at Wanlip had a ring groove suggesting polygonal construction (Beamish 1998; see above Section 3.4). It was *c.* 13 m across and had one entrance facing east-north-east, and perhaps a second aligned due west; postholes within the ring groove were probably related to its construction and use. One of the two circular structures at Ancaster Quarry was defined by a gully of *c.* 12.5 m diameter, and according to the excavator this could have been for the inner (load-bearing timbers) or outer wall, though this would be at the upper scale of size for this period (May 1976a, 133). Whichever, this building is fairly large and of a similar magnitude to the structures at Wanlip and (probably earlier) Weekley Hall Wood (cf. Section 3.3). It had an entrance facing north-west, providing a panoramic view looking out from the doorway. The second Ancaster Quarry structure was much smaller at 4.6 m in diameter for its outer wall. Weelsby Avenue, Grimsby, also has asymmetric sizes as the enclosure contained two circular structures, of *c.* 9.5 and 5.5 m diameter respectively (Wise 1990; Sills 2001). Where this asymmetry in size occurs different functions are suggested as a possibility if the structures are potentially contemporary. The excavated enclosure complex at Fisherwick (Staffordshire) also contained two circular structures, one being 11 m in diameter, and so on the large size (Smith 1979). The largest circular structure at Elms Farm (Leicestershire) was represented by an eaves-drip gully, the internal diameter being a substantial 18 m; no internal features were identified. Of the five or so other circular structures of this phase from the site, two are defined by gullies *c.* 10 m in diameter and two others by gullies *c.* 8 m in diameter. The eaves-drip gullies at Hallam Fields, Birstall, had diameters of 13.2, 10.7 (at the same location as the previous structure) and 10 m; post settings may have been part of these structures (Speed 2010). Important structural evidence for this period was also recovered at the Leicestershire sites of Beaumont Leys, Humberstone and Glenfield Park (see Section 4.2 for references).

Figure. Plans of circular structures at Beaumont Leys and Humberstone …

Four post structures, of the type normally thought to represent granaries (cf. Section 3.4), are recorded at Sleaford, Elms Farm (Humberstone), King's Sutton, Glenfield Park, Wanlip and Beaumont Leys, where there is a convincing row of them (Thomas 2011a), as well as Weelsby Avenue, Grimsby, although not at Ancaster Quarry, where, possible grain storage pits occur. Those at Banbury Lane, King's Sutton, were of the size range 2.4 – 2.8 m square (Ingham 2017, 74). Two four post structures at Wilby Way, Wellingborough, measured 2.2 x 2 m and 1.9 x 1.6 m (Thomas and Enright 2003, 30, fig. 6). Two post structures are known from Ancaster Quarry, Sleaford and Wanlip, as well as from elsewhere.

Fragments identified as oven plates were recovered at Leicester Road, Melton Mowbray, being a rare survival of ceramic settings for cooking vessels; the 136 pieces displayed perforations, with two central perforations represented measuring *c.* 110mm and 120mm (McNulty 2021).

4.5 Material Culture

4.5.1 Metalworking and Metalwork

▪ Metalworking. Iron smelting was presumably widespread in parts of the region by this period (see Section 8.6) with particular evidence coming from Northamptonshire (cf. Condron 1997; Kidd 2004). By Norton Disney villa, from land east of Folly Lane, a large collection of iron slag from fieldwalking, including items apparently from pit-furnace bases is believed to indicate large scale iron smelting (Evershed 2020, 2, 5; Lincs HER 67072; cf. Evershed 2021). A sample examined using XRF analysis resulted in a suggested Middle Iron Age date, perhaps utilizing locally sourced bog iron (McDonnell 2018; Lincs HER MLI125345; B. Garlant in correspondence with D. Knight). A ceramic tuyère was recovered from a secure Middle Iron Age context at Foxhills, Brackley, indicating use of bellows, potentially for either iron working or non-ferrous smelting (Hylton 2019, 69).

▪ Iron Artefacts. Turning to iron tools and utensils, Wilby Way, Wellingborough, produced three iron knives, an iron file fragment and an iron rod for woodworking (Bircher 2003). Northampton Road, Brackley, also in Northamptonshire, likewise produced examples of iron knives (Morris 2019, 100). Also from the Brackley Middle Iron Age agglomerated site an iron reaping-hook (for harvesting) came from the Sawmills site, and a pruning hook from Northampton Road (Morris 2019). An iron knife or sickle was recovered at Ancaster Quarry, Lincolnshire (May 1976a, fig. 69.3). (See below, this Section, for the items from the Burrough Hill hoard).

Part of a bronze scabbard and iron blade now in Wisbech Museum are amongst the earliest La Tène items from Britain (Jope 1961a; 1961b; May 1976a; Stead 2006, fig. 48). They were unearthed before the mid-nineteenth century, probably somewhere on the Lincolnshire-

Cambridgeshire border. The scabbard is decorated in early La Tène style (LT1a). It may be considered a harbinger of the nationally significant ensemble of fine Middle and Late Iron Age metalwork from the eastern part of the East Midlands.

▪ Riverine Finds. In contrast to the general infrequency of metal items from settlements of this period a series of important metalwork finds has come from the region's rivers, particularly the Witham and Trent. Items, dating to this period (or the Late Iron Age), are generally interpreted as 'votive' offerings in the style of Llyn Cerrig Bach or La Tène itself (as conventionally seen; Cunliffe 2005, 566-7). A finely decorated bronze sword scabbard plate from the Trent at Sutton belongs to this period (May 1976a, 128-9, pl. 4), as do three iron swords from the Witham, two having plain bronze scabbards and the third, an elaborately fashioned bronze scabbard mount (*ibid*., 129-30, pl. 3). Also from the Witham is an iron bladed dagger with a hilt fashioned with an anthropoid figure as a pommel, which was recovered with its bronze scabbard; May suggested a second, or possibly first, century BC date for this unusual find (*ibid*., 130, pl. 5). In addition, parts of two shields, well-known and magnificent by any measure, have been recovered: the Witham Shield (*ibid*., 130–3) and the La Tène style decorated shield boss from Ratcliffe-on-Trent (Watkin *et al*. 1996). Collectively these pieces add much to our understanding of Iron Age Britain at a series of levels – in terms of technology, art and cultural practice – and are of international significance. It is likely that further items will be forthcoming from these rivers in future years.

▪ Structured deposits. Many of these riverine finds are 'old' discoveries (May 1976a), although a more recent important collection of martial finds and tools was recovered at Fiskerton, east of Lincoln (Lincs HER MLI52904; Field and Parker Pearson 2003). The iron tools from the site were analysed and reported by Fell, with attention to the technology of the iron working (Fell 2003). At Fiskerton a wooden causeway, dating no earlier than *c*. 600 BC and maintained for more than a century, had been constructed perpendicular to the river Witham, traversing boggy ground to the river front. It has conventionally been understood as having had a ceremonial function associated with object sacrifice into a watery context (cf. Section 8.2).

A terrestrial hoard came to light in 2013 during the excavations at Burrough Hill, including copper alloy fittings for a chariot or 'cart' and three iron tools, recovered from a pit dating from the later Middle Iron Age (Farley *et al*. 2017). Also from Leicestershire, at Glenfield Park by the M1, a later Middle Iron Age sword and eleven or more copper alloy cauldrons were recovered, the latter thought to date to the fourth and/or third century BC, some interpreted as placed in an act of closure (Thomas 2018). Traces of sooting and patch repair through riveting had occurred with some of these vessels, which are testimony to communal eating events. Such finds, as documented here, have great potential for insight into many aspects of life in later prehistory, not least because they are often complete or largely so and in a relatively good state of preservation. Similar items may come to light at any moment, during controlled archaeological fieldwork, or as chance discoveries. However found, such items have the power to enthral, excite and animate the

public, and stimulate the imagination of the archaeological community as media releases demonstrate.

▪ Lead Artefacts. Two lead artefacts that seemingly date to the Middle or Late Iron Age were recovered from deposits suggesting very deliberate selection and actions. At Great Houghton, Northamptonshire, the skeleton of a bound and trussed female of c. 30-40 years of age was found with a torc-like neck ring of lead with high tin content, which would have given the impression of silver; the nature of the burial – placed by radiocarbon to a centre date of 390 cal. BC -- suggested deliberate, perhaps ceremonial, actions (Chapman 2001). From Gardom's Edge a pit located at the centre of House 2 in its final phase was found to contain a centrally placed decorated lead terminal from a neck ring or armlet that had been deliberately chopped through to terminate its use; a radiocarbon date of c. 350 cal. BC to 10 cal. AD obtained from the site was suggested as likely for this item (Beswick 2017c).

▪ Brooches. Bow brooches were adopted in this period and although they are comparatively rare finds (Willis 1997) the wearing of such brooches was an important marker of the Middle Iron Age, as this era is defined for the East Midlands. Amongst the earliest brooches from the region is an example from Dragonby, North Lincolnshire. This comprised the lower bow and foot of a copper alloy brooch of La Tène I type for which May (1976a, 125; 1996) suggested a date in the fifth century BC, whereas Hull and Hawkes (1987, 110) preferred a date in the fourth century BC. Either way, there is no evidence of occupation or activity at Dragonby at this time (May 1996) and whichever of the proposed dates is taken this item should not date before 450 BC.

An iron brooch was recovered from Burrough Hill (Thomas 1960, 52; presumably the La Tène I variant illustrated by Challis and Harding (1975 ii, fig. 11 no.1)) and is probably an example of Hull and Hawkes' Type 1C (Taylor *et al*. 2012, 90-2). An iron involuted brooch dated as mid-third to early second century BC was recovered during the fieldwork at Glenfield Park, associated with the main cluster of cauldrons (Thomas 2018). A copper alloy brooch of La Tène I affinity came from Ancaster Quarry (May 1976a, 140, fig. 69.1), together with a long iron involuted brooch of Middle Iron Age affinity (*ibid*., fig. 69.2). An early La Tène II iron brooch, dated approximately to the third century BC is recorded from Market Deeping (Lincolnshire HER). A La Tène style brooch with coral mounting was recovered from a cave at Harborough Rocks (Derbyshire HER), seemingly more likely to date to the Middle than the Late Iron Age (Smith 1909, fig. 4). One of the best known Iron Age brooches from the East Midlands is the 'bird brooch' from Red Hill, Ratcliffe-on-Soar (Hawkes and Jacobsthal 1945). This is an involuted type and has been suggested to date to the fourth century BC (Elsdon 1982, 24) though such a date seems curiously early (pers. comm. Colin Haselgrove). The general vicinity of its find-spot seems to have been a place of special meaning or status throughout the later prehistoric and Roman periods.

4.5.2 Pottery

The Middle Iron Age was a long era and as noted above is as much a cultural phenomenon as

a chronological era: one of continuities and transition. It is marked ceramically with both typological conservatism and some change (cf. Elsdon 1996).

At Barton-upon-Humber several near complete handmade vessels of simple form were recovered, with C14 dates suggesting the majority of the pottery dates to the Middle Iron Age (Rowlandson 2011). The majority of the pottery was tempered with fragments of locally sourced erratic rock or with mixes of shell and grog, with some 'sandy fabrics'. The forms and erratic tempering are known from vessels from East Yorkshire (Rigby 2004) and elsewhere on the Humber estuary (Willis 1993, 83; Challis and Harding 1975). For Rowlandson this assemblage served to confirm that some forms dated to the earlier first millennium BC (cf. Rigby 2004) may have continued to be produced into the second half of the millennium.

A major regional tradition spanning the Middle Iron Age in much of the East Midlands is the so-called Scored ware pottery style. An early characterization of this ceramic style was forwarded by Cunliffe, as he sought to plot the various regional and sub-regional choices in ceramic typology across Iron Age Britain on the basis of information available at the end of the 1960s and early 1970s. He selected pottery from two assemblages as 'type-sites', terming this the Ancaster–Breedon group (Cunliffe 1974; 2005, 109-11). Thereafter this was employed as a useful identifying label and the term became a common descriptor for this style. An important contribution to the study of this tradition was published by Sheila Elsdon (Elsdon 1992a; see also Willis 1993, 68-75), with site reports from the mid-1990s onwards adding to knowledge. Neither of these convenient labels, namely 'Ancaster-Breedon style' or 'Scored ware', fully encompasses the typological range now known; for instance, vessels that by fabric and form etc. can be categorized as of the 'Scored ware' tradition are not always scored. Be that as it may, pottery of this tradition is widely reported across the south and east of the region, particularly from sites in Leicestershire, Nottinghamshire and southern/central Lincolnshire (e.g. Speed 2010). Important assemblages of this general date come from Wanlip, Beaumont Leys and Humberstone in Leicestershire (Marsden 1998b; 2011). At Manor Farm, Humberstone, Marsden reported patterning in the contextual and spatial discard of the pottery (Marsden 2011).

In addition, two sub-regional decorated traditions copy La Tène style ornamental patterns: the Dragonby–Sleaford tradition (Willis 1993, 75-8; 1998; Elsdon 1997; Elsdon and May 1996), and the Northamptonshire group (cf. Jackson and Dix 1987). All these wares are considered by Knight (2002). The Dragonby–Sleaford tradition probably dates from the late Middle Iron Age whereas the Northamptonshire group may have earlier origins.

An intriguing find at Polwell Lane, Barton Seagrave, Northamptonshire, was apparent pottery manufacturing debris and a part 'failed' load dated to the Middle Iron Age. The pottery manufacturing debris took the form of lumps of shelly clay smoothed and heated on one side, probably structural material, and was in a pit with evident refiring activity (Simmonds and Walker 2014, 19-20, fig. 11). Alongside this feature was a pit with large carefully placed sherds from four storage jar wasters from at least a part failed firing

(Chapman 2014, 42, fig. 27)

4.5.3 Rotary Querns

From the Middle Iron Age into the Roman period rotary querns can be conspicuous finds. In the East Midlands rotary querns come to largely replace the saddle shaped querns that had evidently been employed to extract flours from grains in the Bronze Age and earlier Iron Age. Rotary querns (which were likely to have been oscillated back and forth via a handle rather than turned 360°) enabled grains to be processed for flour much more rapidly than did use of saddle querns. Saddle querns do not necessarily disappear entirely as such rubbing stones could be utilized for other processes, though as site-finds they may occur as residual items if there had been earlier activity on a site (cf. Speed 2010, 63). Some stones used as saddle querns seem likely to have been deliberately selected and there was probably some trade and exchange of suitable stones such as fine-grained igneous items and sandstones, though many look to be adopted fieldstones or apt stones recovered from local glacial deposits.

The main sources of Iron Age rotary querns in the East Midlands include Millstone Grit from the southern Pennines and Peak District, Red Sandstones from Nottinghamshire and Leicestershire, and Spilsby Sandstone from the northern Wolds escarpment of Lincolnshire, together with igneous rock from the Charnwood Forest area and elsewhere in Leicestershire, and occasional imports of Puddingstone (Conglomerate). A fragment from a quern fashioned from gneiss was recovered from an Iron Age roundhouse eaves-drip gully terminal by Allen Archaeology at the Able Logistics/Able Marine Energy Parks development, North Killingholme (see Section 5.1.3), which is thought not to be a from a glacial boulder but represent a traded item (pers. comm. Chris Casswell).

Iron Age rotary querns of the East Midlands often have a beehive shape to the upper stone but when recovered as fragments these items can be undiagnostic of specific shape, especially when worn; moreover, fragments from rotary querns were often reused as abraders or sharpening stones for metal and so can have additional worn surfaces from this repurposing. A key site in the early study of querns in the East Midland and more widely in Britain was Hunsbury hillfort in Northamptonshire (Ingle 1994). Important for regional studies is Ingle's thesis research (Ingle 1989) and Wright's report on the querns from Dragonby, North Lincolnshire (Wright 1996).

Turning the focus more towards chronology, Covert Farm, Crick, in Northamptonshire, produced 13 quern stones, comprising four saddle querns and nine rotary querns, including beehive forms; these were mainly of Millstone Grit (Bevan and Ixer 2015). This was said to be a large group (Hughes and Woodward 2015) but given that the site had extensive occupation over 12 hectares for *c.* 500 years the tally seems particularly modest (and the figure may be compared with the 150 quernstones known from Hunsbury hillfort, mostly recovered during salvage work in advance of quarrying in the later 19th century). Whilst the numbers are small

it may be relevant that three of the saddle querns came from Middle Iron Age features (the other example was unstratified) with no saddle quern examples amongst the five querns from Late Iron Age deposits (Bevan and Ixer 2015, table WS2).

Even in the Middle Iron Age saddle querns are apparently generally infrequent finds (cf. Section 3.6). At Coventry Road, Hinckley, the Middle Iron Age site dated to approximately the third century BC, produced one quern, being a saddle quern fashioned from granite (Chapman 2004b). At Foxhills, Brackley, only saddle querns were recovered, consistent with the picture at the adjacent Sawmills site, with both sites dating mainly to the earlier Middle Iron Age (Chapman 2019). In discussing the absence of rotary querns Chapman notes radiocarbon dating evidence suggesting an introduction for the rotary quern between *c.* 300-200 BC and earlier dates suggested by thermoluminescence (cf. Heslop 2008). On the evidence from the Brackley sites Chapman concluded that their appearance in the region dated no earlier than 250-200 BC (Chapman 2019, 68). The extensively explored Middle to Late Iron Age site at Leicester Road, Melton Mowbray, curiously, produced only two small saddle querns (perhaps too small for cereal processing), and no rotary querns (Huddart and Allen 2021). A similar presence of saddle querns and absence of rotary querns was noted at Glenfield Park in the same county (Thomas 2018, 18).

Beehive querns of Hunsbury type have a wide distribution in Leicestershire, as shown by Liddle's map which is now forty years old (Liddle 1982, 22, fig. 17; Clay 2000); a large proportion of these finds are likely to be of Iron Age date rather than Roman. (The characteristics of the Hunsbury class have been documented by Ingle: the upper stone is of conical form with a flat top, occasionally displaying a moulded rim to the hopper; the latter is typically cup-shaped (7-15 cm in diameter, 7-12 cm in depth), and normally they have a single-handle with the socket piercing the base of the hopper, though some have two handle sockets, for 'team' oscillation (Ingle 1994, 25)). Some 40 examples are known from the Iron Age site at Breedon Hill. Other examples from the county include a beehive quern in Millstone Grit and of Hunsbury form type recovered from an Iron Age ditch fill at Mill Lane, Earl Shilton, Leicestershire, where it is ascribed a Late Iron Age or Middle to Late Iron Age date (Thomas 2011b), and two complete upper and lower stone querns from the 1960s excavations at Burrough Hill in the county (Cooper *et al.* 2012, 94-6) together with more recent finds from the site (Thomas and Taylor 2015). Another example in Millstone Grit was recovered from the Late Iron Age trackway surface at Overstone Park, Market Harborough (Guy and Leslie 2020b, 2). Leahy reports an example from Ashby-de-la-Zouch in Leicester Museum (Leahy 1979, 57). By contrast a more modest corpus of beehive querns is recorded for Derbyshire, particularly from the eastern margins of the Peak District (cf. Bevan 2000, 148, fig. 2). It is likely that arable cultivation continued in the valleys and favourable upland pockets of the Peak region during this period; the occurrence of querns is an indirect indicator of this probability. Further Derbyshire finds are reported from Willington and Swarkestone (Leahy 1979), with a complete example (of an upper stone, in millstone grit) from Midway, Derbyshire (Leahy 1979, fig 4). See also Sections 4.6 and 8.4.

4.5.4 Other Artefact Categories

As with the preceding periods Middle Iron Age artefacts other than pottery are generally infrequent finds, despite the increased traces of activity and greater deposit accumulation seen in this period. Even at the site of Foxhills, Brackley, where extensive remains were found and sampling was concerted the range of artefacts recovered was limited, though the items are instructive, including a glass bead and a shard thought to be from a glass vessel – and if so a remarkable item, if not intrusive (Hylton 2019). A copper alloy segmented ring thought to be a dress fitting and sections from two copper alloy armlets were recovered, one from a Middle Iron Age context and the other from 'subsoil' (Hylton 2019). A possible iron awl for leather working was also found. Two glass beads were forthcoming from the settlement at Ancaster Quarry, one in pale green glass, the other blue with pale wavy lines having Iron Age parallels (May 1976a, 140, fig. 69.4). A glass bead was recovered during the 2010-14 work at Burrough Hill (pers. comm. John Thomas).

A shield made from bark was excavated at Soar Valley Way, Enderby, Leicestershire, in 2015; dated by C14 to *c.* 395-345 cal. BC it was constructed from composite layering of bark, with a central boss made of coiled and stitched nettle fibre, with a wooden handle detached (Kipling 2016; Kipling and Beamish 2018). The shield had been damaged prior to deposition probably by spear holes. The find sheds significant light on technology in the Middle Iron Age, while it was established that the shield would have offered an effective means of personal defence.

A copper alloy terminal of the type known as a 'horn cap' was recovered from near the end of an enclosure ditch at Glenfield Park (Thomas 2018), with another example known from Wormhill, Derbyshire (Fitzpatrick 2022, table 1). This class of artefact is attested somewhat more frequently from southern Britain but mould fragments from Weelsby Avenue, Grimsby, show manufacture occurred in the East Midlands for what Fitzpatrick has suggested were the handle ends of goads for driving horses attached to vehicles (Fitzpatrick 2022).

4.6 Agriculture

There is in the Middle Iron Age clearer evidence of an organized, cultivated and accessed landscape than in the preceding periods in the form of field systems and trackways. The evidence for this is strong in many locations, for instance, in the Trent valley (Knight 2007; Knight and Elliott 2008). Establishing the chronology of boundaries and field systems largely identified by aerial photography and geophysical survey is, of course, problematic. In some instances, however, these systems have been examined alongside settlement sites (and in some rare cases supported by pollen sampling), whereby Middle Iron Age origins are apparent, or a Middle Iron Age date has been deduced from absolute dating, artefact associations and/or stratified sequences. Many of these landscapes show strong continuity and evolution through the Late Iron Age and into the Roman period. Of course, Late Iron Age and Roman period systems are more readily detected, not least since they

were probably more numerous.

A significant aspect of the evidence for this period, as noted for the Late Bronze Age and Early Iron Age, remains the typically low levels of charred plant material recovered by sampling and the low frequency of charred cereal grains; this is despite the strong likelihood that cereal cultivation was expanding. This low level of carbonization may simply mean that crops were being processed away from areas where charring may occur, that care was being exercised and/or that chaff etc. was not being used for kindling.

Considering firstly the evidence from Northamptonshire, land boundaries, field systems and trackways of Middle Iron Age date are well documented in the county, through both survey and excavation. Relevant sites in this respect are Weekley (Jackson and Dix 1987), Wollaston (Meadows 1995; 1996) and Courteenhall (Ovenden-Wilson 1997; Thomas 1998). At Wollaston, land divisions apparently initiated in the Early Iron Age developed in the Middle Iron Age with ancillary and settlement enclosures appearing within the established landscape system. Meadows (1995; 1996) has argued that this development was connected with a shift from pastoral to mixed agriculture (arable and pastoral). Unsurprisingly the fullest data for these agricultural landscapes comes from areas of permeable subsoil, productive of cropmarks and also subject to the quarrying of aggregates. Kidd, however, noted that presumed Middle Iron Age enclosures and landscape systems are also known on non-permeable subsoils in Northamptonshire (Kidd 2000), as, for instance, at Brigstock (Foster 1988).

Querns may be an index of crop raising, or more precisely, processing but the relationship is not straightforward, as noted elsewhere in this Assessment. At Wilby Way, Wellingborough, despite being a location of relatively intense and extensive activity during the Middle Iron Age, the site has only one reported quernstone (a saddle quern). On the other hand all environmental samples from the site yielded at least some spelt or emmer grains, while close study of the pottery found that vessel sizes were increasing with time, a trend interpreted as suggesting this was to effect more food storage capacity, perhaps centralized, and maybe related to cereal storage in particular; further, Hunsbury was noted to have a similar ceramic pattern (Thomas and Enright 2003). At Wilby Way crops appear not to have been processed immediately following harvest. Given the location in the Nene Valley where clearance had occurred prior to the Iron Age, grazing land was likely to have been plentiful for livestock (Thomas and Enright 2003), though competition for grazing land may have been an increasing factor over time (cf. Knight 2007).

At Polwell Lane, Barton Seagrave, Northamptonshire, the Middle Iron Age saw raising of sheep as central to the mixed farming economy, but by the Late Iron Age cattle were to become the more important livestock (Simmonds and Walker 2014, 22). Maltby noted that at King's Sutton the horses were relatively small but nonetheless all bigger than those from the broadly contemporary site at Wilby Way, Wellingborough. This led him to speculate that they were from different breeds, despite the close geography of these sites (Maltby 2017). At King's Sutton there is some evidence horse meat was being consumed, with the

economy quite likely to have been particularly focused on raising cattle, though the evidence is limited (Maltby 2017).

At Covert Farm, Crick, Northamptonshire, on the western fringe of the region, contexts yielded spelt, plus some emmer and barley; by the later Middle Iron Age there is greater production of cereals here than at other Midland sites (Monckton 2015, 280). The site at Main Road, north-west of Crick, in the Middle Iron Age practiced mixed farming (Mudd *et al*. 2017). Elsewhere in Northamptonshire, during the Middle Iron Age, the agricultural economy at Foxhills, Brackley, was also one of mixed farming (Morris 2019). Cattle and sheep raising was evident from faunal remains and from the discovery of enclosures interpreted as pens, corrals and paddocks. Overall, it was argued that the economy was predominantly based on grain production. Not uncommonly for the period, although charred cereal remains were recovered in every sample (including the roundhouse related contexts), they were often few in number and not well-preserved; wheat (Triticum sp.) and hulled barley (Hordeum sp.) were the most frequent grains (Hunter Dowse 2019). No field system was certainly associated with the occupation. A marked characteristic of this site are its grain storage features. Some 160 pits were recorded, interpreted as having a grain storage function, representing large potential capacity even considering they were not all extant and in use at the same time. Yet at the adjacent sites of Northampton Road and Radstone Fields there were even greater numbers of storage pits (see Table 6). These were broadly of early Middle Iron Age date. Over 80 four and six post structures interpreted as granaries were the predominant storage method in the late Middle Iron Age at Foxhills (Morris 2019). However, just eight saddle querns were recovered making for an interesting ratio of querns to storage capacity. Similarly, the open settlement at Polwell Lane, Barton Seagrave, Northamptonshire, during its Middle Iron Age phase had numerous (shallow) pits seemingly for grain storage (Simmonds and Walker 2014, 15-9, fig. 8). David Knight (pers. comm.) has suggested that there might be a tendency to jump too promptly to see these pits as to do solely with grain storage.

[Table 6 Here]

Midland clays have been less revealing of landscape organizational features as they are less conducive to the generation of cropmarks. However, Clay has discussed the growing evidence for agricultural landscapes in Leicestershire, Rutland and beyond in such environs (Clay 1989; 1996; 2001). Agricultural landscape features on boulder clay and mixed geology dating from late in the Middle Iron Age are recorded at Normanton le Heath in north-east Leicestershire (Thorpe *et al*. 1994). Livestock raising was evidently important for the site economy too at Beaumont Leys, in Leicestershire. The site was located on a boulder clay ridge and near the Rotheley Brook and tributaries of the Soar, a landscape which should have provided significant grazing potential and represented a setting more suited to pastoralism than arable farming (Browning 2011b).

In terms of agricultural use though the pattern in Leicestershire and Rutland is patchy and varied, probably reflecting local circumstances at the time. At Stamford Road, Oakham, a

waterlogged deposit dated from charcoal to between 190 cal. BC - 5 cal. AD (at 95%) suggests an open landscape with cereal pollen present throughout the whole profile, while some indication of nearby pasture is witnessed, on the basis of the insect assemblage (Greig *et al*. 1999). At Soar Valley Way, Enderby, insect remains indicated open grassland in this period with ample dung suggesting cattle and/or horse grazing at these environs near the Soar (Hill and Smith 2018). On the other hand, the evidence for an agricultural landscape around the site at Wanlip is limited, with few detectable cropmark features (Beamish 1998, 2). From deposits of Middle Iron Age date at this site spelt, plus a some emmer and bread wheat type grains were present, together with hulled six-row barley; typically for this period, quantities were small, with pits proving the most productive contexts (Monckton 1998b). Legumes (possibly beans) were also consumed, together with gathered foods (hazelnuts and sloes). A small number of querns of both saddle and rotary type came from a structured deposit (Marsden 1998a). At Wanlip bone did not survive, although as generally in the region, a mixed agricultural economy is likely (cf. Beamish 1998, 42). At Middle Iron Age Elms Farm, Humberstone, on the outskirts of Leicester, mixed agriculture was practiced; spelt was the main cereal, with a little possible emmer, and hulled four- or six-row barley as a second cereal; a small quantity of hazelnut shell was indicative of 'wild' resources (Pelling 2000) although this is as likely to have been gathered from coppiced/managed stands as from unmanaged areas.

Valuable cropmark evidence for Lincolnshire became available through the national mapping programme that was undertaken some thirty years ago, enhancing a long history of aerial photography in the county (Bewley 1998). It is probable that mixed farming was undertaken at the Ancaster Quarry site as both wheat and barley were recovered, together with a series of saddle and rotary querns (May 1976a). According to May (*ibid*., 137) sheep were the most numerous animal; cattle were also comparatively well-represented, ages at death indicating that these animals were used for meat, with a proportion presumably employed for traction; horses the size of ponies were also present. Large quantities of animal bone, including sheep, cattle and horses are reported from the Weelsby Avenue enclosure during its Middle Iron Age phase, together with a fragment of rotary quern (see references above). At Helpringham Fen, southern Lincolnshire, fragments of rotary quern were recovered; amongst the small faunal assemblage sheep predominated, followed by cattle; pig and horse were also represented. Butchered animal bone was also recovered at Cowbit (Albarella 2001). At Tattershall Thorpe the large low-lying double enclosure, potentially serving as a stock management compound, produced little animal bone and this was in poor condition due to soil acidity (Chowne *et al*. 1986; Seager Smith 1998).There and elsewhere the evidence points to stock rearing occurring alongside salt making in and around the Fen margins, two activities which were likely to be complementary, if meat products were preserved by salting.

In North Lincolnshire pollen sampling undertaken at Crosby Warren and (during the excavations) at Dragonby (Holland 1975; Hayes 1996) provide comparatively rare pollen datasets. These samples, which showed an on-site (i.e. at the Dragonby excavations) and off-site (at Crosby Warren) correlation, were valuable evidence used for establishing the environment

around Dragonby, being an important reference point for the writing up of that site (May 1996). The earliest pollen phase at Crosby Warren dated to the time of the establishment of the Dragonby site and had been calibrated to 710-210 BC (Holland 1975; May 1976a, 188; 1996), indicating a progression from hazel scrub giving way to mixed oak woodland followed by a period of clearance. Hayes' study of samples collected from fortuitously suitable waterlogged archaeological features at the site demonstrated an environment of intense mixed agriculture during the second and first centuries BC (Hayes 1996).

Overall, the faunal assemblages are consistent with those from parts of lowland eastern England (cf. Hambleton 2009). Generally the Middle Iron Age is seen as the era when extensive arable production accelerates significantly with the conventional view that this produced high yields that sustained population growth (cf. Section 1.4.1). Wild animals, including, notably, wild fowl, and fish were evidently not consumed with any regularity, even where the environs may have presented such options (Dobney and Ervynck 2007). Bulk soil samples taken at sites to recover environmental remains are routine but fish bones are essentially absent from such samples of Iron Age date across most of Britain. (Whether this is a function of sampling procedures remains unclear). This lies in contrast with the fact that 24 basketwork fish traps were recovered during the work at the exceptionally well-preserved site of Must Farm in Cambridgeshire dating to the later Bronze Age (Marchini 2017). These traps were probably employed to catch eels, the bones of which are particularly fine and may not always survive well in archaeological deposits. A crane was represented amongst the bones from Hallam Fields, Birstall, Leicestershire, and it may have been targeted for its feathers (Speed 2010, 61).

5. The Late Iron Age *c.* 100 BC–AD 43

A series of changes, an acceleration of processes and new introductions occur through the period as the record becomes fuller and more diverse. Settlement types show initial continuities into the Late Iron Age but broadly agglomerated sites are generally in decline as new configurations emerge. The Late Iron Age sees elaborate pottery forms, some wheel-made, make their debut in some places, whilst metalworking evolves, including the emergence of new brooch forms. Coinage becomes prominent in the south and east of the region. Torcs, while rare, are a feature of this period for the East Midlands, alongside East Anglia.

AD 43 is taken as the cut-off point for the end of the Late Iron Age in southern and central England by convention as this is the date of the Roman invasion under Claudius. Whilst in the south-east political change was sudden, in the East Midland counties the realignment to practices and forms of expression in step with Roman norms took decades to unfold, with the roundhouse traditional continuing in some locations into the second century AD (as at Goltho, Lincolnshire: Beresford 1987) with pottery styles also slow to change (e.g. Darling and Jones 1988).

5.1 Settlement Evidence

Settlement types do not radically alter from trends seen in the Middle Iron Age during the earlier part of the Late Iron Age, but rather developments continue. Nonetheless, the settlement record and material culture, as well as evidence for activities and deposition in general around settlements, become more visible through this period.

5.1.1 Visibility and Frequency

Across most of the region the Late Iron Age sees more evidence for settlement and land use than in the preceding centuries. The Leicestershire and Rutland HER, for example, already listed over 220 locations of later Iron Age occupation by 2003. Settlement is more identifiable for this period through more readily discernible traces via cropmarks (Pickering and Hartley 1985; Hartley 1989), chronologically diagnostic artefact scatters and other surface survey work, plus excavation. Densities of one Late Iron Age farmstead/enclosure per 1.8-2 sq km can be deduced in well-surveyed areas of Leicestershire and Rutland (Clay 2001; 2002, 81; cf. Clay 1996; cf. Network Archaeology Ltd 1999). Such frequencies mirror patterns in other areas of Britain, for instance, the Upper Thames valley (Hingley and Miles 1984) and the Tees valley (Still *et al*. 1989). During this period the majority of farmstead sites seem to have been enclosed by ditches, whether they had unenclosed origins or not, assisting visibility.

5.1.2 Continuity and Development

A trend of continuity is apparent, with many settlements which originated in the Middle Iron Age continuing to be occupied into the Late Iron Age. This was evidently the case in Northamptonshire, as, for instance, at Covert Farm, Crick (Hughes 1998; Hughes and Woodward 2015) and Kings Heath, Northampton (Shaw *et al*. 1990). Elsewhere, other cases include Burrough Hill, Leicestershire (Thomas 1960; Brown and Simpson 1968; Liddle 1982; Thomas and Taylor 2015), Elms Farm and Manor Farm, Humberstone (Charles *et al*. 2000; Thomas 2011a), and Sleaford, albeit in an adjacent area (Elsdon 1997). That said, the picture is not straight forward as some sites where there is continuation had their main floruits within the Middle Iron Age and subsequent occupation is less intense or extensive; Covert Farm, Crick and Humberstone were in decline in the Late Iron Age.

Settlement enclosures making their debut during the Late Iron Age such as Clay Lane (Windell 1983) and Enderby, Enclosure I (see below) seem to follow Middle Iron Age traditions. Similarly, landscapes were not so-much re-ordered, rather existing boundaries and divisions were developed and 'filled in' (cf. Kidd 2000). Continuity is not, however, universal: neither the Wanlip nor Ancaster Quarry sites continued into the Late Iron Age, whilst Weelsby Avenue, Grimsby, became a different type of site and agglomerated sites such as Covert Farm, Crick, diminished in size from a Middle Iron Age heyday.

5.1.3 'Farmstead' Enclosures and Settlement in the Landscape

By the later Iron Age the commonest type of site appears to have been the farmstead, placed within a distinct enclosure and part of a managed landscape/field system (cf.

Jones 1988; Parry 2006, 61). Certainly enclosure was becoming more normal, as for instance, at Polwell Lane, Barton Seagrave, Northamptonshire, where a Middle Iron Age settlement, at first unenclosed, continues into the Late Iron Age and early first century AD with enclosure (Simmonds and Walker 2014). Enclosure 1 at Navenby, Lincolnshire (Palmer-Brown 1994; Palmer-Brown and Rylatt 2011, chapter 2), is a 'classic' sub-rectangular ditched enclosure containing circular structures; nonetheless this is an element of a wider system of land management features. On the other hand, the farmstead at Normanton le Heath, Leicestershire, during its early phase, appears not to have lain within a discrete defining enclosure, but to have been placed within a field system (cf. Hingley 1984, 74; Thorpe *et al*. 1994, 30; Willis 1997). This need not indicate an emphasis on livestock farming. Similarly, the partially excavated Late Iron Age farmstead at Aylesby (Steedman and Foreman 1995), which lies just within North-East Lincolnshire on the Lincolnshire Marsh, seems to be placed within an agricultural landscape rather than to occupy its own enclosure.

At North Killingholme, North-East Lincolnshire, extensive investigation between 2013 and 2015 by Allen Archaeology, engendered by the Able Logistics Park (ALP) and Able Marine Energy Park (AMEP) developments, together with other interventions, established that the whole of the Humber bank hereabouts appears to have been occupied and in use by the Late Iron Age, with occupation continuing into the Roman era (North Lincs HER SLS7523; pers. comm. Chris Casswell; Allen Archaeology 2019). Grazing of cattle and sheep was likely to have been a major element of the economy, possibly on a seasonal basis. Late Iron Age enclosures were excavated along with roundhouses: at the AMEP 1 site a Late Iron Age D-shaped enclosure, with a rectangular enclosure added to the south, was examined along with eaves-drip gullies; at the AMEP 3 site roundhouses had an internal diameter within the eaves–drip of 10 m; at the AMEP 4 site ring gullies were recorded and one well-preserved example had a diameter of 6 m; at ALP 1 a line of ring gullies appears to represent an unenclosed Late Iron Age settlement while at the ALP 3 site a square enclosure with circular structures was reminiscent of the site at Weelsby Avenue, Grimsby (Section 4.2), in its initial phase (pers. comm. Chris Casswell; Allen Archaeology 2019). A further site in North Killingholme was investigated in advance of cable laying in 2016 by Wessex Archaeology, with a further square ditched enclosure (c. 50 m by 50 m) dated to the Iron Age containing two curvilinear features indicative of eaves-drip gullies for roundhouses (one 11 m in diameter), with the enclosure ditch yielding pottery, animal bone and fired clay; evidence for a possible palisade or fence interior of the ditch was recorded and conceivably this may have been the original form of enclosure boundary, replaced by a ditch and bank (Rajic *et al*. 2016; Dabill 2017). South of the previous site but still within North Killingholme parish a ditched complex found during the same development showed several phases of Middle to Late Iron Age date with possible structural evidence, and is thought to represent enclosures constructed for the corralling of stock etc. (Rajic and O'Neil 2016). Another settlement site with remains of likely eaves-drip gullies and other settlement features was examined straddling North and South Killingholme parishes as part of the same development. Here concentric ring gullies indicate a likely large roundhouse (inner gully 10 m in diameter), succeeded by a second phase certainly Late Iron Age (also with a ring gully 6 m in diameter) as the site develops,

with settlement continuity, into the Roman era (Batchelor and O'Neil 2016). Nearby, in Immingham parish, excavation work as part of the same development revealed a curvilinear, likely eaves-drip, gully and ditch complex of Iron Age date (Bromage and O'Neil 2017). Further characterization of these sites is anticipated once the finds and samples for environmental analysis have been processed and reported. This fairly recent expansion of evidence transforms understanding of the period in this area of Lincolnshire where hitherto, with the exception of Weelsby Avenue, there was almost a complete blank for stratified archaeology, as reference to the Loughlin and Miller gazetteer demonstrates (Loughlin and Miller 1979).

Further south, beyond Grimsby, but also on the Lincolnshire Marsh, work associated with cable laying in the parish of Holton le Clay, revealed a sequence of evident roundhouse eaves-drip gullies and other features indicative of settlement, with associated pottery; this is ascribed broadly to the later prehistoric period prior to detailed examination of the finds assemblage but appears to show a comparatively long-lived occupation site probably of Middle or Late Iron Age date (Maier 2017), in an area where few sites are known of first millennium BC date. This site adds to the otherwise comparatively sparse recorded evidence of settlement and activity on the Lincolnshire Marsh during the first millennium BC. Sites such as Weelsby Avenue, Grimsby, and Aylesby, near Laceby, have been known for some while but away from the development of the Humber Bank north of Grimsby (cf. above) few interventions have occurred other than pipeline related monitoring. The identification and investigation of these Iron Age sites is significant given that the Marsh, east of the Lincolnshire Wolds, is hitherto under-explored. The landscape hereabouts has proved less conducive to the generation of cropmarks, with aerial reconnaissance frustrated by geology, cover deposits, reclamation and ridge and furrow. The evidence so far, along with that of salt-making (cf. Section 8.8), demonstrates occupation and use of this sub-region bordering the North Sea at least from the Middle Iron Age. Significant new findings have been forthcoming through work in advance of the Covenham to Boston pipeline, which suggest that on the Lincolnshire Marsh and south-eastern Wolds ditched enclosure was more common through the later Iron Age. Ditched enclosures were recorded at North and South Cockerington on the Marsh (sites D3 and D5), with the latter showing more regular organization than seen in the Middle Iron Age (Bush forthcoming). At Authorpe (site H1), on the eastern edge of the Wolds, part of an apparently sub-rectilinear ditched enclosure was encountered measuring 35 m by at least 20 m internally, with the edging ditch *c.* 3 m wide; this had an entrance on the north side (Bush forthcoming). Bush draws parallel to the Wootton Hill style enclosures of Northamptonshire (Section 5.1.5) with which it may be contemporary. One circular structure was recorded within the enclosure, being 10 m in diameter, but may predate the enclosure; the entrance was to the north-east (Bush forthcoming). Work ahead of the construction of the Partney Bypass, on the south-east Wolds revealed evidence for three 'farmstead' enclosures seemingly established in the later Middle Iron Age including two of sub-rectangular form though internal widths varied, being 17 m, 35 m and 40 m (Atkins forthcoming). Roundhouses associated with these enclosures were between 12 m and 13.4 m in diameter; a larger circular ditched feature at 17 m in diameter internally is thought to have perhaps functioned as a stock enclosure (Atkins forthcoming).

Late Iron Age enclosures are well-attested in the Trent valley, as at Chapel Farm, Hemmington (Knight and Malone 1997; 1998), and Holme Pierrepont (O'Brien 1979). Four 'sites' were investigated on the gravel terrace at Holme Pierrepont in the 1970s; these have yet to be fully published and are not well-dated. The four 'sites' are essentially windows upon an evolving wider system of landscape use and settlement, emerging (it would seem) from the end of the Middle Iron Age. The complex is very significant in terms of the Middle Trent valley, having revealed eight circular buildings in one of the areas investigated (pers. comm. Sheila Elsdon) which is a high number for Nottinghamshire. This complex is potentially important for understanding the economy of the area, the chronology of Scored ware tradition pottery, and the landscape in the valley, as well as for comparison with more recent interventions. Since the work was conducted decades ago sampling and recovery methodology may not be comparable with present approaches, and hence the value of some results may be lessened. Elsewhere, at Hollygate Lane, Cotgrave, Nottinghamshire, geophysical surveys in advance of development over a 12 ha area suggested Iron Age and Roman occupation features including rectilinear enclosures and circular structures (Krawiec and Poole 2020, fig. 3). During evaluation work Trench 5 revealed a section of a ring gully previously observed as a geophysical anomaly; it contained eight sherds of typologically Middle Iron Age pottery (Krawiec and Poole 2020, 16). Trench 11 located the terminal of a ring gully as well as ditches (Krawiec and Poole 2020, 18). Whether these features are contemporary with the enclosures will only be clear from further work. Overall, several sherds of Mid-Late Iron Age tradition pottery were recovered from the evaluation works, alongside sherds of Transitional type, *c.* AD 1-70 (Evans 2020a). Evans thought the date emphasis was later Iron Age with the pottery 'probably no earlier than the 1st century BC' (Evans 2020a, 25-6).

At Market Harborough, Leicestershire, excavations at Overstone Park on the south-east side of the town examined an area of *c.* 10 ha (Guy and Leslie 2020a; 2020b). The earliest settlement activity was Late Iron Age, dated from *c.* 100 BC, including a boundary ditch defining the north side of the settlement. Occupation continued into the Roman period. In the eastern area, south of the northern boundary ditch a large enclosure (c. 0.5ha in area) contained a roundhouse (*ibid*., 2020a, 2; see Section 5.3) while a number of small enclosures occurred to the south-west. A feature interpreted as a potential burnt mound with trough below was circular with a spread or 'mound' of fire-cracked stone and charcoal *c.* 0.3m in thickness. Below was a 'deep pit with a trough at its base … along with a ring of postholes' (*ibid*., 2020a, 3). It is suggested by the excavators that the clay subsoil may have retained water in the trough that was warmed by heating stones. If these remains represent a burnt mound then it would likely be of Bronze Age date, though fire-cracked pebbles occur frequently on Iron Age sites in the region and this could be, for example, a cooking pit (with trough) into which they were thrown to heat water; yet whatever the interpretation, this is a significant discovery. In the western area of the site sub-circular enclosures are thought to potentially define corrals or were designed to enclosure domestic space; they were examined together with a trackway and a likely eaves-drip gully of a roundhouse. The latter lay immediately south of the northern boundary but seems otherwise not to have been enclosed (see Section 5.3). Evidence of four post structures is reported, interpreted (in the report) as

functioning as grain stores (Guy and Leslie 2020b, 3-4). The largest enclosure in the western area was *c.* 0.25ha with an entrance to the east, with post settings suggesting a gate or similar. Small amounts of Iron Age pottery and bone were recovered (Guy and Leslie 2020a, 3; 2020b, 2). A beehive quernstone fragment of Millstone Grit came from the trackway (Guy and Leslie 2020b, 2).

5.1.4 Areas with 'Thin' Settlement Records (Lincolnshire and Derbyshire)

Areas which have seen comparatively little identification and/or investigation of Late Iron Age settlements include parts of northern, central and eastern Lincolnshire, although some evidence has come from fieldwork related to infrastructure and pipeline projects as noted above (e.g. Network Archaeology Ltd 1999). Somewhat more evidence comes from southern Lincolnshire: the unpublished enclosure and settlement complex at Mill Drove, Bourne, for example, yielded much data (pers. comm. Margaret Darling). Knowledge of settlement in Derbyshire continues to be limited into the Late Iron Age, coming particularly to date from the Trent valley at sites such as Captain's Pingle, Barrow-upon-Trent (Knight and Southgate 2001). Evidence of this period in the Peak District is sporadic; finds have been made, for instance, at Harborough Rocks and cave (Makepeace 1990). On the Mercia Mudstone in Derbyshire, at Little Hay Grange Farm, Ockbrook, Iron Age features and finds underlay a building of Roman date (Palfreyman 2001). Although the nature of this phase is not clear, the site evidently witnessed activity of some kind in this period with, perhaps, domestic occupation nearby. Ditch fills yielded a sequence of Middle and Late Iron Age pottery (Ancaster–Breedon Scored ware tradition pottery and wheel-turned Late Iron Age pottery), as well as a Nauheim (La Tène III derivative) brooch and a Corieltauvian gold stater, both stratified (Ebbins 2001). The start date of this site remains obscure. Generally, the archaeological character of the upland environments of Derbyshire are less well characterized for this period than other areas of the East Midlands, having received proportionally less attention (cf. Bevan 2000).

5.1.5 Earthwork-Enclosed Sites

Of the region's large earthwork-enclosed sites, a few have yielded evidence of use during this period. Domestic settlement (including buildings) and craft-working is known from excavations at Burrough Hill, Leicestershire, which revealed features and finds of Late Iron Age material (see above for references). 'Refortification' occurred at Crow Hill in Northamptonshire (Parry 2006), although there is a lack of evidence from other hillforts in the county, leading to the suggestion that they were abandoned – or at least not occupied – by this time (cf. Kidd 2000). Hunsbury seems likely to have remained an important site, until around the late first century BC.

On the other hand, smaller earthwork-enclosed sites where these features may have had a defensive function, are well-attested in some areas; (possibly these are the equivalent of enclosed sites in and by river valleys which have been ploughed flat). The sub-rectangular earthwork (3 ha) at Ratby Bury, Leicestershire, has produced later Iron Age material (Liddle

1982, 26). At Colsterworth, on the Lincolnshire Limestone, in south Lincolnshire, a small enclosed (possibly 'defended') settlement of 0.5 ha contained a number of circular buildings (Grimes 1961; May 1976a); Gallo-Belgic pottery was recovered. Excavated during the Second World War this significant site remains unpublished.

Elsewhere, especially in Northamptonshire, a distinctive enclosed settlement type known to have been constructed in the Late Iron Age (*c.* 25 BC to AD 50), comprises the so-called 'Wootton Hill style' enclosures. They have been characterised by Dix and Jackson (1989, 158) as, 'small enclosures, each surrounded by an exceptionally deep ditch and additionally strengthened by banks, stockades and elaborate gateways'. Sixteen examples of this monument class, confirmed or suspected, have been recorded in Northamptonshire (cf. Deegan 2007, fig. 6.14), for instance, Aldwincle (Jackson 1977), Blackthorn (Williams and McCarthy 1974), Brigstock – with surviving remnant of interior bank and metalled approach from the entrance to a roundhouse within (Jackson 1983), by Borough Hill, Daventry, where the enclosure ditch is nearly 3 m deep (Jackson 1991; Chinnock *et al.* 2020, 4) and Weekley (Jackson and Dix 1987). Wootton Hill style enclosures have also been identified in Nottinghamshire from aerial photography (Bishop 2000), but none are excavated. Whilst Dix and Jackson (1989) interpreted the morphology of these enclosures as 'defensive' it may be that these sites can be understood as simply part of a continuum in the range of forms of enclosure, and that a defensive role may not necessarily be the only or main purpose of these earthworks.

5.1.6 'Agglomerated sites', Population and 'Major Settlements'

(i) Agglomerated Sites

The majority of settlement sites in the region appear to have been farmsteads at this time, presumably consisting of family/extended family groups. Some aggregated settlements (or the more recent term agglomerated settlements), consisting of clustered but often spatially discrete enclosures and settlement/activity foci that emerged in the region in the Middle Iron Age (Section 4.2.2) continued and others emerged. The past 25 years of investigation via commercial archaeology have shown them to be more common than previously realised. Now that both broad scale geophysical surveying and strip-map-sample approaches are common, aided by aerial photography, mapping of agglomerated complexes has advanced. As noted above (4.2.2) they have been recorded in Northamptonshire, and in parts of Lincolnshire, Leicestershire and Rutland. At Navenby, Lincolnshire, for instance, a series of interventions have recovered information across a wide area, suggesting an extensive complex during the later Iron Age although insufficient to firmly establish the sequence and any spatial-functional differences (Palmer-Brown and Rylatt 2011).

The origins of the process of agglomeration and reasons for decline are unclear. In Northamptonshire the long-lived agglomerated complex at Wilby Way, Wellingborough, covering 10 ha (Enright and Thomas 1998; 1999; Thomas and Enright 2003) may have Early Iron Age origins but evidently develops through the Middle Iron Age, as does Covert Farm, Crick, *c.* 13 ha (Chapman 1995; Hughes 1998; Kidd 2004; Hughes

and Woodward 2015). The complexes at Duston (RCHME 1985, 252-7; Friendship-Taylor 1998, 148-70), and possibly Stanwick (Neal 1989) and Twywell (Jackson 1975) appear to be examples of the phenomenon dating to the Late Iron Age. The more recently investigated environs of Brackley, as noted above, show similar agglomeration, but with earlier origins, with investigated areas at Foxhills, Northampton Road, Radstone and Sawmills interpreted as contemporary clusters within a larger 'whole', of Middle Iron Age date, but in decline by end of the Middle Iron Age and discontinuing in the Late Iron Age. All four clusters seem to begin at the same time and end about the same time, with all four characterized by basic similarity, with some apparent open settlement (Morris 2019). At Leicester Road, Melton Mowbray, another agglomerated Middle to Late Iron Age complex has a village-like appearance, though here the site is enclosed and seemingly focused on livestock (cf. Section 4.2.2). Other candidates for designation as agglomerated Middle Iron Age open settlement are King's Heath, Northampton, covering *c.* 15 ha (Shaw *et al*. 1990) and Manor Farm/Elms Farm, Humberstone, Leicester (Charles *et al*. 2000; Thomas 2011a), and as noted above, Covert Farm, Crick. Such sites do not on present evidence appear common. A shared characteristic is that these complexes do not continue to develop as major foci, losing their vitality during the Late Iron Age, as seen at Humberstone, and especially at Covert Farm, Crick.

Figure 5. Interpretative plans showing suggested functional areas at the Humberstone

As Kidd (pers. comm.) has pointed out these apparently contemporary agglomerations may conceal subtle dynamics: they could be seasonal, or part-seasonal foci, as perhaps at Covert Farm, Crick, or else the product of a mobile (i.e. periodically shifting) settlement pattern, as seen with some Anglo-Saxon sites. What is less clear is whether the agglomerations are a direct indication of rising population numbers and/or a choice to live in closer communities, or whether the appearance of aggregation is exaggerated because of a particular frequency in replacing houses where house features are such that they leave clear archaeological traces (cf. Thomas 2018, 16). Roundhouses might be being replaced every 15 years rather than 30, in which case a palimpsest of house features could develop comparatively quickly: six within two generations. In any case not all structures will necessarily have been occupied domestically (see too discussion of the Humberstone site (Thomas 2011a)). These aspects have a bearing on the numbers envisaged to have lived at these sites. As they declined by or in the Late Iron Age what does this say about population and relocation?

It is not so clear what differences existed between the agglomerated sites and the intensively farmed and organized landscapes with so-called clothes-line or ladder settlements (formed by enclosures along a track or boundary where there occurs spatially intermittent occupation). These are seen, for instance, in Northamptonshire, Lincolnshire and the Trent valley (e.g. at Timberland Estate, Scunthorpe, North Lincs HER SLS3984) and which find parallel elsewhere, for example, in southern Britain and East Yorkshire (for the latter see Brewster 1980; Stoertz 1997; Halkon and Millett 1999).

(ii) 'Major Settlements' of the Late Iron Age

On current evidence agglomerated settlements with their clustered groupings of buildings and functions flourished in the Middle Iron Age. Were they succeeded by, or indeed did some develop into, the so-called 'major settlements' of the Late Iron Age? These 'major settlement' sites occur mainly in historic Lincolnshire, as at Ancaster, Dragonby, Kirmington, Ludford, Old Winteringham, Owmby, Sleaford, South Ferriby and Ulceby Cross as May characterized them (May 1976b; 1984; Jones 1998, 69-71, fig. 70), but which may include sites further afield, such as Medbourne and Thistleton in Leicestershire, Leicester, and perhaps Redcliff-North Ferriby on the north bank of the Humber (Crowther *et al*. 1990). As May stressed, it has never seemed appropriate to term these complexes *oppida* (May 1996, 624-31) since they are not of the scale of sites termed *oppida*, mostly seen in the south of England, at locations such as *Camulodunum* (Colchester) and they lack earthworks. (The earlier agglomerations such as Humberstone, Beaumont Leys and Covert Farm, Crick, are associated with linear boundaries as noted above, but not on the scale of the earthworks seen at *oppida*). These 'major settlement' sites may have parallels with the unenclosed aggregations of Late Iron Age date in eastern England more widely, such as Baldock in Hertfordshire (Fitzpatrick-Matthews and Burleigh 2007), Braughing-Puckeridge also in Hertfordshire (Partridge 1977; 1979; Potter and Trow 1988; Bryant and Niblett 1997), Heybridge in Essex (Atkinson and Preston 2015), Sandy (Bedfordshire) and perhaps Cambridge (Cambridgeshire), several of which have a strong 'ritual' focus and have produced evidence for manufacturing. May had already highlighted that these 'major settlements' of the East Midlands tended to be located by water sources or at river crossings (May 1984), while Willis pointed to the potential symbolic and ritual dimension of such places for people at the time (Willis 1997). Further, Colin Haselgrove (pers. comm.) has observed that there is something of tendency for these sites in the East Midlands and beyond to occur at interface locations, with many of them having access from the sea via inland waterways.

The 'major settlements' do have some characteristics in common with sites suggested to be *oppida*, such as the presence of clay pellet mould fragments (usually seen to be associated with coin minting), high status metal finds, imported tablewares and high numbers of coins and brooches, found over extensive areas, all implying high status. Their apparent distinctiveness may in part be a function of chronology, in particular with the presence of coins and brooches that mark the Late Iron Age horizon in this sub-region, such items making them seem more different than they are. Indeed, they also share features with less exotic complexes, in that to date they have not yielded aristocratic burials and did not become civitas centres in the Roman era, with the exception of Leicester. They also have layouts (deduced on the basis of cropmarks and other mapping) that resemble less exotic sites; recorded features at Owmby, for example, are not dissimilar from the patterns at Wollaston or Holme Pierrepont, or indeed in parts of the Vale of York (Halkon and Millett 1999) which can be classed as ladder settlements. All considered, the implication is that they were major settlements or centres in a more local or sub-regional, rather than regional, context. It needs also to be borne in mind that these so-called 'major settlements' have still to be firmly characterized with much of the evidence derived from surface collections and with little analysis of collated information. Lack of

characterization is explained by their large geographic scale, the generally limited extent of excavations and survey programmes to date, and, moreover, the paucity of modern synthesis studies. Work by May and Elsdon was pioneering and although published a quarter of a century ago largely drew on results gathered half a century ago by older methods.

The major Late Iron Age settlements of the East Midlands may have been polyfocal, with specialist functions and differing functional areas, as appears to be the case for some large-scale sites in the south-east of Britain, such as *Camulodunum* (Millett 1990; Crummy 1997), Saham Toney, Norfolk (Brown 1986) and sites in Hertfordshire (Bryant and Niblett 1997; Haselgrove and Millett 1997). Due to insufficient work, this, if true, has yet to be demonstrated for the East Midlands. Only in the case of Sleaford can a specialist economic function be inferred, in this case a role in the production and distribution of a key commodity: salt, but again this needs to be demonstrated. There is no evidence yet of a connection between these agglomerated sites and craft and industry such as iron smelting and working, as was the case with the development of Iron Age and early Roman *Ariconium*, by the Forest of Dean (Jackson 2012). It seems likely that these agglomerated, and putatively 'high status' sites were themselves embedded in the agricultural economy.

Clearly these 'major settlements', whether high status or not, existed by the early first century AD and may essentially be a Late Iron Age phenomenon. In truth our knowledge is generally limited regarding their origins, as well as their development and detailed morphology. Their sheer scale means that almost certainly they will only gradually yield details of their character as a result of piecemeal interventions and survey; even then it will be problematic to extrapolate from recovered samples, since particular interventions may well not be representative of the site as a whole. So far, the only intensively examined site is Dragonby, the start date of which is not chronologically anchored (May 1996). An origin around the turn of the first century BC seems probable, and is likely to apply to a proportion, at least, of the other sites. Sleaford shows a longer sequence of development from the Middle Iron Age into the Late Iron Age (Elsdon 1997), though this may not have been continuous.

Certainly the presence of considerable numbers of Iron Age coins and brooches at these Lincolnshire sites, largely recovered as surface finds, make them appear very different from other sites in the region, yet these finds might have more to do with religious activity and ritual deposition than be indices of chance loss or casual discard at sites of 'high status'. Their discard/deposition will relate to their final use, which may have had this ritual element, although that considered these finds are not concentrated as one would expect if they related to a shrine or shrines. If, however, they are subtracted from the picture, the record for these 'major centres' seems a degree more ordinary. Indeed, perhaps Iron Age Dragonby and Sleaford are best described as aggregated complexes with a modest level of imports. If there is a difference between these sites and other agglomerated complexes, it lies not in morphology, but probably chronology and in aspects of their material culture, access to 'prestige items', consumption patterns, and the presence of pellet mould trays, indicative of non-ferrous metal working and potentially coin minting, so suggestive of centres of

'authority'. Clay has pointed out that the hinterland settlements around Leicester have produced virtually no evidence of the exotic and 'high status' material culture consumed at Leicester during its Late Iron Age heyday (Clay 2001), though this is now nuanced by the finds from Humberstone (Thomas 2011a) and Stanwick, Northamptonshire (Parry 2006), which have produced potin and late Roman Republican coins suggesting connections to wider networks. This pattern is consistent with what one might predict following Haselgrove's 'prestige goods model' (Haselgrove 1982a): prestige goods stack up at 'centres' and are carefully disseminated. Although that model is 40 years old, this remains an argument worthy of continued consideration. This is particularly the case in the East Midlands, where the mapped incidence of imported *terra rubra* and *terra nigra* in the first century AD is consistent with what the model predicts (cf. Willis 1996; 1997), although the same pattern could arise from different factors.

Leicester and Sleaford seem qualitatively different from the other sites. Both have produced some remarkable material, that is indicative of their identity, notably imported pottery including Arretine wares, and potential evidence of Iron Age coin manufacture in the form of so-called pellet moulds fashioned from clay - no such examples being known from Dragonby - (Clay 1985a; Jarvis 1986; Clay and Pollard 1994; Gnanaratnam 2004; May 1976a, 177, fig. 88; Elsdon 1997 - where a whole chapter is devoted to the study of the recovered evidence from Sleaford). Indeed, Leicester is the only site to which the term 'nucleated centre' seems at all applicable and it is the only one of these sites to develop into a centre of status and authority in the Roman era. A density of finds and features indicates an extensive cluster of settlement and activity on the east bank of the Soar, although we have only small parts of the jigsaw (e.g. Clay and Mellor 1985; Gnanaratnam 2004). Sufficient is known of Late Iron Age and early Roman Leicester to suggest that it was an unusually important site at this formative time. Leicester is also a case of an important site developing in a valley floor, at a river crossing and so is reminiscent of the wider trend seen in Temperate Europe in the later Iron Age for major settlement location to favour main valley floors.

Away from these centres imported pottery is rare as is other material that can be taken as indicating high status (cf. Willis 1994; 1996). As Bishop (2000) notes for Nottinghamshire, there is little artefactual or settlement evidence to differentiate between settlements in the later Iron Age on grounds of status or function. This 'egalitarianism', which is also seen in Derbyshire, may be a continuation of suggested Middle Iron Age cultural norms (cf. Sharples 1991; Hill 1995a).

(iii) Population and its Correlates

The broad pattern of evidence through the first millennium BC shows the trend towards the landscape 'filling-up'. There is a transformation in the nature of the evidence and in the imprint human activity, particularly of settlement, from the 'scatters' which characterize the early first millennium to a qualitatively different signature in the later millennium where we can see, in some areas at least, continuous Iron Age landscapes - or sufficient parts of that landscape to interpolate that it is continuous. This is seen in the colonization of previously marginal lands, areas, that is, that were harder to cultivate, such as the clay lands. Their opening-up was

facilitated by the use of iron tools and implements, probably including coulters and iron ard sheaths (cf. Knight 2007). These increasingly ditched and enclosed areas, accessed by trackways, are detected and verifiable via aerial photography, geophysical survey and area stripping. At another level the transformation is seen in the numbers of pottery assemblages known stage by stage through the millennium. The scale and nature of activities and consumption grew. According to Knight pressure on resources, primarily land, may have engendered the often highly organized landscapes we encounter for the later first millennium (Knight 2007). Knight suggests grazing needs may have been a driver in some areas (such as the Trent valley) rather than the cause, necessarily, being either a large increase in population numbers or expansion of arable cultivation (though the latter was doubtless significant in places (cf. Lambrick 1992)). The greater demands placed on the land may have resulted in exhaustion if there was insufficient replacement with manure (cf. Cunliffe 2005, 418), perhaps spurring further inroads into previously uncultivated places. Loss of tree cover and tree root systems seems also to have been responsible for soil erosion with colluvial movement and as silts were washed (or blown) off fields to accumulate in spreads of alluvium following episodes of flood. Land divisions by ditching by the later Iron Age therefore both controlled and defined ownership/access rights but also operated to inhibit erosion in some environs.

Not only did the Middle Iron Age see the emergence of agglomerated settlements in Northamptonshire, and to some extent Leicestershire, implying population increase, there is also an increase in the density of sites known compared to the previous period. Atkins noted thirteen interventions in the county where significant Middle Iron Age settlements were encountered but where there was no previous occupation (Atkins 2018). These were focused upon the Nene and Ise Valleys. Some sites continue (see Section 5.1.7). Yet, these dynamic settlement agglomerations of the Middle Iron Age lose their vitality and diminish at the end of the Middle Iron Age or in the Late Iron Age. Smaller sites continue. Is this a pointer to depopulation in the Late Iron Age as suggested by Sealey looking at the evidence from Essex and beyond (Sealey 2016). This may have been specific to certain areas. At Navenby, for example, on the basis of small scale sampling it appears that Enclosure 1 was redundant prior to the emergence of the ribbon development along Ermine Street established in the Roman period (Palmer-Brown and Rylatt 2011, 15). In the Trent valley, by contrast the pattern appears to be one of increasing densities, and reflected in the early development of the coaxial field systems around Newark and larger nucleated settlements such as Besthrope and Rampton (pers. comm. David Knight).

5.1.7 Settlement Development into the Roman Era

Some sites occupied during the Late Iron Age did not continue into the Roman era, as for instance, those at Enderby and Humberstone (Elms Farm), Leicestershire and Polwell Lane, Barton Seagrave, Northamptonshire, where a Middle Iron Age settlement, at first unenclosed, continues into the Late Iron Age and early first century AD (Simmonds and Walker 2014), and Rosper Road, North East Lincolnshire (cf. Section 5.2). The general pattern, however, seems to be that settlements occupied in the Roman era overlie Late Iron Age settlement/activity (cf. English Heritage 1991, 36; Taylor 1996; Clay 2001). In most cases,

there is an apparent uninterrupted development, as at Leicester and Dragonby (May 1996, e.g. 102-3), and perhaps at Little Hay Grange Farm, Ockbrook (Palfreyman 2001), Holme Pierrepont (O'Brien 1979), Lockington (i.e. the scheduled cropmark complex where Roman period occupation lies adjacent; Clay 1985b; Ripper and Butler 1999), Warren Farm, Lockington (Thomas 2013), Sapperton (unpublished, but see Simmons 1976), The Bridles (Phases 5-6) Barnetby le Wold (North Lincs HER SLS2077; SLS2537) and Navenby (Palmer-Brown 1994; Palmer-Brown and Rylatt 2011). Recent publication of the temple site at Thistleton, excavated by Greenfield in the 1960s, confirmed Iron Age antecedents to the Roman temple sequence (Liddle and Taylor 2019); more knowledge of the general sequence at this extensive but hitherto enigmatic site would be helpful.

There remains a need, however, for a more systematic desk-top study of those sites that continued into the Roman era and those that ended in the mid-first century AD. Sufficient data exists from which to distil the actual picture, for what is a fundamental question. This would provide the basis for a substantive research project.

Many Roman villas have Late Iron Age antecedents, as at Piddington and Weekley in Northamptonshire (Friendship-Taylor and Friendship-Taylor 1989; Jackson and Dix 1987), where in both cases there is some indication of 'high status' during the Late Iron Age, and at Mansfield Woodhouse, Nottinghamshire (Oswald 1949). At Norton Disney, Lincolnshire, the villa (Oswald 1937) lies in an area where recent extensive survey work suggests Iron Age occupation/activity over a broad area with iron smelting (Bunn 2018) which was confirmed by limited excavation work (Brocklehurst 2018). To the south-west of the site cropmarks, and to the north geophysical survey, indicate enclosures and possible roundhouses (Monument No. 1067645; Jefferson 2019) and to the south of the villa, adjacent to Folly Lane, an enclosure (Allen Archaeology 2020).

Iron Age occupation may commonly precede that of the Roman period in parts of upland Derbyshire (Bevan 2000). This was so at Ockbrook and at Staden, near Buxton (Makepeace 1995), to cite two instances (and perhaps at Horsborough and Harborough Rocks; cf. Bevan 2000; Makepeace 2004). Bevan suggests that since Roman sites are more readily detected, they should be more extensively examined in anticipation of identifying underlying Iron Age phases.

5.2 Settlement Morphology

As noted above, a large proportion of Late Iron Age settlements are enclosed, but settlements and buildings placed in field systems rather than in specific enclosures are increasingly coming to light, as are open settlements. One cannot say that any one of these forms is particularly characteristic of this period; sub-regional trends are, however, discernible to some extent. The morphology of settlements was not static (Hingley 1984; 1990a) but evolving, and occasionally they were radically altered. The later Iron Age saw a degree of site re-modelling, as for instance at Normanton le Heath (Thorpe *et al*. 1994).

Enclosed settlements occur in circular/oval, D-shaped and sub-rectangular forms. Examples of the latter occur at Navenby, on the Lincolnshire Limestone, where sub-rectangular ditched enclosures have been recorded, evidently of later Iron Age date. Enclosure 1 measures roughly 50 m square (its north-east corner is a little 'stretched out'); the main entrance opens due east and there is a probable second opening facing due west; within are at least three circular buildings, facing east or south-east (Palmer-Brown 1994). A second enclosure, Enclosure 2, was apparently added to the first and contained a penannular feature which faced north; ancillary oval enclosures, suggested to be stock compounds or vegetable plots, are known from magnetometry (Palmer-Brown and Rylatt, 2011, 15-16, fig. 2.5). The enclosures lie adjacent to Neolithic and Bronze Age features and to Ermine Street (which may be prehistoric in origin). A section through the enclosure ditch of Enclosure 1 established it was 5m wide at the surface with a flat base 1.8m below current surface, and lower fills contained later Iron Age shell-tempered pottery (*ibid*., 15-6, fig. 2.6). One of the penannular gullies was sectioned; this likely roundhouse eaves-drip gully would have been 14 m in diameter. The scale of the enclosure is reminiscent of the so-called 'Wootton Hill' type (cf. Section 5.1.5).

Work in advance of the Covenham to Boston pipeline established that enclosures of the Middle and Late Iron Age on the Lincolnshire Marsh and Wolds typically enclosed *c.* 0.5 ha (Bush forthcoming). At Rosper Road, on the Lincolnshire Marsh north of the Brocklesby Interchange, excavations located part of an apparent a sub-rectangular ditched enclosure with two successive ring gullies, dating to the Late Iron Age; this was presumed to represent a discrete farmstead, with the excavator noting likely feature recuts implying long term use (Cavanagh 2020). The ditch was not extant on the western side and so the enclosure could have been partial with an 'enclosed' area of at least *c.* 0.25 ha. The ditch yielded sizable groups of typologically mid- to Late Iron Age pottery along with animal bone, mainly cattle and sheep; a sample of animal bone from this ditch was dated to 357 to 114 cal. BC (Cavanagh 2020, 42). The two ring gullies lay at the centre of the enclosed area, and are taken to indicate roundhouses. The earlier gully was poorly preserved, but nonetheless produced pottery and animal bone groups. A second eaves–drip gully lay to the eastern side overlapping the earlier gully; their diameters were *c.* 10 m. The site was abandoned by the mid- to late first century AD (Cavanagh 2020, 42-3).

A sub-rectangular enclosure at Enderby (Enclosure II) near to the 0.5 ha size had an entrance on its north-eastern side facing towards its companion enclosure (Enclosure I) lying *c.* 350 m to the north (Meek 1996, illus. 1; Meek *et al*. 2004, fig. 2). Enclosure II at Enderby had a timber gateway, based on the evidence of post settings. The enclosures at Colsterworth (May 1976a, fig. 96), likewise on the Lincolnshire Limestone, and Enderby, Enclosure I (Clay 1992, 24) are D-shaped, but of larger scale (*c.* 80 m by 70 m in the case of Colsterworth).

A large near D-shaped enclosure has also been identified at Green Man Road, north-east of Chapel Heath, Navenby, measuring 150 m in longest dimension. This enclosure is known from aerial photography (Palmer-Brown and Rylatt 2011, 148, fig. 7.1) and gradiometer survey (*ibid*., fig. 7.2). It displays an unusual in-turned entrance, while only one definable feature is known from the interior being a penannular feature 18m in diameter and interpreted

as representing a roundhouse eaves-drip gully, with apparent large post pits flanking an entrance. Both the enclosure and roundhouse are orientated to east-north-east. As the site is unexcavated it is suggested as a possible farmstead or livestock compound with "custodian" (herds keeper) in residence, or a ceremonial enclosure, though the basis for that possibility is less clear (Palmer-Brown and Rylatt 2011, 149). A similar enclosure occurs further north at Nettleham and is suggested to be later Iron Age (Winton 1998, 49).

At Huncote, Leicestershire, a small oval enclosure of later Iron Age date has been excavated, with evidence of two circular buildings perhaps of differing functions (Meek *et al*. 2004). The site continued in use into the first century AD but as with nearby Enderby Enclosure I occupation seems to have ceased by the start of the Roman era, although the enclosure may have been employed to manage stock (Meek *et al*. 2004).

Enclosures of the 'Wootton Hill style' vary from square, rectangular, trapezoidal to D-shaped; the unifying characteristic is the pronounced nature of the ditches and other works. Timber circular buildings have been identified within most of these enclosures. A large Late Iron Age trapezoidal feature at Brauncewell Quarry is believed to be a stock management enclosure (Lincolnshire HER).

Open settlements are known even in the latest phase of the Iron Age, as, for instance at Empingham 'West' (Cooper 2000, 46–8), and at Elms Farm, Humberstone (Charles *et al*. 2000), as well as at Winterton in North Lincolnshire in the area beyond the Roman villa, which is yet to be published. A period of undated open settlement is also apparent from cropmark evidence at Normanton le Heath (Thorpe *et al*. 1994, 30). The initial farmstead phase at Enderby (Enclosure I) was also open (Clay 1992).

A pattern of paired circular buildings has been identified at Enderby (Clay 1992; Meek 1996), and is believed to reflect functional differences, for example, between living and kitchen/agricultural uses. The site at Aylesby on the Lincolnshire Middle Marsh (Steedman and Foreman 1995) included two adjacent circular buildings which may be a pair. Pairing is also strikingly apparent at Bancroft, Buckinghamshire, during Period 2 (Williams and Zeepvat 1994).

The orientation of Late Iron Age circular structures conforms with a trend widely observed, with the majority facing to the east or south-east (Oswald 1997; for more discussion see Section 4.3). Two of the three roundhouses at Empingham 'West' were orientated to the south-east and the third may have been (Cooper 2000), while all five Late Iron Age roundhouses examined at Warren Farm, Lockington, were east-facing (Thomas 2013). By contrast all four structures within Enclosure II at Enderby, Leicestershire faced north-east (Meek 1996, illus. 2; Meek *et al.* 2004, illus. 3), though that too is a sub-trend in the pattern of orientations.

Comparatively little is known of the specific morphology of the aggregated sites and 'major settlements' (Section 5.1.6), other than what can be deduced from geophysical and aerial

survey (for example, in the case of Kirmington see Hemblade and Cooper 1989; Jones and Whitwell 1991). Work at Sleaford and Leicester (Elsdon 1997; Clay and Mellor 1985; Clay and Pollard 1994) has opened only windows onto this archaeology. Area excavations at Dragonby revealed an intensively used system of domestic compounds and trackways, with some roundhouses and other features such as likely water pits, a surprisingly uncommon feature at Iron Age sites in Britain generally (May 1996, 62-8, 106-29). Geophysical survey at Dragonby revealed something of the extent of this complex (*ibid*., 12-5). It seems unlikely that the scale of excavation required to understand the detailed morphology of these sites could occur in the foreseeable future, or be justified. In the meantime characterisation of these important sites could proceed via non-destructive sampling and survey. A survey programme was initiated at the essentially green fields site at Owmby by Ermine Street by English Heritage in the 1990s but was not sustained (Olivier 1997).

5.3 Buildings and Structures

Far more Late Iron Age circular buildings were known than for the preceding periods when the original Assessment was undertaken (cf. Willis 2006; Clay 2001) but since then many Middle Iron Age examples have been published resulting in a more balanced picture. Four post and two post structures are also comparatively well-attested, especially in Leicestershire and Northamptonshire. As in preceding periods some circular buildings are represented by substantial postholes, as at Enderby, Leicestershire (Clay 1992), others are represented by ring grooves or bedding trenches, sometimes associated with postholes (cf. Knight 1984), like the building at Cossington (Sturgess and Ripper 2000), at Colsterworth (May 1976a), and at Holme Pierrepont. At Enderby, Enclosure II, the two largest buildings were represented by concentric rings with large central postholes and a likely internal diameter of *c.* 10 m (Meek 1996).

Clay provided a valuable inventory of later Iron Age circular structures in Leicestershire and Rutland for the original county Resource Assessments (Clay 2001). A circular building recorded at Crown Hills, Evington, Leicester, is especially noteworthy in having an extant hearth (Chapman 2000). Likewise noteworthy are the structures at Enderby (Clay 1992; Meek 1996; Ripper and Beamish 1997), Elms Farm, Humberstone (Charles *et al*. 2000) and Normanton le Heath (Thorpe *et al.* 1994), being comparatively well-preserved, and yielding valuable structural details. Three circular structures at Empingham 'West' were represented by eaves-drip gullies (Cooper 2000, 46–8); 13 postholes occurred within one of these buildings, some, if not all of which are likely to represent associated structural settings over two phases. Only two buildings were fully exposed, both with entrances facing south-east. The internal diameters, within the eaves-drip circuits, each measure approximately 10 m across. All three had hearths, two being centrally placed.

More recently two roundhouses of Late Iron Age date have been excavated at Overstone Park, Market Harborough (cf. Section 5.1.3). The roundhouse in the eastern area had an eaves-drip gully *c.* 10 m in diameter with an opening to the SE; it had been recut; post holes enclosed within the area of the eaves-drip gully may be structural (Guy and Leslie 2020a, 3).

A roundhouse in the western area had a gully *c.* 16 m in diameter (indicating a building that was particularly large) and 0.8m deep with an entrance to the west (Guy and Leslie 2020b, 2-3). At Brigstock the roundhouse had remnant flooring surviving and the base of a possible stone bench (Jackson 1983). Also of note, recent excavations at Oadby, Leicestershire, have revealed a settlement with circular structures apparently of very late Iron Age/early Roman date (pers. comm. John Thomas).

The two circular structures partially exposed at Aylesby, North-East Lincolnshire, (Steedman and Foreman 1995) were represented by penannular gullies, interpretable as wall trenches; both measured *c.* 8 m in diameter. One of these gullies had an apparent west-facing entrance, which, as pointed out in the report, may have been positioned for sound practical reasons given the proximity of the site to the North Sea and its exposed setting. There is some indication that one of the buildings was of polygonal construction.

The evidence from Enderby, Leicestershire, suggests that smaller circular structures may often have been non-residential. Thomas noted that the contrasting finds assemblages from the five roundhouses at Warren Farm, Lockington, could be a guide to their use (Thomas 2013, 119-20). A smaller building at Rampton, Nottinghamshire apparently had an industrial function (Ponsford 1992). A non-residential use cannot, however, be presumed for all smaller circular structures, and their function has to be a matter for investigation in each case. Some such structures may have been domestic, with social status and age differences being potential determinants of who lived where and in what manner.

Clay has posited that the structure at Cossington, Leicestershire (Sturgess and Ripper 2000) may have had a ceremonial rather than a domestic function, since it was sited adjacent to a Bronze Age barrow where successive ritual and burial re-use took place, coinciding with an absence of domestic debris (Clay 2001).

Rectangular buildings are also now known in the region: for example, at Leicester (Clay 1985a) and at Normanton le Heath (Thorpe *et al*. 1994), where unusually beam plates and postholes are employed in combination. Another case is the site at Cadeby, Leicestershire, dating to the early and mid-first century AD where two sub-rectangular structures were encountered with beam slot foundations (Speed 2011a). Such structures are rare in Britain, but are beginning to be recognised (Moore 2003); across northern Gaul they are common as domestic loci. Four and two post structures continue through the period. Several four post structures were exposed at Elms Farm, Humberstone (Charles *et al*. 2000) and one two post structure was recorded at Empingham 'West' (cf. above).

5.4 Material Culture

5.4.1 Metalwork

Metalwork finds, including coins, brooches and cosmetic instruments, occur more frequently in Late Iron Age contexts than previously (Hill 1997b). This is particularly clear with

brooches although this era also sees the first widespread adoption of coin use and circulation. These are general trends apparent across southern and eastern England during the later Iron Age (e.g. Haselgrove 1997; cf. Hamilton and Adams no date) including the East Midland region (Willis 1997; Leins 2011; Farley 2012). Large numbers of finds have been recovered by metal detector users, a proportion of which will be logged with the Portable Antiquities Scheme (established following the Treasure Act of 1996). There are marked sub-regional differences in the incidence of finds across the East Midlands, with larger numbers of non-ferrous finds known from Northamptonshire and Lincolnshire especially.

Overall, Lincolnshire has produced a great many Late Iron Age metal artefacts, coming to archaeological attention by various paths. This is illustrated by the corpora of finds from Dragonby (May 1996) and Old Winteringham (Stead 1976) which include pre-excavation finds, and registered on the PAS database). Riverine and wet contexts are less well-represented than for the preceding phases of the Iron Age as cultural practices changed, although placed deposits are still known. Recent excavations at the Late Iron Age settlement site at Able Marine Energy Park (AMEP 1), North Killingholme, for example, uncovered the handle of a La Tène sword, found in an enclosure ditch which may have been a placed deposit in a liminal location (pers. comm. Chris Casswell). Finds from Northamptonshire include such spectacular items as the La Tène III sword from Aldwincle (Megaw 1976) and the Desborough mirror (RCHME 1979, 33). By comparison Derbyshire and Nottinghamshire have so far yielded modest quantities of metalwork, including coins, from this period. The latter may reflect the extent of the political authority of the tribal grouping we have come to know as the Corieltauvi (Leins 2011, fig. 44); continuing exploration of this difference will be instructive.

Torcs, while rare in the East Midlands, are a feature of this period. May profiled two particularly striking and contrastingly fashioned examples (though both have loop terminals) in electrum from the Ulceby hoard, recovered in the 19th century in North Lincolnshire (May 1976a, 156-62, fig. 77).

Several items may be mentioned here because they, or their find-spot, are unusual. From Normanton le Heath has come a copper alloy hilt- or mouth-guard from a sword scabbard (Thorpe *et al*. 1994). A La Tène III brooch is known from Gringley-on-the-Hill, Nottinghamshire (Oswald 1938), an area with comparatively little first millennium BC evidence, although a triangular clay loom weight and Iron Age pottery is also reported (*ibid*.; Knight and Howard 2004). From sites in the east of the region have come a series of Nauheim brooches of *c*. 120–60 BC (cf. Section 7.4 (Mackie 1993)), predating the profusion of brooches in the last decades of the pre-Roman Iron Age. An illustrated example was recovered at Mount Pleasant, Nettleton, on the Lincolnshire Wolds (Cooper 2013, 269-70). These items, together with other artefact categories such as some types of pottery (cf. Section 5.4.2), indicate the spread of shared styles in the later La Tène period that spanned large areas of Britain and the near Continent.

Figure. Nauheim Brooch from Nettleton …

5.4.2 Pottery

The development of the Scored ware tradition (of which Cunliffe's 'Ancaster-Breedon' style is a part) enables some chronological change to be recognized. At Empingham 'West' (Section 5.2), for instance, Scored ware forms present meant the period of the main settlement evidence could be allocated to the Late Iron Age, specifically the first century BC (Cooper 2000, 48).

In the east of the region Late Iron Age pottery types, including wheel-made vessels, appear perhaps by the start of the first century AD, and, crucially are often mixed in groups with Scored ware, as at Dorket Head, Dunstan's Clump, Gamston, Holme Pierrepont and Rampton (Turner and Swarbrick 1978; Turner and Turner 1997; Garton 1987; Knight 1992; pers. comm. Sheila Elsdon.; Ponsford 1992; Knight 2000). Aslockton, Nottinghamshire, is another site yielding stylistically Late Iron Age pottery (Palmer-Brown and Knight 1993; Knight 2007). The debut of such pottery is now seen as a genuinely Late Iron Age occurrence, rather than happening around the time of the Roman conquest, as was once thought. On the other hand, Scored ware is now seen to continue in parts of the region until the mid-first century AD (Elsdon 1992a; Willis 1998); the occurrence of these two styles together can no longer be regarded as problematic. Dragonby and Old Sleaford are important for the Late Iron Age types recovered, including cordoned and carinated forms, often highly burnished and occasionally decorated, with an expanded functional repertoire (Elsdon and May 1996; Elsdon 1997); small groups also display these stylistic types, coming from other sites in Northamptonshire, Leicestershire and historic Lincolnshire, as at Tattershall Thorpe (Chowne *et al*. 1986). That said the transition to types resembling imports and Roman pottery lasted decades through the first century AD (cf. Darling and Jones 1988; Willis 1996).

For Northamptonshire, survey of the dates of pottery assemblages through the Late Bronze Age to the Late Iron Age from the county undertaken by the Prehistoric Ceramics Research Group had shown how little evidence there is for the early first millennium BC but conversely how pottery becomes much more frequent in the second half of the millennium, in accord with likely population increase and seemingly a growing interest in ceramic use (Earl *et al*. 2007). By contrast volumes of pottery from excavations in Derbyshire and Nottinghamshire (as with metalwork) are perceived to be relatively low compared to elsewhere in the East Midlands even in the later Iron Age (Barrett 2000). This paucity warrants further research in the future (cf. Willis 1999, 85-90).

5.4.3 Coinage

Coins appear in the region during the Late Iron Age. Some non-regional issues of second century BC date occur, but the majority are issues of the two tribal entities conventionally associated with the region: the Corieltauvi, in Lincolnshire, Nottinghamshire, Leicestershire and possibly parts of Derbyshire and the Catuvellauni, of whose territory Northamptonshire formed a part. The earliest local coins are gold scyphate types

presumed to be earlier first century BC in origin, perhaps indeed the earliest coins by some margin. Reviews of these coinages and their archaeological distributions and meaning include those by May (1984; 1992; 1994), Leins (2011) and Curteis (1996). All told, large numbers of coins are known from the region and numbers continue to rise apace as a result of metal detector use providing a valuable resource for studying a wide range of aspects of the latter part of the period. The hoards associated with the Hallaton site in south-east Leicestershire, with almost 5000 coins recovered, constitute a major find (cf. Section 10; Priest *et al.* 2003: Score 2011; Leins 2011). (As noted in Section 5.1.6 (ii) possible evidence for minting in the form of baked clay pellet mould trays is known from sites in Leicester and at Sleaford).

5.4.4 Other Artefact Categories

▪ Dragonby. Late Iron Age artefactual material, in considerable variety and extent, has been recovered from the region, as comprehensively demonstrated in the case of Dragonby, North Lincolnshire (May 1996).

▪ Glass. Excavations at Able Marine Energy Park, North Killingholme, produced a fine dark blue glass bangle fragment with off-white trail lines from an Iron Age context (pers. comm. Chris Casswell). Half of a colourless glass ring bead with opaque yellow inlay was recovered from a late first century BC - earlier first century AD context at Gamston and is of a type likely to date between the second century BC and the first AD (Henderson 1992b). A plain annular bead of pale blue translucent glass was recovered at Beaumont Leys, central Leicestershire and is of a type that dates between the Middle Iron Age and the start of the Roman era; while coming from an undated context it seems likely this was associated with the Iron Age occupation (Thomas 2011a, 93). An annular blue glass bead with yellow inlay and of the type sometimes referred to as ‘celtic ray’ and dated to 150 BC - AD 50 was recovered from an Iron Age context at Weekley, Northamptonshire (Jackson and Dix 1987, fig. 28 M89 97).

▪ Clay sling shot bullets. Weekley also produced four examples of clay sling shot bullets from Iron Age contexts (Jackson and Dix 1987, fig. 28 M88 92-95); these are described as extremely light (but no weights are given) and for suggested use in hunting, perhaps of birds. Sling shot ammunition fashioned from clay was present at Dragonby with 52 complete examples (but including a few stone items) reported (with weight information) and the regional occurrence was catalogued (Elsdon and Barford 1996).

5.5 Agriculture

Agricultural expansion during the later Iron Age was summarized in Chapter 11 of the original Resource Assessment (Monckton 2006). The general picture is one of further clearance of trees to bring land into cultivation. This is seen for example in pollen samples from the Trent valley site of Fisherwick, Staffordshire, just to the west of the East Midland region (Smith 1977; 1979), in dramatic increases in the frequency of charred cereal grains

amongst samples, such as spelt, and continuing intensification of land divisions and enclosure (cf. Knight 2007, 197-9). While the Middle and Late Iron Age in Britain was a period when arable production was extensive, innovative and successful (in terms of apparent yields) mixed agricultural economies existed at many locations such as on the claylands at Enderby (Clay 1992). Clay suggests that there was here, perhaps, a greater emphasis on a pastoral base, with sheep and cattle predominant (Clay 2001). This seems also to have been the case at the 'clothes-line' complex at Tixover, Rutland (Beamish 1992). At Elms Farm, Humberstone, cattle and sheep were present in equal proportion (Charles *et al*. 2000). Thomas surmised that the settlement and enclosure complex at Warren Farm, Lockington, was focused upon livestock raising during the later Iron Age (Thomas 2013). Pig was represented amongst the small faunal samples from Late Iron Age contexts at Empingham 'West' (Cooper 2000), and Nettleton, Mount Pleasant, Lincolnshire (Stallibrass 1999; Rackham 2013), where the species accounts for *c*. 13% amongst a faunal assemblage dominated by sheep/goats. Domestic fowl bones occur at various sites including Enderby Enclosure I (Clay 1992) and Nettleton (Stallibrass 1999; Rackham 2013).

Cereals are regularly present on excavated sites in Leicestershire, Rutland and Northamptonshire. At Covert Farm, Crick, barley becomes much more prominent in the samples than previously, alongside wheat cereal (Monkton 2015, 280). Less information is available for Lincolnshire, although samples spanning the first century AD from Nettleton, Mount Pleasant, show wheat and barley grains with no chaff present (Rackham *et al.* 2013). Where cereals occur there is a consistent pattern of low frequency. Whether this reflects survival, past usage, or a lower emphasis on cereal farming is unclear (Monckton 1995, 35). Across the region, the pattern is for spelt (a robust wheat) to appear most commonly, with barley also represented; only occasionally are grains of bread wheat type found, with no chaff present which might have indicated a crop grown on site. Rich deposits of *processed* cereals are known from Rushey Mead (Pollard 2001; Monckton 2001) and Elms Farm, Humberstone (Charles *et al*. 2000). At Foxhills and Radstone Fields, elements of the Brackley agglomerated complex, flagged areas 12 m by 9 m, and 9 m by 8 m, respectively, both dating to the Late Iron Age have been suggested as possible threshing floors (Morris 2019, 102). At Radstone Fields this was reported as possibly enclosed (covered?) by a building. If that was the function they would be early examples of a feature type rare even in the Roman period in Britain where these floors may normally have been under roofs but open-sided, bar perimeter curbing to 'contain'.

In north Nottinghamshire and extending into South Yorkshire on the Sherwood Sandstones the appearance of broad enclosure known as the brickwork-plan field-systems is largely a late development, around the late first century BC, through the first century AD, and perhaps into the earlier second century AD (cf. Garton 1987; 2008). In parts of southern Nottinghamshire and the Trent valley cropmarks conform to a co-axial field system arrangement with integral settlements (e.g. Knight and Howard 2004, fig. 5.18), reflecting the 'brickwork plan' to the north. Doubtless their development was a relatively long process, interspersed with accelerated periods of enclosure and change, perhaps much like the enclosures of 'common land' in more recent times. A standard interpretation is that

these systems arose from land pressures and economic changes produced by increasing population and settlement expansion, and perhaps a social imperative to generate surpluses for exchange (and wealth) and for status creation. The unusual Middle and/or Late Iron Age enclosure at Aslockton, on an interfluve east of Nottingham, has been suggested to have been for stock management purpose, as its *c.* 20 ha interior is divided up with sub-rectangular compounds; the scale of the enclosure here is impressive given the physical labour involved and it will have been a marked landscape feature during its currency (Palmer-Brown and Knight 1993; Knight 2007, 200-3, fig. 4).

In parts of Derbyshire a considerable degree of landscape continuity is suggested from the Middle Iron Age through to the Late Iron Age (Bevan 2000). As on the Leicestershire claylands, mixed farming was apparently being practised on the Mercia Mudstone. This seems likely at Little Hay Grange Farm, Ockbrook; the faunal assemblage comprised predominantly cattle and sheep/goat, with horse represented (Palfreyman 2001). More samples are required from such areas to establish and verify trends.

Organic residue analysis (ORA) was undertaken for a selection of pottery sherds from the Brocklesby Interchange site. Examination of sherds from Phase 2.1 (Middle to Late Iron Age) indicated vessel use in processing carcass products from cattle, goats and sheep, with no evidence of the processing of pork or dairy products (Dunne and Evershed 2020). ORA of basally pierced vessels of Late Iron Age date suggested a use in straining and rendering of carcass parts rather than dairying, and that beef or lamb fats or similar secondary products of meat were being collected; this may have been destined for trade (Cavanagh 2020). This is particularly noteworthy as the area is designated 'Grazing Marsh' in the recent land characterization scheme (Lord and MacIntosh 2011), so if herds were being grazed from this site dairying was not evidenced by ORA for this period.

PART III. Evidence Types

6. Hillforts and Analogous Sites

▪ Character and Distribution. The term 'hillfort' is an umbrella category, covering a range of site sizes, types, and functions, with each having its unique identity and biography (cf. Hill 1995a; 1995b); in consequence, a variety of earthwork sites in contrasting landscape settings may be included under this label. The constituent historic counties of the East Midlands each have a few examples of sites that may uncontroversially be defined as hillforts, with Northamptonshire having somewhat more (or better defined) hillforts. These have been surveyed by the Royal Commission for Historic Monuments (RCHME 1981; 1982; 1985; 1993). The relative sparsity of hillforts in the East Midlands, together with adjacent regions such as Yorkshire and Warwickshire, is one of the distinctive aspects of their first millennium BC archaeologies, contrasting with regions such as Wessex and the Welsh Marches (Cunliffe 2005). Details of the principal sites are given in Table 4.

▪ Leicestershire. Generally the hillforts, actual and potential, and analogous sites are not

comprehensively explored, with little investigation of interiors or of immediate environs. Sites such as Robin a Tiptoe, in Leicestershire, where earthworks are associated with hill summits, could be later prehistoric, post-Roman or multi-period (Table 4). Another Leicestershire instance of a conjected Iron Age site is the enclosure known as Castle Hill, Bardon, in the Charnwood Forrest, where a substantive circular ditch surrounds an area c. 60 m across and where an interior bank may have been levelled (Liddle 1982, 22, fig. 16). As Liddle observed, 'satisfactory' answers regarding their chronology will only be forthcoming from excavation (Liddle 1982, 22; cf. Clay 2000). Our lack of knowledge of these sites is a hindrance to a broader understanding of the Iron Age, especially if they were significant in people's lives and practices. In the 2003 Resource Assessment it was stated that, on the whole, hillfort studies in the region were static (Willis 2006). However, since 2003, new excavation has been conducted at Burrough Hill, Leicestershire (Thomas and Taylor 2010; 2015; cf. Taylor *et al*. 2012) and Fin Cop, Derbyshire (Waddington 2010; 2012; Waddington and Montgomery 2017). In Northamptonshire integrated surveys were undertaken at Borough Hill, Daventry (Chinnock *et al*. 2020) and a geophysical survey campaign and small scale trenching at Hunsbury ((Jackson and Tingle 2012). Reviews of the evidence for Carl Wark, Derbyshire (Badcock and May 2014), and Crow Hill, Irthlingborough (Foard and Parry 1987; Parry 2006, 64-5), have also been produced.

▪ Derbyshire. Considering the sites by administrative area, Derbyshire has several sites that can be categorized as hillforts. A modest number of hilltop enclosures exist in the Peak District in the north of the county that are recognized as hillforts (Hart 1981, 73–81; Hart and Makepeace 1993; Bevan 2000, 145). Their locations are striking and dramatic. Several are completely undated, while elsewhere limited excavation has yielded no unequivocal indicators as to date or sequence. A pertinent case is Mam Tor. Some have argued that the whole site is later Bronze Age, while others see the settlement as Late Bronze Age but its earthworks as Iron Age (Guilbert 1996; Bevan 2000, 147). It would not be surprising, of course, if the actual chronology was complex. A correlation has been noted between the location of the hillforts of the Peak District and the main valleys where Iron Age settlement is likely (e.g. Barnatt and Smith 2004), implying that such hilltop enclosures may have been placed adjacent to likely population concentrations and at the threshold of contrasting resource areas.

▪ Lincolnshire. In the case of Lincolnshire, as May stated nearly fifty years ago: 'four smaller forts are known, although none has been excavated, nor has yielded any other good evidence of date' (May 1976a, 141). The situation has not changed. (The site at Swinhope hill, near Binbrook (Lincolnshire HER MLI42747) categorized more recently as a hillfort on the basis of cropmarks is realistically best seen as a not atypical small settlement enclosure (Jones 1998, fig. 9) and may be early Roman). May added two points regarding size and social role and the consequence, as he saw it, of this paucity of hillforts: 'The Lincolnshire forts, to judge from their small size and number, are unlikely to have functioned as citadels of chieftains … Their scarcity here, as elsewhere in eastern England, is one of the reasons why the Iron Age in these regions has been unduly neglected by previous generations of archaeologists' (1976a, 143). Whilst in essence these points are accurate they point up

aspects of the historiography of the subject and reveal the nature of thinking on the role of hillforts in the later 20th century.

▪ Nottinghamshire. To some degree this is also true of the small number of defended sites on the Mercia Mudstones above the Trent valley (see Table 4; cf. Bishop 2000). Here too there has been only limited investigation of the 'hillfort candidates', such that their date and character remain as unclear as they were 60 years ago (Simmons 1963). They display variety and do not necessarily occupy the most defensive locations. Accordingly, Bishop suggests they are unlikely to be of uniform date and function (Bishop 2000). Only one upland site in Nottinghamshire has been subject to modern excavation, through the efforts of James and Catherine Turner and the Sherwood Archaeological Society. This is the intriguing site at Dorket Head, Ramsdale Park, Arnold, constituting a plateau-located earthwork enclosure on the Mercia Mudstone with Iron Age and Roman phases (Turner and Swarbrick 1978; Turner and Turner 1997; Keyworth 2012, 29-31; Notts HER M2051 - MNT13684). The site has yielded finds of considerable significance, including Iron Age and Roman pottery, broken rotary quern fragments and a saddle quern and raises a series of questions as to its nature over time. An apparent complex sequence has produced ceramics assignable to various stages during the first millennium BC (Late Bronze Age and/or Early Iron Age; Late Iron Age) and into the first century AD and Roman period. The site seems atypical on current knowledge, though that may be a function of limited investigation on the uplands.

▪ Hunsbury. The site at Hunsbury, in Northamptonshire, is a rare East Midlands example of a 'developed hillfort' (cf. Cunliffe 2005, 388-402 for definition) having multiple earthworks and evidence of intensive use and activity dating to the Mid- to Late Iron Age (see Historic England Scheduled Monument Listing entry 1012150 online). During its 'developed' phase, at least, it was occupied, with over 300 pits recorded, yielding a wide corpus of finds (Baker 1891; Dryden 1885; Elsdon 1976; Fell 1936; George 1917; Ingle 1994; Jackson 1994b; RCHME 1985). Material recovered represents a substantial and regionally important artefact assemblage constituting a significant research resource. This may be gauged, for example, by the recovery of over 150 quernstones from the site, indicating, amongst other aspects, the long distances that some materials were moving (see Sections 8.4 and 8.10.5); perhaps local iron was moving in the opposite direction? Hunsbury has been considered a strong candidate for 'central place' status; however, the central place model for hillforts is less prominent these days following extensive critique at the end of the 20th century. More latterly, as has been the fashion for some while within hillfort studies, its role in relation to its hinterland has begun to be explored. While we cannot be sure of the density of occupation and activity at any one time, even at hillforts where the evidence from the interiors is relatively plentiful, as at Hunsbury, Borough Hill (Daventry) and Mam Tor, the human sensory experience of approaching and entering the environment of such large sites during their busiest times will have been marked, contrasting with life outside these large, physically demarcated, places (cf. Sharples 2014, 230).

▪ Marsh forts. The possibility that two 'marsh forts' exist within the region has been raised, namely the enclosures at Tattershall Thorpe, in south eastern Lincolnshire and Crow

Wood, Styrrup, in north Nottinghamshire, which enclose areas of *c.* 2.4 and *c.* 1.5 hectares respectively (see Section 4.2 for the Tattersall Thorpe enclosure). Parker Pearson and Sydes had claimed an example just to the north of the present region at Moorhouse Farm, Tickhill (Parker Pearson and Sydes 1997; after Riley 1980, 35, pl. 15). The low-lying double enclosure at Sutton Common, South Yorkshire, had been seen in a similar light; upon excavation it was found to contain little indication of occupation in terms of settlement and artefacts but a large number of post built structures, regularly organized, most probably grain stores (Van de Noort *et al*. 2007). The date and function of the Crow Wood site remains uncertain. In the case of Tattershall Thorpe Chowne favoured an interpretation as principally to do with agricultural use based on environmental data and setting, in particular for cattle management rather than defence and 'central place' functions, though the interior was largely unexplored (see Section 4.2 Chowne *et al*. 1986; Seager Smith 1998). Pollen samples from excavated contexts show the environment to be mainly open grassland consistent with livestock raising (Chowne *et al*. 1986, 167). The site seems likely to have had a long chronology with wood from the fill of the outer ditch dated to the Middle Iron Age by radiocarbon and the latest ceramics from upper ditch filling dating to the first half of the first century AD or perhaps slightly later, though no Roman pottery was present (Chowne *et al*. 1986). It is possible that further sites of this type exist, yet to be identified on 'higher ground' within low-lying areas, potentially in the Ancholme, Witham and Trent valleys, or in the Lincolnshire Middle Marsh, perhaps buried or in circumstances unconducive to the generation of cropmarks (Catney and Start 2003). In addition, later prehistoric 'defended' sites of various types may come to light in the Lincolnshire Outmarsh, conceivably well-preserved below marine silts and alluvium; to date the Middle Marsh and Outmarsh have witnessed little archaeological intervention commercial or otherwise with the exception of the Humber Bank in the Killingholme/Stallingborough area (cf. Section 5.1.3; Bush forthcoming).

▪ The Nature of Investigations and Archaeological Thinking. Where hillforts were explored during the twentieth century, attention within the East Midlands focused upon hillfort defences. This was standard practice in Britain at the time, the aim being to identify 'sequence and date', as at Breedon Hill, Leicestershire (a site with a chequered biography of quarrying and archaeological interventions during the last century). In consequence there has been a lack of examination of the interiors, nor has there been much excavation in their immediate surroundings. Hence it is unclear whether the evidence from Hunsbury is representative and how intensively hillforts were used, when and in what manner. We still do not know whether they included year-round settlements, and to what extent they are comparable, in terms of their (perhaps evolving) social role, with hillforts in the Welsh Marches, Wessex and elsewhere.

Our understanding of hillforts has adjusted rapidly since the mid-1980s following the publication of Prof. Sir Barry Cunliffe's excavations at Danebury (cf. Cunliffe 2005). Following the publications of the works at that site in central southern England, a reaction followed critically assessing the existing conventional thinking on hillforts, their elements and overall role. The emphasis shifted to consider their diversity, and to incorporate contextual approaches, and to assess the role of these sites in terms of

the wider community and to re-evaluate ideas of a central place function; symbolism and ritual became popular perspectives on what happened at these sites. Clearly, whatever their precise roles in society, their potential 'defensive' functions cannot be ignored. Indeed some at least in the East Midlands region may be the consequence of social tensions during the Late Bronze Age and Early Iron Age, or a desire to collect and protect (new, different or precious types of) agricultural surplus in the first millennium BC. A specialised role or roles can reasonably be assumed (cf. Hill 1993; 1995b).

▪ Fin Cop. Recent work at Fin Cop, Derbyshire, adds support to the old convention that hillforts were strong points for defence at hostile times. Positioned on a scarp edge the enclosure of the Fin Cop hillfort takes the form of partially bivallate rampart and ditches (Waddington 2010; 2012; Waddington and Montgomery 2017). Excavations conducted between 1999 and 2014 show the rock cut ditch was unfinished. Where finished the ditch had a flat base 1.25 m below current ground surface and was 4 m wide, with a vertical inner face. The rampart was stone-fronted and 4 m thick and the main fill of the ditch comprised slighted wall material including some faced and semi-dressed stone (Waddington and Montgomery 2017, 25). The rampart wall was found through excavations to be consistent at three locations suggesting a single planned construction event on the eastern and southern sides with construction dated to the Middle Iron Age (*ibid*. 30; the robust date for construction of the rampart via Bayesian modelling may be noted (Waddington 2012)). The excavations revealed that the slighting of the defences occurred at the same time as an apparent mass killing – a massacre - of an estimated 400 individuals (Waddington 2012, 224). The skeletal remains of women, babies and children were found deposited in an irregular manner within the hillfort ditch immediately after or at the point of death, with the wall destruction debris spread on top of them and interpreted as a single event towards the end of the Middle Iron Age (Waddington 2012; Waddington and Montgomery 2017, 27). Since the three trenches opened over the earthworks were far apart but had similar remains it was concluded that 'people were disposed of throughout most, if not all, of the fort's rock cut ditch' (Waddington and Montgomery 2017, 56). This case raises the question of how common acts of violence were in the first millennium BC (James 2007) and the debate about the roles of hillforts (cf. Armit 2007).

Human bones with weapon injuries are relatively well-attested in the record. A range of cases at Danebury hillfort in southern Britain, for instance, show severe injury, evidently resulting in death, by sword or spear (Cunliffe 1983, 87; 1995, 93-4). A massacre or violent episode involving a group is paralleled at Kemerton Camp, on Bredon Hill, Worcestershire, where the 1935-7 excavations uncovered a large number of human remains associated with weapons on the ground surface in the main entrance-way to the hillfort (Western and Hurst 2013). This was labelled a 'massacre' deposit and was thought to mark the end of the hillfort occupation. New work on the bones examined weapon-related trauma marks consistent with violent death and the bones from three individuals were dated, with the dates consistent with all three dying at the same time supporting the theory of a single 'event'; C14 gave a date of *c.* 170-50 cal. BC, in line with the dating of the pottery. Study of the human remains from Maiden Castle hillfort in Dorset dated to the Late Iron Age by Redfern found both male and female

skeletons displayed healed injury/trauma caused by direct blows to the body with weapons while others had suffered injuries to face, torso and forearms and forceful injuries to the skull around the time of death, which had not healed (Redfern 2011). This led Redfern to conclude that there was frequent interpersonal violence and no distinction between males and females. While there may be questions about the representativeness of the sample, around, for instance place of burial, sample size and 'selection for burial', the pattern of this sample was clear.

▪ Borough Hill: survey. Whilst excavations have taken place at the hillforts of Burrough Hill and Fin Cop in the past two decades this is unusual these days for reasons mentioned; more likely, nonintrusive methods of investigation will be standard in future. At Borough Hill, Daventry, as a component of a wider survey of the two hillforts undertaken between 2017 and 2019, a drone was employed to create an orthomosaic (a sharp focus photographic record of an area from above), a digital terrain model and to establish a normalized difference vegetation index (Chinnock *et al*. 2020). Geophysical surveys were also conducted of the interior areas consistent with recommendations for the further investigation of hillforts in the region detailed in the East Midlands Research Framework Agenda/Strategy (Knight *et al*. 2012, 63). Overall, the findings indicated that perimeter ditches, possible entrances and trackways survived in a relatively well-preserved state, with evidence for Iron Age (and Roman) settlement identified within (Chinnock *et al*. 2020); this is commensurate with earlier findings (e.g. Jackson 1994a). In particular close interval magnetometry revealed clustered units of apparent settlement (including apparent enclosures, pits and circular structures) across the large interior, possibly contemporary and representing different functional zones, although there were also areas with few anomalies suggesting open/unoccupied spaces (Chinnock *et al*. 2020). In the central southern area some nine likely circular structures c.10-12 m in diameter were identified along with enclosures of various size and possible pits; one evident roundhouse produced responses suggesting the presence an eaves-drip gully enclosing a wall trench, post settings and central hearth (Chinnock *et al*.2020, 23-4). At the northern end of Borough Hill the small multivallate fort superimposed on the large hillfort enclosure and covering *c.* 5 ha was also subject to close interval magnetometry. This work detected a dense clustering of small anomalies suggestive of pits and ovens/hearths (a contrast to the large hillfort to the south), a likely trackway and several linear anomalies suggesting sub-division plots, but only one likely roundhouse, *c.* 12 m in diameter (Chinnock *et al.* 2020, 24-5).

▪ Hunsbury: survey. Likewise, at Hunsbury hillfort, geophysical survey was conducted outside and within the hillfort, and over the earthworks, between 2000 and 2011 supported by targeted small scale excavations (Jackson and Tingle 2012). This established significant new information: that there was some better survival of a part of the interior (following quarrying) than had been expected, that, surprisingly, the ramparts had been subject to vitrification, and that an undated outer ditch existed.

Hillforts: Summary (see Table 4)

▪ Hillforts and analogous sites are not a major class found in the region.

- Allocation of the label 'hillfort' is more justified in the case of some sites rather than others. In Britain generally hillforts are not a uniform class but display variety; hence designation in the past of certain sites in the region as belonging to this category has been conjectural, especially with smaller enclosures where very limited or no investigation has been undertaken.
- The frequency of these monuments varies across the region.
- Hillforts were not an embedded feature of first millennium communities across most of the region and were, therefore, not essential in terms of group organization and social reproduction.
- Their morphology is varied; this is not a uniform category.
- By analogy with other regions, such sites probably served a range of functions. Their role(s) and 'identities' probably changed through time, and they may have been less significant during the Late Iron Age.
- Chronological understanding is variable, but generally limited, remaining a significant priority for any future work.
- There has been little investigation of their interiors or exteriors.
- Some hillforts show evidence of domestic occupation (e.g. Breedon Hill, Burrough Hill and Mam Tor).
- In general it is likely that these are complex sites.
- Their relationship to the contemporary social structure and practice is unclear; some appear likely to have been had some 'central place' functions (e.g. Hunsbury and Borough Hill).
- Some sites have been extensively damaged by mineral extraction (e.g. Breedon Hill, Hunsbury and Tattershall Thorpe - if the latter belongs with this class of monument). Sites are now protected, although protection often stops at the fringe of their extant earthworks; present threats to these sites are limited (although the drying-out of organic deposits may be a problem in the case of Tattershall Thorpe and the environs of marsh forts).
- The state of preservation of some sites is comparatively good (e.g. Honington Camp, Lincolnshire).
- Identification of further hillforts, marsh forts and other sizeable 'defended' enclosures remains possible, particularly in lower lying areas.
- Nationally, sites that later became hillforts often have Bronze Age occupation (and sometimes fortification). Bayesian modelling of C14 dates suggests typically this is followed by an Early Iron Age hiatus, with hillforts (including Danebury) proving to be constructed after 450 BC. Then they are abandoned within a century with only a minority continuing. The two well-dated examples from the East Midlands (Burrough Hill and Fin Cop), seem in line with this pattern: both were built close to 400 cal. BC.
- Hillforts remain a valuable resource; projects undertaken at such sites in the region over the past two decades has revealed significant new evidence attained through excavation and non-intrusive survey methods.
- The research potential of these sites, when subject to integrated and structured programmes, is indicated by the older work at Breedon Hill, and more recently undertaken at Fin Cop, Burrough Hill, and Borough Hill. However, current knowledge is limited and there remain many questions about the origin and roles of hillforts and analogous sites in the region and their relationship with their environs.

Figures..Honington Camp

7. Linear Monuments

7.1 Introduction

Long distance linear boundaries are one of the characteristic features of the first millennium BC in eastern England. These systems include pit alignments and single, double and triple ditch/dyke arrangements. Synthesis is not simple. Broadly speaking, these monuments make their debut in the Late Bronze Age. Whilst displaying some diversity of detail and morphology the pit alignments and the dykes form two distinct monument classes. Here they are grouped together because they seem to have shared similar functions in bounding the landscape and in a number of cases, these different monument types appear closely related (Fearn 1993; Boutwood 1998). The functions and meaning of these enigmatic features were doubtless not universal, and they have no firm precursor. Nonetheless, there is patterning to their incidence within the landscape and a number of examples evidently respect existing anthropogenic features. They mark a new episode in the dynamic unfolding of cultural landscapes in later prehistory and there is a tacit consensus that they are likely to represent significant boundaries of a politico-economic nature at local level. Unsurprisingly, much of the evidence comes from aerial reconnaissance, although an increasing number are being identified through strip-map-sample approaches, and indeed a growing number have been examined through excavation.

These boundaries are an important component of the later prehistoric record, being germane to any broad attempt to interpret the region's social relations and development. Prior to PPG16 they were a relatively untapped resource, documented from aerial photography while fieldworkers concentrated upon settlement sites. However, the change in the scope and scale of archaeological interventions that commercial archaeology heralded from *c*. 1990 coincided with the growing popularity of landscape archaeology (itself, facilitated by technological changes that have assisted mapping, analysis and plotting), meaning that they have received greater attention. That they are linear, of large scale, occur in rural settings and characteristically yield little cultural material has and can mitigate against detailed investigation, though much recent work has been appropriately thorough in attempting to maximize data recovery from such features. On the other hand, these monuments are a comparatively well-preserved class, not infrequently being the repository of potential environmental and some cultural data. Having received much attention during aerial reconnaissance, several valuable studies involving their systematic mapping, characterisation and interpretation are to hand (e.g. Pickering 1978; Boutwood 1998; Thomas 2003; 2008), whilst developer-funded investigations have resulted in more discoveries, and systematic evaluation and sampling.

7.2 Pit Alignments

▪ Introduction and Context. 'Pit alignment' is a suitably descriptive term, rather than an interpretative one, for strings of pits which are variable in scale and length, normally found arranged in single lines (though sometimes in paired rows), which can extend for distances of over 1 km. Such alignments occur across the region, although far from uniformly. Whilst not unique to the region, they are a comparatively well-represented monument class within the East Midlands, and may be cast as one of the region's distinctive later prehistoric monument features. Although most examples have been identified via aerial reconnaissance, pit alignments are not infrequently encountered during fieldwork, and on occasion can occur unexpectedly where no previous indicator is known, as at Seaton in Rutland (Carlyle *et al*. 2017). The pits themselves are often oval or sub-rectangular in plan, though can be rounded and even vary within an alignment, as at Milton Ham, Northampton (Leslie and King 2021) where this may be explained by episodic development or separate 'gang-work' (see below); dissimilarity within the pit morphology at Upton Park, also by Northampton, was likewise attributed to these explanations (Wolframm-Murray *et al*. 2022). Typically the pits occur in strings of regular, closely similar, form, with individual pits often about the size of a large desk. Some selected excavated pit alignments are listed in Table 7, while the features of two cases (Milton Ham and Brocklesby Interchange) are itemized in Table 8. There are, unsurprisingly, sub-regional differences in the character and recorded density of these features across the East Midlands region. Differences of geology, cover deposits and in the amount of development and quarrying undertaken probably explain some regional variation in recorded numbers between administrative areas (see below, this Section).

Analysis by Boutwood, based on Lincolnshire cases, suggested that there is a strong cultural element to their distribution, and whilst there was indication of some correspondence or referencing of natural boundaries they were not, as a class, closely related to the physical dynamics of landscapes (Boutwood 1998). In considering the newly expanded evidence for pit alignments from the region John Thomas (2008) notes their frequent presence and role in the early stages of developing landscapes.

[Tables 7 and 8 Here]

▪ Lincolnshire. Turning firstly to Lincolnshire, there is a strong spatial patterning to their incidence in the county, where they are well-represented in the Welland valley and on the limestone uplands, but until recently had seemed virtually absent elsewhere (Boutwood 1998). This distribution cannot be just a matter of geologies and topography. Development led work in the past twenty years or so has shown that in the area of the historic county they occur more widely than previously thought (as at the Brocklesby Interchange in North-East Lincolnshire (Cavanagh 2020) and at the Able Logistics/Able Marine Energy Parks, North Killingholme, recently excavated by Allen Archaeology (pers. comm. Chris Casswell)). Nonetheless, the distribution is still concentrated on the areas identified by Boutwood, and does seem likely to be indicative of the actual archaeological trend rather than a function of circumstances leading to visibility from the air (cf. Boutwood 1998).

▪ Date. It is generally accepted that pit alignments became popular in the Late Bronze Age and

are normally a first millennium BC phenomenon (cf. Fearn 1993). Dating evidence, however, is often elusive (e.g. Boutwood 1998, 39). At Messingham in North Lincolnshire, for example, a series of alignments were investigated but yielded no artefacts (Laskey 1979, 74). Where evidence is available, it typically indicates a Late Bronze Age/Early Iron Age date, as at Eye Kettleby in Leicestershire (Finn 1998; 2011) and Tallington, Lincolnshire (Gurney *et al*. 1993). At Mill Lane, Earl Shilton, Leicestershire, 14C dating suggests that the northern alignment of a pair filled in the Middle Iron Age (Jarvis 2011, 36). When sequences are discernible pit alignments can be found to precede restatement in ditch form, as in the Trent valley (pers. comm. David Knight) but also settlements of Middle Iron Age date, as in Northamptonshire (cf. Kidd 2000). Some while ago Hingley posited that the form of pit alignments may reflect their date (Hingley 1989b, 2-3); no trend seems to have emerged in this respect though the suggestion warrants further investigation. Given the questions around their dating, establishing dates remains a priority for investigation so opportunities to secure samples should be taken.

David Knight (pers. comm.) observes that evidence from the Trent valley suggests a later Iron Age date range for the majority (where chronological information is available), though with possible origins in the Late Bronze Age to Early Iron Age (e.g. Aston Hill: Knight and Howard 2004, 102-5). A close integration with the coaxial field systems north of Newark of Late Iron Age origin suggests continuity into the Romano-British era (Knight and Howard 2004, fig 5.18). It may be that in the Trent valley pit alignments form part of the trend towards enclosure and parcelling up of the landscape that is such a distinctive feature of the later first millennium BC.

▪ Case Study: Oakham Bypass. Detail from three cases where pit alignments have been excavated is instructive. Firstly, on the Oakham bypass, Rutland, a double pit alignment identified 28 pits of the northern row and 23 in the southern alignment; spaces between pits were generally equal to the width of the pits and the two rows were 4 m apart (Mellor 2007). In this case the pits were circular to oval. Pottery came from 17 pits but was either undiagnostic of date or potentially residual, bar one sherd of Early Iron Age pottery; animal bone came from four pits. Since the alignments respect each other, even if not contemporary, as is stated in the report, one alignment would have been visible when the other was dug (Mellor 2007). Ultimately the date/s of this double alignment are uncertain but the limited ceramic evidence could signify that the pits were open during the Late Bronze Age – Early Iron Age.

▪ Case Study: Milton Ham. The second case is Milton Ham, Northamptonshire, adjacent to the M1 motorway, where intervention examined a pit alignment represented by two phases. The first iteration comprised a series of pits and short lengths of ditch in two lengths (L1 and L2) separated by a gap of 155m; later this was restated as a continuous pit alignment: L3 (Leslie and King 2021, 14). The pits were sub-circular with a U-shaped profile, *c*. 1.8m in diameter and *c*. 0.75m deep. It was thought likely some had been fully truncated by L3. Pit alignment L3 in replacing L1 and L2 extended for at least 320m with 90 pits recorded, and continued beyond both limits of excavation to the north-west and south-east. One pit

contained a large bone assemblage interpreted as a structured deposit while three other pits are thought to have contained structured deposits (Leslie and King 2021, 15). The pits varied in characteristics but appear as four distinct segments. Two (undated) ditches parallel with the alignment, 10m to the north, were thought to define a trackway. Environmental sampling found a meagre presence of charred plant remains including some cereal grains and burnt hazelnut shells (Giorgi 2021).

▪ Brocklesby: Case Study. At Brocklesby Interchange in North East Lincolnshire (the third detailed case), a ring ditch interpreted as a Bronze Age barrow was flanked to the east and west by two linear alignments of pits labelled Groups 20 and 21 (Cavanagh 2020). Pit alignment 20 passed 50 m to the west of the ring ditch; here at least 23 pits were recorded in three groups. The individual pits had broadly similar dimensions of sub-square form with fairly clean silty fills. Gaps between the three groups may have been original to the design or the result of later truncation of shallower pits, or may indicate the presence of contemporary landscape features, such as earthwork banks or mounds, subsequently destroyed. One of the component pits of alignment 20 yielded animal bones, including articulated remains of a cattle foreleg, interpreted as a placed or ritual deposit (Holmes 2020, 229). Pit alignment 21 was located 75m to the east of the ring ditch broadly parallel to alignment 20. It formed a single regular line of at least 14 uniform sub-square pits, again with clean silty fills, containing no finds; as with alignment 20 the pits were approximately 1.4 across and 0.5 m deep (Cavanagh 2020). A potential parallel is documented at South Rauceby, in south Lincolnshire, where cropmarks consist of two parallel pit alignments either side of a group of barrow monuments (Boutwood 1998, 42, fig. 10b; cf. Cavanagh 2020).

▪ Distribution. In Derbyshire and Nottinghamshire pit alignments are present in the Trent valley. The Nottinghamshire HER in 2003 listed as many as 74 (pers. comm. Virginia Baddeley; RCHME 1960; Whimster 1989; Knight and Howard 2004, 102-5). The total for Lincolnshire was similar at *c.* 70 as of *c.* 2003 (cf. Boutwood 1998) and currently (March 2022) the aggregate stands at 92 (pers. comm. Richard Watts, Lincolnshire HER officer; the county records only note 72 as of first millennium BC date but that probably reflects the fact they are largely undated being only known from aerial photographs). North Lincolnshire, not formally designated as an area to be covered in the original Resource Assessment, currently has five records of pit alignments (pers. comm. Alison Williams, North Lincolnshire Historic Environment Officer, April 2022). A surprisingly high number of HER records of pit alignments is reported in the case of Derbyshire with the figure given as 305 (Steve Baker, Derbyshire HER, April 2022). Few examples have been excavated in these four administrative areas (see Table 4), though in Nottinghamshire at least seven more have been examined through excavation since the original version of this Assessment was completed (pers. comm. Tori Bedingfield, Nottinghamshire HER officer, March 2022). Three excavated examples are recorded from work at Hoveringham Quarry, Gonalston, in the county (Knight and Elliott 2008). During works for the A453 widening scheme by Barton in Fabis, Nottingham, a part of a pit alignment was exposed which lay *c.* 2m north of a settlement enclosure, the north ditch of which ran parallel with the pits. The features were all ascribed to the Middle Iron Age and dating evidence available did not discriminate the

enclosure and the alignment. A likely scenario is that the enclosure was laid out in respect of the pre-existing boundary formed by the pit alignment (Fairhead and Burgess 2013).

▪ Gardom's Edge. A pit alignment and associated banks recorded at Gardom's Edge, Derbyshire, is particularly noteworthy for its context and comparatively good preservation. Here the alignment extends east-west for 360 m, bisecting the Gardom's shelf and running parallel with the watershed between two dip-slopes (Barnatt *et al*. 2017, 125-33). The morphology of this monument varies over its course, surviving in places as open pits and in part the pits lay within a ditch, these changes suggesting periodic development or that it was all contemporary but created by different groups working only to a general concept. Evaluation trenching in 1998 and 1999 showed upcast from pit digging was discarded to both north and south and that the pits had been deliberately lined with clay, including those cut within the ditching; they would hence have held water. Radiocarbon dates for samples from primary fill and the old ground surface below the upcast determined both at cal. 350 BC to 10 AD at two sigma (Barnatt *et al*. 2017, 130), and so were centuries later than the date of the nearby settlement, at a time when the environment was one of grazed grassland. The alignment runs parallel to a stone bank of similar length, believed to be older and hence the features were thought to be related (2017, 130). The interpretation of this alignment is subject to discussion by the excavators, leading to a conclusion that the fact that the pits held water was key for practical and symbolic reasons; beyond watering for livestock, the experience of visual impact was, for the excavators, not to be underestimated (Barnatt *et al*. 2017, 131-3).

▪ Leicestershire and Rutland. In Leicestershire and Rutland over 50 pit alignments were recorded on the HER *c*. 2003. As of March 2022 that figure is now 123 pit alignments/possible pit alignments (pers. comm. Helen Wells, Leicestershire HER officer). In the past twenty years a number have been subject to excavation (see Table 7). At Soar Valley Way, Enderby, a chain of 62 pits running for 212 m was revealed in 2015, continuing beyond the limit of excavations, in an area of sand, gravel and till deposits near the Soar; a small amount of pottery was recovered from the 29 pits excavated and although Iron Age was not sufficiently diagnostic to provide a specific date to the alignment (Kipling 2016; Kipling and Beamish 2018). The alignment appears to be part of a wider system of land division that can be glimpsed from the checkerboard of interventions mapped for the environs of the lower Soar valley (Kipling and Beamish 2018, fig. 74).

▪ Northamptonshire. In Northamptonshire the number recorded on the county HER *c*. 2003 was 136 and 144 by 2007 (Deegan 2007, 84); fifteen years on and the estimate as of March 2022 is 250 for the county (pers. comm. Charlotte Walker, Northamptonshire HER Advisor, noting there are 277 present records which include some duplications). Here again they are principally known from cropmarks but development work around Northampton has resulted in the excavation of a firm sample of these features. Most pit alignments are associated with permeable geologies (as in the Nene valley, and in south-west and north-east Northamptonshire). Small numbers are, however, known on impermeable geologies, for instance, at Crick (Kidd 2000). The 2015 publication of the Covert Farm, Crick, report includes an area plan which shows (amongst other data) the distribution of pit

alignments across western Northamptonshire and eastern Warwickshire, highlighting their frequency, and in particular, as known, clustering (Hughes and Woodward 2015, fig. 70). Speed likewise shows pit alignments in the vicinity of the site at South Meadow Road, Upton, Northamptonshire, but this is a more local map (Speed 2015, fig. 20). Together these plots show how frequent these features can be, in some environs at least. Following an extensive discussion MOLA Northants make a number of recommendations for sampling, recording and publishing these features in their account of the two alignments encountered at Upton Park, Northampton (Wolframm-Murray *et al.* 2022, 111-2). At this site the alignments were traced for *c.* 0.5 km (c. 147 pits of one alignment and c. 110 the other) and thought likely to date to the Late Bronze Age – Early Iron Age, but might have been later.

▪ Pit Alignments in the Landscape: Interpretation. Although some pit alignments are isolated, they often occur in groups, forming elements within developing landscape systems. One of the best explored examples is the complex at Wollaston, Northamptonshire (Meadows 1995; 1996). Here, a co-axial pit alignment system covering an area of *c*. 2.5 km was instituted during the Late Bronze Age/Early Iron Age. Elsewhere in the region there are instances of two, three and four rows of pit alignments traversing the landscape. These multiple alignments may represent 'additions' to an original alignment (cf. Pollard 1996). At St Ives in Cambridgeshire, just south of the East Midland region, a riverine association is clear (Pollard 1996). Some pit alignments are suggested to mark the limits of river valley flooding (Rylatt and Bevan 2007, 221), and Warren Farm, Leicestershire, appears a case in point (Thomas 2013, 110).

The interpretation of pit alignments is a matter of debate (cf. Taylor 1996; 1997; Thomas 2008). This, in considerable part, arises from the fact that their nature does not immediately suggest a clear practical function (Rylatt and Bevan 2007). Taylor (1996) suggests that they developed from pit clusters of later Bronze Age date, as recorded in Northamptonshire, which were perhaps markers within the landscape. Clay (2001) infers that the pit groups recorded at Lockington and Castle Donington (Meek 1995; Coward and Ripper 1998; 1999) in the Trent valley, were clusters of this type. Pit alignments often appear to have been constructed in relation to other 'places' in the landscape, both natural and cultural, not least earlier prehistoric ceremonial and burial monuments (cf. Boutwood 1998, 37), between which they may extend (Taylor 1997) and rivers and ridgelines (Thomas 2008). Whether or not they were constructed with the intention of describing 'owned' territories/'tenure', or for demarcating certain rights, their appearance points to a major reorganisation of landscape or at least a re-definition of existing boundaries (possibly previously expressed by other means), or new as a consequence of pressure on land (cf. Thomas 2008). Boutwood noted, a correlation between pit alignments and water courses in Lincolnshire; the explanation for this is unclear but she suggested that this may have had both practical and ritual/symbolic elements relating to access to water (for pasture animals) and in the emphasizing of natural boundaries (Boutwood 1998; cf. Hingley 1989a, 143-4).

▪ Swarkestone Quarry. An unusual discovery at Swarkestone Quarry, Barrow-upon-Trent, Derbyshire, in 2021, comprised the remains of a timber post alignment, exposed over

80 m where the cut oak (de-barked) timbers were placed in discrete post holes at close intervals (Allen *et al*. 2022). The proximity of these settings was much closer than with the pits of pit alignments discussed above. The lower parts of the timbers had survived; dendrochronological study could not place these within a master sequence but a range finder radiocarbon date shows the feature to be Iron Age. The monument was inserted on the top of a sand bar but extended into deposits of a former palaeochannel and had been constructed over (or had been maintained for) some 150 years, though the function of this feature, which had no other associations, is unclear (Allen *et al*. 2022).

7.3 Linear Ditch Systems

▪ Introduction and Character. Monuments of this type are numerous in the East Midlands and take the form of single, double, triple and even quadruple parallel ditches (Table 9). Triple ditches are particularly well recorded. Jones (1988, 19) and Boutwood (1998) have discussed what the duplication of these ditches may represent. Detailed study shows that these are often far from straightforward features. Some were long-lived, some show re-cutting and some are certainly multi-period; they occasionally include pit alignments; ditches may have been added in the life of the monument; and field investigations have, on occasion, revealed more ditches than are apparent on aerial photographs. The biographies of each system are likely to have varied, while sequences and associations are detailed. Normally they are traceable for a few hundred metres, although some have been traced for as much as 3 km. They are not particularly regular in form and alignment, but typically do not respect topography. Again they are a distinctive, but not unique, aspect of the region. Analogous monuments occur elsewhere in eastern England, especially in East Yorkshire, Norfolk and Hertfordshire (e.g. Stoertz 1997). Most are known from aerial photography, but at 'The Larches', Stowe Nine-Churches, in Northamptonshire, a length of a triple ditch system is extant as an earthwork for over 600 m, continuing as a cropmark for a further kilometre (Moore 1973; RCHME 1981, 179-81). In addition, two extant earthworks are recorded by Boutwood (1998) in Lincolnshire. Like pit alignments, they are particularly well-attested in Northamptonshire, Leicestershire and Rutland, and south-west Lincolnshire (35 were known in the latter county *c.* 2003). A double ditched linear feature examined at Bonby and Saxby All Saints parishes, North Lincolnshire is identified as a multiple linear boundary of Iron Age date (North Lincs HER MLS20609). More than 15 double or triple ditch systems are documented in the Leicestershire and Rutland HER.

[Table 9 Here]

▪ Dating. Without excavation, these ditches are not closely dateable. Yet sampling does not necessarily result in firm evidence (cf. Mellor 2007), particularly *vis-à-vis* the date of their cutting. Their debut as a monument type seems to belong to the Late Bronze Age or Early Iron Age. The primary fill of the Ketton system, for instance, dates to the earlier Iron Age, although the monument continued in use into the Late Iron Age (Mackie 1993). A long-lived multiple ditch system at Rectory Farm, West Deeping, which was instituted after the Late Bronze Age co-axial field system (see Section 2.6) produced

radiocarbon dates (obtained from material in the primary fills of two ditches) indicating a Late Bronze Age to Middle/Late Iron Age date (Hunn and Rackham forthcoming; Savage *et al*. forthcoming). Excavations on a triple dyke on the northern outskirts of Lincoln yielded Late Iron Age pottery from lower ditch fills (Palmer-Brown 1993b); between two of the ditches was the base of an eroded bank. At Greetwell, Lincolnshire, the pottery from one ditch was typologically Middle Iron Age, while another contained Late Iron Age or early Roman pottery (Boutwood 1998; Lincolnshire HER). In the case of the triple ditches examined on the Oakham bypass Late Bronze Age pottery was the latest ceramic type represented though it may not be reflective of the start date and use of the system; low volumes of botanical remains were found to be present, which shed no clear light on the nature of activities in the area (Mellor 2007, 12).

▪ Distribution. The distribution of multiple-ditched linear boundaries includes a band across the east and south of the East Midlands from the Humber to Northampton (cf. Boutwood 1998). The limestone geology here gives rise to particularly responsive soils (e.g. Everson 1978; Jones 1988, 13). The absence of such features from eastern Lincolnshire seems to be genuine as the soils of the Wolds are likewise mainly conducive to cropmarks. Pickering (1978) noted what he believed to be a tendency for some of the systems to either follow the alignment of the Jurassic Limestone Ridge, or to lie at right angles to it (cf. Everson 1978; 1979), running therefore from west to east, and north to south. A possible parallel can be found in the Chilterns, where multiple ditches are situated at right angles to the Icknield Way (Bryant 1997). Pickering suggested that the features were elements of a widespread network. In fact the predominant alignment is not quite as Pickering had thought, but rather northwest to south-east and south-west to north-east.

▪ Role. There is a general consensus that the multiple boundaries were not 'defensive'. They would not, in many cases, have presented an effective barrier, although if combined with banks, palisades and hedges they may have been. Nonetheless they seem likely to relate to controlling the movement of people and livestock; they may have served as both boundaries, and served, at least in some cases, as trackways. A quadruple linear ditch system is known as a cropmark from near Allington, south Lincolnshire, with a rectilinear enclosure adjoining on one side, perhaps therefore an animal pen (Pickering 1978). In searching for associations between multiple ditches and other anthropogenic features, Boutwood noted a correlation with 'washing-line' enclosures (Boutwood 1998). These small enclosures may have been pounds for stock, as at Brauncewell, Lincolnshire (Taylor 1998; cf. Pryor 1996; 1998b). 'Junctions' of these features are known at several locations, as for instance, at Long Bennington on the Nottinghamshire-Lincolnshire border (Pickering 1978; Fearn 1993). In Northamptonshire, the association of long linear ditch systems with axial boundaries and settlements is comparatively clear (cf. Kidd 2000), as at Ecton/Sywell in the Nene valley (RCHME 1979, 47–50 and 144-5).

There are no certain cases of dyke systems adjacent to aggregated settlements, as occurred further south in the Late Iron Age, for example, around Colchester and Chichester. That said, as noted above, there are substantive single linear ditches running alongside the Middle

Iron Age agglomerations at Beaumont Leys, Humberstone, Covert Farm, Crick, Stanwick (Northamptonshire), Coton Park and Tattenhoe Park; these are not of the same order of scale, nor perhaps function, as those seen at *oppida* sites of the Late Iron Age but perhaps they are an early iteration of an idea and practice that was to become more marked with time. Of note, whilst as discussed, dykes occur to the east and north of Lincoln (Everson 1978; 1979; Field 1980; Palmer-Brown 1993b), these are morphologically no different from the dykes occurring elsewhere in the region, though containing Late Iron Age pottery; hence they do not immediately suggest themselves to be indicative of an oppidum at Lincoln. Besides, no sizeable settlement of any standing is presently known at Lincoln in the pre-Roman period, though there are suggestions of a presence (cf. Jones and Darling 1988). Accordingly the question of an Iron Age settlement of some size at Lincoln remains an open one.

7.4 Discussion

A few decades back pit alignments were a little known curiosity; now they are almost a common place phenomenon within first millennium BC archaeology in the region, frequently encountered by means of current approaches to archaeological excavation. Multiple dykes likewise have become a familiar aspect of first millennium records and discussion. These features are generally understood as representing boundaries within landscapes (cf. Leslie and King 2021). At first, perhaps, the pit alignments would have allowed people and animals to pass through for grazing and access, including access to potential grazing/watering, natural features and made places of earlier date; later, examples show ditches replacing pit alignments in a range of cases indicating closure of access as land is divided. Examples of this 'continuity' in boundaries, albeit in changed manifestation, are noted above (Section 7.2), while Knight (2007, 210) provides further instances. A narrative that pit alignments are an initial 'softy softly' means of defining space and demonstrating 'rights' that then, with time, harden with restatement in continuous barriers is difficult to elude as it prevails in the literature implicitly or explicitly (see below).

There is evidence that these various forms of boundary were a focus for votive and structured deposits during the Iron Age, indicating perhaps their importance, as symbolic and liminal features. This is not something which should occasion surprise (cf. Hingley 1990a). Pottery, animal bone and, notably, fragments of two Nauheim brooches and a metalworking mould were recovered from the fills of the Ketton dyke system (Mackie 1993). A horse long bone had been inserted vertically into one of the pits of the Long Bennington alignment during its silting (Fearn 1993), while at Tallington horse and human skull fragments occurred in pit fills (Gurney *et al.* 1993). At Gretton the terminal pit of an alignment contained a copper alloy ring-headed pin probably deposited, it was suggested, in association with textiles (Jackson 1974).

Pit alignments and parallel linear dyke systems occur in similar areas (cf. Boutwood 1998, figs 2 and 8). Often, though, they may have served different functions, as detailed scrutiny reveals that they can occur in mutually exclusive locations. Caution is required as the

relationship between pit alignments and ditch systems is neither straightforward, nor well understood. Taylor (1996) had noted cases where pit alignments were replaced by ditches while the Milton Ham example is detailed above (Section 7.2). An earthwork ditch and bank at Harlestone Firs, Northamptonshire, for example, seems to continue an adjacent pit alignment known via cropmarks (Cadman 1995). A pit alignment at Eye Kettleby, Leicestershire, was replaced by a ditch (Finn 2011). A group of triple ditches in the Brampton/Pitsford area north-west of Northampton that cut across spurs of higher ground, isolating them, may be contemporary with a complex of pit alignments (cf. Kidd 2000). Finally, there are cases of parallel ditches associated with parallel pit alignments, and of two pit alignments and a parallel ditch. Considering the multiple linear ditches and pit alignments examined on the route of the Oakham bypass in Rutland, Mellor develops a thoughtful discussion around the possible function of these features in a report which underlines the challenges they can present due to lack of firm dating indicators and functionally indicative categories, especially when away from settlement activity and hence likely to lack cultural debris (Mellor 2007).

Whilst not unique to the East Midland region (cf. Wigley 2007; Thomas 2008), pit alignments and linear dyke systems are particularly well represented, and were clearly significant. They hold much potential for investigating social relations and organization, as well as questions relating to the phenomenology of landscape. Our understanding of long distance linear monuments continues to improve. It is now clear that many were long-lived and they probably served a variety of functions, with these changing through time: hence inclination to generalizations may not be appropriate. Plotting these monuments via the National Mapping Programme of the RCHME, and studying their character and distribution using GIS and other tools, has furthered understanding. The matter of their differential visibility according to the nature of the subsoil still requires further investigation. One obvious question is how these features relate to changing agricultural practices, for instance to a putative end to transhumance, and the shift from apparently 'open' land to defined 'domains' (cf. Bishop 2000). Their relationship to the brickwork plan fields of north Nottinghamshire and the co-axial field systems downstream from Newark, remains a matter for further investigation for although that system appears to be of much later date than the conventional dating of pit alignments Knight has pointed to extensive evidence for a late institution and currency of pit alignments in the Trent valley region (Knight 2007, 213; cf. Knight and Howard 2004, 104; cf. Garton 2008).

By their very existence and scale these types of linear statements, as with hillforts, provide an index of local communal organization and political or social structures. It remains uncertain whether they relate to:

(i) local imperatives to land division amongst comparatively modest sized communities, as Boutwood has suggested (1998), or

(ii) were, as Barnatt saw, with the emergence of hillforts in the Peak District in the Late Bronze Age and Early Iron Age, indices of greater social differentiation and competition (Barnatt 1999), were

(iii) manifestations of tribally organised large-scale systems of demarcation (cf. Hingley

1989b), or

(iv) arose from a combination of motivations..

It is equally unclear to what extent they represent functional as opposed to symbolic/ceremonial meanings at a time when large scale monument construction was conspicuously absent from the archaeological record. That they were brought into being demonstrates the powerful resource base of the period, in demographic, economic and 'political' terms. The construction of such boundaries – if, as is generally surmised, they relate to the definition of 'owned' territories – presumably played a role in the generation and maintenance of group identity (cf. Sharples 1991). Hence, their further investigation is potentially very important for our understanding of society at this time. More dates for these monuments are accruing and in the future should assist in clarifying sequences through the region.

In sum, at present pit alignments and multiple linear ditches are somewhat enigmatic features, challenging attempts at definitive categorization and characterization. Difficulty in understanding their function and meaning in part arises from the limited evidence their fills typically yield but also because they probably had different purposes at different times and in various places. Accordingly, a dual approach is sensible. This can be both contextual, having potential to comprehend individual instances on the basis of particular circumstances, while at the same time considering these classes of monument as categories of choice and community action by people marking and separating the landscape for their reasons (cf. Thomas 2008). Assessment of instances on a piecemeal basis as they fall within development work is unlikely to result in comprehensive understanding. Rather field observations combined with GIS mapping and the analysis GIS can offer as a plotting tool, combined with both a quantitative and contextual approach to the cases as a whole should distil firmer trends.

8. Craft, Industry and Material Culture

8.1 Introduction

Evidence for Late Bronze Age and Iron Age crafts and artefact production has grown considerably in the past twenty years with the recovery of much new material and the publication of earlier finds. The evidence largely parallels the picture elsewhere in central, southern and eastern England. Within the region, as nationally, models exploring the social organization of these crafts have been slow to emerge, with some notable exceptions (e.g. Henderson 1992a; Morris 1994; De Roche 1997; Hingley 1997; Lane and Morris 2001; Cootes and Quinn 2018; Laing 2022). The development of such models in this domain needs to be encouraged. Firmer information on medium and long distance exchange networks has continued to emerge (see Section 8.10).

8.2 Wood

The study of woodworking, carpentry, 'engineering' in wood, wood management, charcoal

production and trade in wood has been very much a back-seat passenger in the advance of later prehistoric studies in Britain. Evidence is partial and typically indirect, yet wood held a central role in culture and society at this time. Wood, and its by-products, were fundamental in the great majority of structures of all types, and especially buildings. Hence the use of wood is apparent at virtually every site of the period, usually implicit from other remains, but occasionally manifest in preserved wood of some form; the survival of site remains at Must Farm, Cambridgeshire (Knight *et al*. 2019) is shedding new light on wood use in later prehistory, with one particularly noteworthy aspect being the highly pragmatic, unelaborated, manner in which the buildings had been assembled; was this representative of common practice? Wood and charcoal were, of course, crucial domestic fuel sources, and were required on a large scale by the Middle Iron Age, if not earlier, in order to undertake the production of metals, especially iron, salt and for other processing and craft activities. Maintenance of these various supply needs will have been a key social issue (De Roche 1997; Willis 1999).

It seems certain that managed woodland was maintained across the region (e.g. Long *et al*. 1998; cf. Visser 2010). A long-range trade in wood and timber products is conceivable, likely even, but similarly for specialist wood products, skills and certain timbers, and for particular projects; it seems likely, for example, that wood used in the construction of some of the hillforts of the Welsh Marches derived from a wide hinterland. The huge trunk from which the Hasholme logboat of East Yorkshire was fashioned (Millett and McGrail 1987) testifies to the survival of some magnificent ancient woodlands, while earlier, wolf oaks had been used to manufacture the Dover Bronze Age boat dated to the mid-second millennium BC. The many dimensions of wood use in later prehistoric societies warrant a much higher profile than they currently have.

In 2001 two logboats were excavated at Fiskerton by the Witham (see Section 4.5.1), one being well-preserved (Pitts 2001; Field and Parker Pearson 2003; Markoulaki 2014). The tying down of one of these well-crafted logboats below water, when unused, appears to have been an action of votive sacrifice. Three logboats and a well-preserved and well-fashioned spoked wooden wheel were previously recovered at Holme Pierrepont in the Trent valley (MacCormick *et al*. 1968; Markoulaki 2014). One of the logboats is radiocarbon dated to the Middle Iron Age and the other two are viewed by Markoulaki to be Iron Age (Markoulaki 2014, 119). The wheel had been typologically attributed to the later Iron Age or early Roman period but an Iron Age attribution seems highly likely considering the depositional circumstances (Markoulaki 2014, 199-22). The wheel may be an offering. Given the nature of the regional environment, further finds of wooden boats of the first millennium BC can be anticipated from time to time. The Humber and its immediate hinterland have produced an important corpus of Bronze and Iron Age logboats and other craft (McGrail 1990; Hill and Willis 2013).

Finds such as the wooden bowl from Washingborough (Section 2.5.3) and the remarkable find from Gonalston, Nottinghamshire, of a well-preserved oak shovel, can be taken as demonstrable of the role of wood in everyday life in the first

millennium BC, the latter coming from a water-logged ditch (Knight and Elliott 2008, 169, fig.8).

8.3 Textiles

Evidence for textile manufacture in the East Midlands is widespread, but thin. Sites yield at best generally only a few artefactual items, though there occur occasional groups of loom weights and associations of artefacts likely to have been used for textile production. The items conventionally defined as clay loom weights, spindle whorls and 'weaving' combs could have been put to a variety of uses and so qualification is needed to avoid their being automatically taken to indicate textile production (see below). Quantities of artefacts relating to textile manufacture from individual sites across Britain are likewise typically modest although they were sufficiently well-known for Hodson in the early 1960s to designate the 'weaving' comb as a type-fossil indicator of the Iron Age in Britain (Hodson 1964). A typology of weaving combs had been forwarded by Hodder and Hedges but sequencing the known types has not proven possible (Hodder and Hedges 1977); an origin in the later Bronze Age seems likely.

Clay loom weights are typically large triangular blocks with a perforation near the apex of one corner for suspension. They could be used for various pursuits and are often cited as potentially roof weights used in combination with netting to hold thatching in place; multiple purposes can be borne in mind. Such artefacts are known from Ancaster Quarry, Aslockton, Billingborough, Burrough Hill (Farley *et al*. 2017, 97), Castle Donington (Willow Farm), Dragonby (from Late Iron Age contexts), Humberstone (Elms Farm), Gamston, Gringley-on-the-Hill, Grove Farm, Enderby, Melton Mowbray (37 fragments, Late Iron Age or possibly early Roman: McNulty 2021), Normanton le Heath, Weekley (Jackson and Dix 1987, fig. 28 and M90 103), Harlestone Quarry, Northampton (Clarke *et al*. 2017) and Sandy Lane, Northampton (Garland *et al*. 2019). At Willow Farm five vitrified loom weights were recovered from a post-hole at the entrance to a Late Bronze Age roundhouse and may represent a structured deposit (Ripper *et al*. 2017, 24, 38). Of these sites both the Aslockton site (Hamshaw-Thomas 1992) and Elms Farm, Humberstone (Charles *et al*. 2000, fig. 53/3) produced bone weaving combs, whilst Ancaster Quarry and Dragonby also yielded clay spindle whorls, with a bone spindle whorl from an Iron Age context at the latter (May 1976a, 38; May 1996), while Weekly produced a possible spindle whorl of clay from an Iron Age context (Jackson and Dix 1987, M88 91). At Covert Farm, Crick, fired clay items from Late Iron Age contexts included pieces suggested to be 'from perforated oven bricks or weights' with an illustration showing fragments from four large triangular weights of the type often taken to represent loom weights (Hughes and Woodward 2015, 82, fig. 64). At Harborough Rocks and Cave, in the White Peak, bone pins, spindle whorls and a weaving comb were recovered, with pottery types suggesting an Early Iron Age date (Hart 1981, 77). The evidence from Harborough may or may not be taken at face value. No loom weights were recovered, leading Hart to conclude that 'only the preliminary work was conducted in the cave, weaving and finishing were carried out elsewhere' (*ibid*., 77). Half of a spindle whorl was found at the enclosure site at Station Road, Elton-on–the-Hill, Nottinghamshire, where it is likely to be of Middle

Iron Age association (Brudenell 2018, 87, fig.5). At Foxhills, Brackley, an undecorated antler 'weaving' comb (unused or hardly used) and a needle were present, the latter in a typical form but also, unusually, fashioned from antler (Riddler 2019). From elsewhere at the Brackley agglomerated site, specifically Foxhills, a further comb, two pin beaters and a bobbin manufactured from bone were recovered (Morris 2019). Riddler (2019) notes two other weaving combs from Northamptonshire. A 'weaving' comb found during fieldwalking at Kirmington is reported by Leahy who summarizes discussion over interpretations of their use (Leahy 1985).

Textile impressions on Iron Age briquetage fragments from Lincolnshire (specifically Ingoldmells, Orby and Helpringham Fen) show a variety of weaves and clothes in use (Kirkham 1985).

8.4 Rotary Querns

Querns have been considered above in terms of chronology, preferred stone types and forms (Section 4.5.3). Here some general points can be made. As noted in Section 4.5.3 the introduction of rotary querns was important as it enabled flour to be produced more rapidly than had been possible hitherto through the use of saddle querns for this purpose. Given cereals were the main staple food of the British Iron Age this technological change was of great significance as it took place when the population was evidently increasing. The relative efficiencies of milling using rotary querns will have facilitated feeding a growing population.

As well as forming indices of arable economies, querns can often be provenanced via petrological study, enhancing our knowledge of trade and exchange in the later first millennium BC (Knight 1992; Ingle 1994; Kidd 2004). Querns of Millstone Grit occur across the East Midlands (e.g. Wright and Firman 1992) deriving from Yorkshire and perhaps the southern Pennines in Derbyshire. Rotary quern production and/or finishing is suspected at several sites in the region. Some of the querns found at Ancaster Quarry were sandstone (May 1976a, 136) and probably derived from the Lincolnshire Wolds. Spilsby Sandstone from an exposure in the Caistor/Nettleton area of the Wolds escarpment (and/or possibly at Elsham) was evidently exploited for quern manufacture, with examples travelling west and north into the heartland of the East Midlands and to the Humber region (e.g. Wright 1996; Willis 2013b). A rotary quern from Elms Farm, Humberstone, Leicestershire, occurs in Lincolnshire Limestone, which is a less preferred geology (Roe 2000). Some querns were perhaps fashioned locally from glacially deposited boulders but if so they represent a small proportion of the querns in use. Due to the specifics of sources and the ability to provenance these items, this artefact class represents an important indicator of distribution systems, that otherwise for later prehistory are often scant. It is possible that fragments of querns, especially in the case of saddle querns but also of rotary types, are not consistently recognized by excavators who may need instruction on what to look out for.

8.5 Worked Bone and Antler

Bone and antler artefacts were a regular part of life in the first millennium BC. As with animal bone assemblages in general artefacts made from bone and antler are unlikely to survive in acid soils and may otherwise be gnawed or ingested by dogs and other savaging animals, hence survival will be partial.

Production of bone and antler tools, and for parts of composite items, was probably very often undertaken at the sites where such items were used. In addition to tools such as pegs, points, combs and awls (cf. Section 8.3), these materials were fashioned as handles for tools, often metal tools, with the bone or antler component adapted and finished for ease of grip and comfort in the hand where necessary. As materials that could be shaped in numerous ways a great many uses are known (for instance a bone toggle was recovered associated with one of the Iron Age roundhouses at the Brocklesby Interchange site (Cavanagh 2020, 26, 188)). Beyond utilitarian functions these materials could be decorated and so in the round these were flexible resources in the hand of the craft worker. Some specialist production is known in Britain during the Roman period, and may have also occurred in the first millennium BC. Working of tooth ivory was probably regionally specific in the first millennium BC, although not, as far as we know, in the East Midlands, but horn will have been worked, for instance, for inlay.

In sum, a range of worked antler and bone objects have been recovered in the East Midlands. Sites with such finds include Billingborough (Bacon 2001), Dragonby (May 1996), Elms Farm, Humberstone (Allen 2000), Fiskerton (Olsen 2003), Wakerley (Jackson and Ambrose 1978; Gwilt 1997). Washingborough (Allen 2009) and Wilby Way, Wellingborough (Thomas and Enright 2003); the items present at these locations are likely to be typical of the wider picture. Such artefacts appear to have been associated in particular with leather, horn and textile working in the region (as elsewhere); decorative in-lay and even whistles or recorder type instruments are likely to have been fashioned too.

Wilby Way, Wellingborough (Thomas and Enright 2003) and Manor Farm, Humberstone (Browning 2011b, 111-3) produced significant evidence for the working of red deer antler (usually thought to be collected antler from spring shedding). A hammer head fashioned from red deer antler is a noteworthy find, from the Early Iron Age enclosure (Area 1) at Station Road, Elton-on–the-Hill, Nottinghamshire, and is dated to 761-414 cal. BC at 95.4% probability (Brudenell 2018, 85; Ridder 2018). At Thrapston an antler pick with use wear was recovered from the perimeter ditch and showed evidence of the method of trimming in order to make the tool (Hamilton-Dyer 2001). The antler cheek piece from a horse bridle recovered at Washingborough has been mentioned above (Section 2.5.3). Evidence from Burrough Hill, Leicestershire, indicates working of antler and bone at the hillfort (Thomas and Taylor 2015, 32).

8.6 Iron

Iron working in Iron Age Britain became quite widespread since varieties of ore were

available in many areas. Iron's replacement of copper alloys as the leading technology was assisted by the relative ubiquity of iron ore, since in theory it released communities from the presumed power systems that existed with the trade in bronze and bronze artefacts. Despite the advantages of iron over bronze for tools and weapons in terms of strength and durability uptake of iron technology was evidently gradual in Britain and it is often speculated that the technological knowledge of the smelting of iron and its working was socially controlled. The production of iron is likely to have been a major regional industry in the East Midlands given its comparatively rich iron sources. To date evidence on the scale of the Vale of York (Halkon and Millett 1999) and the Forest of Dean (Jackson 2012) is lacking. Little is known about the likely exploitation of ironstone and other iron sources in the region during the Middle Iron Age, or for that matter during the Late Iron Age (Condron 1997; pers. comm. Jane Cowgill). However, the iron smelting at Greetwell Hall Farm, Messingham, North Lincolnshire, is the earliest known evidence of iron production in Britain, dated to *c.* 780-590 cal. BC (North Lincs HER MLS21192; SLS3855, SLS5508, SLS7237). The strongest evidence for fairly widespread smelting at this time comes from Northamptonshire (Kidd 2000; 2004; Deegan 2007, fig. 6.19) with significant cases of furnace preservation, as at Priors Hall, Corby (Hall 2006; 2008). Iron working on the Limestone of the Jurassic Ridge and elsewhere seems to have been or become centralized and locally specialized (with working sites not necessarily on top of direct or modern ore sources). The excavations at Great Oakley demonstrated that nodular ores were being extracted and smelted in the earlier Iron Age (Jackson 1982). Possible smelting furnaces of Iron Age date occur there and at Wakerley (Jackson and Ambrose 1987; Bellamy *et al*. 2001) and Harringworth (Jackson 1981), although Wakerley apart, the Rockingham Forest area lacks evidence (Bellamy *et al*. 2001). Covert Farm, Crick, has produced an otherwise rare example of iron bloom (Starley and Tulp 2015, 263), probably brought to the site for further working - perhaps, it is suggested, as an alternative to the more frequently encountered currency bars of the period. Much smelting slag has been found at the Castle Yard hillfort (Knight 1987), and a number of slag scatters elsewhere in the county are thought likely to be of this date.

Only limited evidence for metal smithing is logged for the Middle Iron Age, although such activities were probably fairly common rather than exclusive. Smithing slag was found in association with the Sleaford palisaded enclosure, and might be a significant element of the identity of that site. Industrial residues indicative of ironworking are also reported from Wanlip (Beamish 1998, 84). During the later Iron Age ironworking, in the form of routine smithing, was probably widespread, but was usually limited to small-scale operations such as the repair and fashioning of domestic and everyday tools. Evidence occurs, for instance, at Normanton le Heath (Thorpe *et al*. 1994), Elms Farm and Manor Farm, Humberstone, where several anvils were recovered (Charles *et al*. 2000; Thomas 2011a). Smithing also occurred at Covert Farm, Crick (Starley and Tulp 2015), while Rampton, Nottinghamshire (Ponsford 1992), produced particularly important evidence.

Two currency bars were forthcoming from the site at Leicester Road, Melton Mowbray, found together at the terminal of a ring ditch (Huddart and Allen 2021), while hoards of 80 and

40 (or more) such bars are recorded, respectively, from Burton Latimer (Deegan 2007, 110) and, where they were founded to be carefully placed, Gretton (Jackson 1974), Northamptonshire. Others are also known from Northamptonshire, specifically from Hunsbury hillfort and the enclosure at Wootton Hill (Deegan 2007, 110). A hoard of four bars, probably from Frodingham, in North Lincolnshire, is illustrated by May (1976a, 194, fig .97). These objects are of course a category in themselves and may have circulated and been understood as 'finished items', though with the potential for transformation through further working (cf. Hingley 1990b; 2005).

8.7 Non-ferrous Metalworking

A series of publications by Dungworth have enhanced understanding of non-ferrous metalworking in central Britain through the Iron Age (e.g. Dungworth 1996; 1997). Copper alloy working is attested at Covert Farm, Crick, which yielded a crucible (Starley and Tulp 2015, 264) and Elms Farm, Humberstone (Charles *et al.* 2000). From Dragonby evidence of iron, copper and even silver working of Iron Age date was recovered (May 1996, 313-7). In North-East Lincolnshire a major find of copper alloy working debris covering refining, mould-making, and casting, dating to the later Iron Age, was excavated at Weelsby Avenue, Grimsby. Composition analysis of the finds from this site together with the spatial distribution of the material has shed valuable light on the production process and its stages (Foster 1995; cf. Section 4.2 for references); items produced related to horse and chariot or cart fittings. Clay mould fragments occasionally occur elsewhere, as at Billingborough (Chowne *et al.* 2001), while a mould was recovered from the fills of a triple dyke system at Ketton (Mackie 1993). These finds may indicate small scale copper alloy working (in the case of Billingborough, perhaps also for horse furniture). At Coton Park, Rugby, just outside the East Midlands region, important evidence of copper alloy casting was recovered, having been recently published (Chapman 2020).

Questions remain around the possibilities of lead extraction (and from that refinement of silver) in Derbyshire during the first millennium BC, especially given the occasional presence of lead artefacts from site contexts within the region dating to this period. Equally, still little is known regarding the exploitation of copper-bearing ores.

8.8 Salt Manufacture and Distribution

Salt was clearly an important commodity through the first millennium BC and salt-extraction along the Lincolnshire coastal margin, Witham estuary and in The Fens was evidently very significant (Baker 1960; 1975; Hall and Coles 1994; Healey 1999; Ellis *et al.* 2001; Lane and Morris 2001; Kirkham 2001; see Section 4.2 above). In the Lincolnshire Fens and along the North Sea coast of Lincolnshire many salt manufacturing sites are known, especially from the Ingoldmells area. This evidence of production in Lincolnshire is mainly of Middle and Late Iron Age date. Less by way of production sites is known in the area of North-East and North Lincolnshire, that is along the Humber and its estuary, though work on the Humber Bank in advance of development has brought forth new information (Headland Archaeology 2010, 18; see too below, this Section). A particularly noteworthy site is the saltern in Tetney parish

investigated in the 1990s and radiocarbon dated to the Late Bronze Age, an unusually early date for this activity in so far as salterns of this date are rare (Palmer-Brown 1993a). In The Fens salt production in the Late Bronze Age – Early Iron Age is attested at Billingborough (Chowne *et al.* 2001), supported by a series of radiocarbon determinations. Features associated with salt production were not well-preserved in this case, which unfortunately is a common aspect of the extant evidence.

Many salt production sites are known in the western and southern Fens (Healey 1999; Lane and Morris 2001). Here salt making was clearly an extensive, and presumably economically important, undertaking from the Middle Iron Age onward. In the northern Fens only the area around Wrangle has yielded evidence for this industry. The sustained exploitation of this resource will have created an important commodity (used in various ways) for trading and perhaps was a significant means of wealth creation. Lane and Morris (2001, 385–8) have proposed a model for the development of salt production in The Fens beginning with an 'opportunistic' phase during the Middle Iron Age when production was seasonal and centred away from the main domestic base, linked with seasonal animal grazing. Later, the landscape was exploited all year round with permanent occupation, this phase being tentatively dated to the Late Iron Age. On balance though, the extraction of sea salt is likely to have remained seasonal. Recent PhD research including fingerprint analysis of east coast saltern assemblages by Laing suggested the forming of the briquetage and presumably therefore the salt-winning process was a male activity (Laing 2022); Laing likewise saw this as a seasonal undertaking.

As mentioned, less is currently known from the area of the Humber, although some groups have been forthcoming. Recent finds arising from the road improvement works at Brocklesby Interchange and Rosper Road (A160/A180), in North-East Lincolnshire, produced important collections of briquetage, though no salterns were identified (Cavanagh 2020). Lane states of these collections that 'The presence of only two pedestals, the lack of bars or clips and the very limited numbers of structural pieces … strongly suggests a pre-Late Iron Age date', as does the nature of the briquetage fabrics which are shelly wares (Lane 2020). He suggests a date within the Late Bronze to Early/Middle Iron Age for these finds despite the fact they were largely recovered from contexts ascribed to the later Iron Age. Two other sites in South Killingholme produced briquetage attributed to the Late Bronze Age/Early Iron Age and the Late Iron Age (Headland Archaeology 2010, 18; Lane 2020).

Briquetage is the term ascribed to both the fired fashioned clay used at production sites for forming pans, trays, troughs, pedestals, etc. and, in some cases for storing and transporting the salt product. The latter can be termed 'transport briquetage' as it leaves the production site. Transport briquetage has been regularly recognised for what it is on settlements across the western part of the region for the past three decades or so. However, this material is from Cheshire, not the east coast. Mapping the incidence of these find-spots of Cheshire briquetage provides a vital indicator of trade and exchange (see Section 8.10). Briquetage is, however, completely absent from settlements in the hinterland of The Fens and central and northern Lincolnshire, the 'home market' area in which the Fenland and North Sea salt would

have been consumed, and perhaps beyond (cf. Lane and Morris 2001). Not a single consumer site can be identified, in contrast with some other areas where salt was conveyed in distinctive containers from Cheshire. The salt from The Fens and the North Sea coast must have been conveyed in perishable organic containers such as leather/skin or cloth bags perhaps held within basketwork, or possibly in coarse pottery vessels that we presently do not identify as salt containers, but not in distinctive ceramic containers that are recognized as 'transport briquetage'. Wild identified a textile impression on Lincolnshire briquetage as sack-like leading Kirkham to point up historic references to wrapping salt in cloth for transportation (Kirkham 1985), so this may be the answer. Nonetheless, as it stands, the reach and network of distribution through time of these east coast manufacturing sites cannot be mapped.

8.9 Pottery

Pottery is by far the most common artefact type surviving for the period in the East Midlands but as noted above its classification and dating are not straightforward due to the nature of its types. The East Midlands has yielded numerous collections of pottery of first millennium BC date; from Northamptonshire, for example, over 500 ceramic collections are documented. A number of regional overviews are helpful. The British Archaeological Report by Challis and Harding encompasses part of the region and although dated includes illustrations of types by site (Challis and Harding 1975). Other regional and sub-regional overviews and studies include those of Cunliffe (1974; 1991; 2005, chapter 5), Elsdon (1992a; 1993), Jackson and Dix (1987), Knight (2010) and Willis (1998). Two contributions by Knight (1984; 2002) are particularly important for the study of first millennium pottery from the region, the latter establishing a chronological framework. A resource covering England is the *Gazetteer of Later Prehistoric Pottery Collections of the first millennium BC* (Earl *et al*. 2007). Guidelines and standards for recording and processing pottery of this era have been produced by the Prehistoric Ceramics Research Group (PCRG 2010). Suggested recording conventions with particular reference to later prehistoric pottery have been outlined by Knight (Knight 1997) and more recent collective general recommendations have appeared (Barclay *et al.* 2016).

The need for a stronger chronology of ceramic phases for the region is readily apparent. Given the resources now available, both in terms of the material assemblages and in respect of the technology/methodologies (as listed here), the possibilities for establishing a more precise dating framework using C14 dates and associated modelling can now be explored if funding becomes available. This should be pursued.

Figure. A model of the ceramic sequence(s) in the East Midlands through the first millennium BC…

There are sub-regional variations to the size and frequency of assemblages, and dating can be challenging. Overall, however, this material is a resource of tremendous potential (cf. Gwilt 1997; Knight 2002; cf. Evans 1995a). Important published assemblages include:

Covert Farm, Crick (Hughes and Woodward 2015), Elms Farm, Humberstone (Marsden 2000), Enderby (Elsdon 1992b), Gamston (Knight 1992), Milton Ham (Wells 2021) and Wanlip (Marsden 1998b). The Dragonby and Old Sleaford reports remain fundamental for the study of Late Iron Age pottery in Lincolnshire (Elsdon and May 1996; Elsdon 1997). Late Iron Age types and so-called Transitional wares relevant for Lincolnshire are published (Darling and Jones 1988) as well as for Northamptonshire (Friendship-Taylor 1998).

Evidence for pottery production is extremely rare before the mid-first century AD. In consequence, the suggestive remains at Polwell Lane, Barton Seagrave, Northamptonshire, are especially significant (Section 4.5.2; Chapman 2014). Pottery manufacture is suspected at the hillfort at Burrough Hill, Leicestershire (Thomas and Taylor 2015, 33). Evidence for organised production and of some long and middle distance distribution of pottery continues to expand. Petrological analysis of inclusions in pottery types has become more routine, shedding some light on likely sources of production and movement of pot and/or temper (Section 8.10.2; Knight *et al.* 2003; Cootes and Quinn 2018). Older general models of pottery production and distribution put forward by Hodder (1982a; 1982b), Morris (1994), and Dee De Roche (1997), can be considered when assessing pottery groups from the region.

More data on vessel use is desirable via organic residual analysis (ORA)/lipid analysis, and by simply recording macroscopically visible surface wear and residues that routinely occur in the form of carbonized remains, soot and limescale. Data collected in a systematic way will permit inter-site comparisons of types/use. The application of ORA has demonstrated that dairying was being practiced in the British Iron Age (Copley *et al.* 2003; 2005); greater use of this method should be instructive with regard to site and sub-regional economies.

An aim of the project at Wanlip was to provide tighter dating for the Scored ware pottery tradition (Clay 2000). The outcome was the realization its date range should be lengthened (Marsden 1998b; cf. Barnett 2000). Establishing pottery chronologies remains a central objective. The date(s) of the debut of wheelmade pots also requires clarification. Improving ceramic chronology remains a key research topic and will directly benefit future projects where pottery is recovered. Dating of the carbonized remains often found on vessel surfaces offers the prospect of directly dating the currency of the types (Willis 2002). The synthesis by Knight (2002) has successfully collated and assessed the previously disparate information on ceramic dating and provides a heuristic region-wide 'standard'.

Pottery is a richly textured information resource for the period, with the potential to provide insight to a series of key aspects of cultural life in terms of broad patterns as well as qualitative nuances and practice at site and context specific levels (Lambrick 1984; Millett 1987).

8.10 Evidence for the Exchange and the Distribution of Commodities

8.10.1 Tracing Exchange and Distribution

Our understanding of artefacts in terms of technology and exchange has been enhanced by the now more or less routine use of procedures such as petrological examination and scientific analysis building on systematic methodologies developed through the later 20th century. Provenance studies of artefacts, predicated on distinctive attributes such as petrology, have highlighted the complex and often wide exchange connections and choices that existed in prehistory, with the East Midlands in the first millennium BC no exception. Three categories are especially useful for understanding the movement of resources in the region at this time.

One of these is the presence of igneous rock in some pottery types that was added to vessels during their manufacture to act as a tempering agent to offset the possibilities of breakage due to thermal shock. Whilst the large majority of pottery vessels in the region were tempered with quartz grains, quartz fragments, calcite, and grog (crushed fired clay) these tempers employed geographically widespread and common materials. Contrastingly igneous rock sources are much more localized in the region and where igneous tempering has been employed the material can be diagnostic of the source, allowing the incidence and distribution of vessels, containing the source specific rock inclusions to be mapped. (It is thought that igneous rock in glacially derived deposits spread across the region was rarely used for this tempering purpose).

Secondly, ceramic vessels were, in some cases, used to convey salt in prehistory. Whilst salt was evidently transported during the first millennium BC from some sources by means that leave no trace in the archaeological record (see Section 8.8) some salt extraction industries systematically used fired clay containers for this purpose, made at source. In one case salt produced from the natural brine springs in the area of Cheshire was conveyed in vessels that were akin to pottery. Again these are of distinctive shape-form and composition, their fabric containing angular crushed rock known as stony Very Coarse Pottery (VCP). Research by Morris in the 1980s established from the distribution of VCP that salt from Cheshire was a widely spread commodity during the Iron Age with a widening distribution through the Middle Iron Age with consumer sites known through mid- and north Wales, and in the West and East Midlands (Morris 1985; 1994). The industry begins at the very end of the Late Bronze Age and extends through to the first century AD (Nevell 2005, 11-2); in other words it lasted through the entire Iron Age (salt did not go out of fashion!). VCP, as with other transport briquetage types in Britain, was not high-fired but comparatively soft and hence vulnerable in the long term to breaking down; it may also have been processed (smashed and boiled?) to extract the salt that had permeated within the fabric, for maximum use-value. Where present at consumer sites, in the East Midlands and elsewhere, quantities are commonly of modest scale which may be a function more of taphonomy, bearing in mind these factors just highlighted, rather than the actual scale of supply (see for comparison: Fitts *et al*. 1999; Willis 2016).

A third type that can be traced by means of petrology comprises quernstones – particularly rotary querns - due to the fact that they were fashioned from selected rock types (for their hardness, shaping and grinding properties). These rocks derived from traceable locations, some

general, such as those made from what is generically referred to as 'millstone grit', but others more localized, as with Spilsby Sandstone querns. Saddle querns, which were used for grinding in the Late Bronze Age and earlier Iron Age, were physically smaller and many will have been locally sourced as collected 'field stones' or from glacial till. Rotary querns, by contrast, were bigger and except for a few instances were of a scale and rock type that means they are very unlikely to be from other than a systematically extracted source.

8.10.2 Pottery with Igneous Rock Tempering

Close attention to inclusion types in pottery fabrics has, in the past three decades or so, shown that pottery tempered with igneous rock was distributed across the Midland counties. Igneous rocks are known to be a relatively frequent temper agent selected for adding to pottery in the later prehistory of Britain. This was not simply for utilitarian reasons but evidently had symbolic meanings (cf. Harrad 2003) likely to be referencing distinctive regional landforms. In the case of the East Midlands two or three source groups of igneous rock were being used, added to pottery clay paste in crushed form. Granitoid igneous rock from the Charnwood Forest/Mountsorrel area in northern Leicestershire is one source. The latter is thought likely to be the origin of some pottery founded at Gamston, Nottinghamshire and Swarkestone Lowes, Derbyshire (Knight 1992; 1999). More recently, a typologically Late Iron Age sherd with Charnwood igneous inclusions came from Hollygate Lane, Cotgrave, eastern Nottinghamshire, demonstrating, as with Gamston, that the distribution occurred to the north of the source, 'as well as to the east and south-west' (Evans 2020a, 26; pers. comm.).

Granitoid tempered wares occur in contexts of Middle Iron Age date to the south of the source(s) as at Covert Farm, Crick, Northamptonshire, being present also in many of the feature clusters of the Late Iron Age at that site (Hughes and Woodward 2015, 88, fig. 69). Charnwood/Mountsorrel is *c.* 50 km from Crick, but nonetheless it is represented at the site as a pottery temper. The picture is complicated as another Leicestershire source for granitoid rock is also represented at Crick: from the Croft/Enderby area *c.* 28 km to the north of Crick, where granitoid sills occur known as the South Leicestershire Diorites (Ixer 2015, 214; Knight *et al*. 2003). Granitic/granodiorite temper use is known also at the following Leicestershire and Northamptonshire sites: Wanlip, *c.* 5 km from the source (Marsden 1998b, 45), Soar Valley Way, Enderby (Johnson 2018), North Hamilton (Cooper 2008), Hallam Fields, Birstall (Speed 2010), Long Dole, adjacent to Crick (Ixer 2015), from two developments at Coventry Road, Hinckley, where granitically tempered ware amounted to 55% by number of sherds at the second development (Evans and Mills 2011; Chapman 2004), Narborough, where granitically tempered ware accounted for 7.5% by sherd count of an assemblage amongst which quartz tempering was most frequent (Evans 2020b, 3), at Kirby Road, Barwell (of six sherds of Middle Iron Age pottery from the site four are in quartz tempered ware while two have granitoid inclusions (Evans 2020c, 2-3)), and the Warwickshire sites of Top Farm, Nuneaton (15 sherds from handmade vessels, including Scored ware types amongst an assemblage of 40 Iron Age sherds, probably third-first century BC in date range (Evans 2020b, 1)) and Coton Park, Rugby (four sherds with igneous temper, dated Mid-Late Iron Age representing a small fraction of the site assemblage (Evans 2021)). Ixer concluded that granitoid tempered

wares were the only non-locally acquired vessels at Covert Farm, Crick (Ixer 2015, 214-5; on this subject see too Ixer and Vince 2009). Further, a sherd with granodioritic temper, presumably rock from the Charnwood outcrop, has been recovered at Aston on Trent in the middle Trent valley *c.* 25 km north-west of the source (Flintoft and Stein 2016; Quinn 2015).

A recent petrologically focused survey of inclusions and clay sources in pottery samples of prehistoric date, identified (as hand specimens) as containing igneous rock temper, was undertaken for the Leicestershire-middle Trent valley area (Carney *et al*. 2018). This was followed-up with more attention to chemical composition through petrographic and electron microprobe analytical means (Knight *et al*. 2022). These works were a response to previously identified research priorities (Knight *et al*. 2022, 8). The projects confirmed both the selected employment of Mountsorrel Complex granodiorite and South Leicestershire Diorite for tempering and the distribution of vessels with such inclusions. The studies showed that scientific analysis is needed to firmly distinguish these two rock types. The former has the wider distribution and is more frequent. The presence of these rock types seems likely to be explained by their intentionally selected use from around exposures, rather than due to glacial drift, (Carney *et al*. 2018, 150, fig. 2). Nor is either distribution a function (solely) of river flow (Knight *et al*. 2022).

In a study of temper inclusions within pottery from the Peak District Cootes and Quinn (2018; cf. Quinn 2017) looked at 233 sherds of Early Bronze Age–Early Iron Age pottery from 24 sites in the White and Dark Peak; the items typologically breakdown into Early Bronze Age-Middle Bronze Age (EBA-MBA) and Late Bronze Age-Early Iron Age (LBA-EIA). 186 sherds came from the earlier date unit and derived from a small number of settlement sites from which samples were selected from several separate domestic structures. They established that 71% of sample sherds were tempered with igneous rock amongst the EBA-MBA unit and 92% in the LBA-EIA unit. Igneous rock temper was strongly represented across both the White Peak and Dark Peak sample sites despite its localized occurrence only in the White Peak (Quinn 2017, fig. c1) and in the context of the proximity and possibility of use of more locally available temper alternatives to igneous rock, suitable in terms of physical/mechanical properties to cope with thermal expansion during firing. Cootes and Quinn established local clay pastes were being used with ‘imported’ igneous rocks, suggesting local production of vessels (Cootes and Quinn 2018, 692) with transport of temper to these sites likely. This occurred alongside ‘imported’ vessels with igneous temper across the Peak District area. This was interpreted as demonstrating shared practice and interconnection, indicating homogeneity over the White and Dark Peak areas by the Late Bronze Age – Early Iron Age (cf. Barnatt and Collis 1996, 44-79). This was seen as contrary to arguments forwarded by Barnatt, and Barnatt and Smith that the farms of the period were self-sufficient and internally orientated (Barnatt 1999; Barnatt and Smith 2004, 25). Instead the ceramics suggested to Cootes and Quinn that the communities of the Peak District were not self-sufficient separated farms but evidently part of a wider connected community with shared technological practice in pottery and with common forms of expression and (they argued) identity (Cootes and Quinn 2018, 689). Further, with one exception, it was noted that these igneous tempered vessels have yet to be recorded outside the Peak District, and nor was

there evidence of pottery brought in from outside the area that is now the Peak District National Park; this was argued to indicate a marked preference for local pottery, perhaps as a chosen marker of community and shared 'identity' (cf. Cootes and Quinn 2018, 690-1; Quinn 2017).

8.10.3 Salt from Cheshire

Turning to salt provision the evidence is particular to one source, as outlined above (Sections 8.8 and 8.10.1). Sites in the central Midlands, in Derbyshire, Nottinghamshire, Leicestershire and Northamptonshire, were evidently receiving salt from south-east Cheshire in VCP containers. Sites where this material is reported include the following: Enderby I (Elsdon 1992b, 41), Enderby II (Meek *et al*. 2004, 13), Hallam Fields (Marsden 2009), Hinckley, Coventry Road (Chapman 2004a), Huncote (Meek *et al*. 2004, 25), Kirby Muxloe (Cooper 1994), Manor Farm, Humberstone (Marsden 2011, 72) and Normanton le Heath (Elsdon 1994b, 37-8) in Leicestershire; Gamston (Knight 1992) in Nottinghamshire; and Swarkestone Lowes (Elliott and Knight 1999, 137, 149) and Foxcovert Farm, Ashton-upon-Trent (Morris 1999) in Derbyshire. The distribution reaches as far as Crick in the south of the region where 22 fragments occurred through the first millennium phase sequence (Morris 2015). No instances of Droitwich transport briquetage containers in the East Midlands region are known to this author; its distribution was less expansive than with the Cheshire source, but extended across the south-west Midlands.

8.10.4 Quernstones

See Sections 4.5.3 and 8.4 where quern sources and distribution mapping are documented and discussed.

8.10.5 The Interconnected Economy: Commodities, Movement and Transport; a role for Coins?

The cases above show spheres of connection and distribution for certain types where the attributes of the material can be traced. Many commodities leave few traces under normal conditions as they are perishable, while others cannot be provenanced to source since they lack characteristics indicative of source. Hence Cavanagh could only speculate that animal fat collection indicated by ORA of Late Iron Age ceramic vessels at Brocklesby Interchange could have been produced for exchange (Cavanagh 2020, 52-3) while Morris, noting the hundreds of pits and post structures at the agglomerated site at Brackley, thought to be for grain storage, posited that 'this does seem to confirm that this part of the county was an apparent 'bread bowl' for this region if not for further afield' (Morris 2019, 98). However, these possibilities cannot be proven as there is no material trace. A further interesting possibility is that the extraction of metal ore was underway in the Peak District at this time, yet tracing to source is not straightforward (Waddington and Montgomery 2017, 55; Dungworth 1997).

Thirty years ago Knight was able to show that the site at Gamston, Nottinghamshire, for

instance, was in receipt of certain 'traded' commodities as they had diagnostic elements that could be traced to a source providing a part-view of interconnections. These commodities comprised salt from Cheshire, pottery from the Charnwood Forest area and querns probably from Derbyshire and/or Yorkshire (Knight 1992). Undoubtedly this is the tip-of-the-iceberg in terms of the sites' actual exchange connections. Whilst this site is adjacent to the Trent, which was doubtless a major route-way, nonetheless it is a site of modest status. Its exchange connections are unlikely to be atypical. In turn, twenty years later, Thomas was able to plot the sources of items excavated at the more extensively explored sites of Beaumont Leys and Manor Farm, Humberstone, in central Leicestershire; here, as well as the important commodities of salt and querns, items from beyond the region included shale, a potin coin, and probably iron (Thomas 2011a, fig. 125). The Northamptonshire evidence shows that exchange links with much of southern and central England existed throughout the Iron Age and were probably regular and developed, rather than piecemeal. Testimony of this is the presence of Glastonbury ware types or their imitations in the county of which so-called Hunsbury bowls are an example (Kidd 2000; 2004: Jackson and Dix 1987; Jackson and Tingle 2012; Chapman 2014, fig. 28). With certain commodities where there were specialist production centres the question arises as to whether they were in competition, as perhaps in the case of salt, with salt from Cheshire competing with sea salt from the east coast. However, this presumes there was more than sufficient of a resource in circulation for there to be 'competition'; this may not have been the case, as there may have been times of the year, periods of time, and places, where there was shortage or scarcity, perhaps endemically so, with communities simply accessing what came their way when the opportunity arose.

How commodities moved is not well-known. In the Roman era a range of information testifies to the use of pack animals (donkeys and mules) alongside oxen-drawn carts for terrestrial distribution. Wheeled vehicles are known from Late Bronze Age Britain with two wheels of later Bronze Age date known from north Cambridgeshire: a part example from Flag Fen dated *c.* 1300 BC and a complete example with hub from Must Farm dated *c.* 1100-800 BC (*The Guardian* 19.2.2016). Wheeled vehicles are attested for the British Iron Age from the various cart/chariot graves of East Yorkshire (Stead 1991) and elsewhere, whilst Julius Caesar records the use of chariots by the ancient Britons (Caesar, Book IV.3, Book V.1). In addition, metal fittings are widely known for wheeled transport across the British Iron Age, such as terrets (rein rings), lynch pins and decorative axle terminals (e.g. from the East Midlands: Farley *et al*. 2017; Meek *et al*. 2004, fig. 9; Owen 1993; Sills and Kinsley 1978; 1979; 1990; Sills 2001; Huddart and Allen 2021, 93).

River craft such as the Brigg raft and Hasholme logboat (McGrail 1990; Millett and McGrail 1987) had considerable capacity for cargoes and confirm use of the regional river networks to facilitate movement in the first millennium BC. The smaller logboats known from the region (Markoulaki 2014) could have carried modest-scale loads which may have comprised high value/low bulk precious items, or these craft made multiple journeys to shift bulky volumes incrementally. Big timber was doubtless floated where possible. It is noteworthy that the find of a group of logboats at Holme Pierrepont, that may be interpreted

as a potential votive deposit, also included a spoked wheel, combining the dimensions of land and water transport, and surely not a coincidental juxtaposition (Section 8.2). As regards 'ports' rather than places for pulling ashore, the best candidate in the region is Old Winteringham on the south bank of the Humber, North Lincolnshire. River ports doubtless existed elsewhere; presumably, for example, there was one at Late Iron Age Leicester, on the Soar and something at Brayford Pool, Lincoln. Old Winteringham lies at the northern terminus of Ermine Street as it meets the Humber. This Roman road seems likely to have had a prehistoric origin as it follows the Jurassic ridge north of Lincoln, being a practical and logical line of movement. It is clear from the finds recovered over many years that there was a significant site at Old Winteringham in the final phase of the Late Iron Age, and it is likely this was a trading port (Stead 1976; Creighton 1990; Fleming and Royall 2019; Dudley *et al*. 2021, 87-8 for collated references); this may have been the case too with Sleaford (Elsdon 1997).

It is often assumed uncritically, and on the basis of no stated evidence, that Roman routes occasionally followed and formalized earlier routes of movement. The East Midlands is no exception to such speculations. It is likely that there were such precedents to Roman roads but caution is needed and assumptions should be avoided. Prehistoric routes normally leave no direct evidence in terms of roadside ditches or metaling and so are hard to verify. However, with growing evidence for the location of landscape features, land divisions and settlements in the later prehistoric landscape it is becoming possible to propose that some Roman roads did overlay, or run closely near to, Prehistoric tracks. In the south and east of Lincolnshire, for example, there is a strong possibility that some Roman roads overlay prehistoric routes. This is likely in the case of the Caistor High Street running along the western edge of the Wolds, essentially following the east-west watershed (Willis 2013b). Immediately south-east of Sleaford finds of imported Gallo-Belgic pottery fine wares and other material of earlier first century date in the vicinity of Mareham Lane suggest a prehistoric antecedent to this known Roman road. Further north, in considering the configuration of evidence from Navenby, Palmer-Brown and Rylatt point up that the essentially unfalteringly straight Ermine Street south and north of Lincoln links not only a string of Roman era settlements but also a number of underlying Iron Age foci, suggesting its pre-Roman pedigree (Palmer-Brown and Rylatt 2011, 139-40; 150). Although in principal dealing with Roman roads after the Roman era, valuable perspectives on the long biographies of route-ways in the region are outlined and assessed by Albone (Albone 2016).

What roles coins may have played in social interactions and exchange at this time has been much debated. Part of the problem lies in where Iron Age coins have been found. Many are from unstratified contexts. Often they are found in hoards or otherwise at locations where they are largely thought to be votive offerings in and around shrines and liminal locations. Yet this only tells us of their final use, when they are taken out of circulation, and not what their function/s may have been (if they had separate pre-deposition purposes) before such termination. Initially, when first introduced, they may have been used for exchange and communication between elites. By the final decades of the Iron Age minting was increasing and the proportion of non- or low-bullion issues was rising, suggesting wider interest in and

circulation of coins, and a monetary role seems more likely at this time. Images and epigraphy on coin series to the south of the East Midlands in the final Iron Age decades suggest wide circulation within society and these issues may have been mimicking Roman coinage as a form of currency. Whether this was the case with the so-called North-Eastern (aka Corieltauvian) coinage prominent in Leicestershire and Lincolnshire is not established.

Identifying, mapping and digesting the exchange connections of the region will improve comprehension of society during this period. This will be achieved through the everyday work of skilled professional finds specialists combined with what is becoming routine materials analysis and the employment of improving scientific applications. This exploration is likely to be one of the most important aspects for study of the period over the next 25 years. This will build on the emerging distribution patterns noted here and enable their social implications to be understood through stronger data sets.

9. Burial and Human Remains

▪ The Nature of the Evidence. There are few burials of first millennium BC date in the East Midlands, still less cemeteries, raising questions around practice and funerary processes. Instead there occur a small number of inhumations and cremations, often solitary one-offs, plus 'stray' separated human bones, some of which show signs of use and having undergone processes suggesting ritualized activity and some currency in the world of the living. The pattern seen in the East Midlands is thereby comparable to that of other regions of Britain through this period, with the era of monumental burial and interment in cemeteries broadly over by the Late Bronze Age. There is an absence of a distinct, archaeological attested, burial rite through the millennium, with only a very small fraction of individuals receiving a burial that can be detected (Cunliffe 2005, 543-61). For instance, no evidence for human remains, burials or cremations of Iron Age date is cited in May's study of Lincolnshire (1976a). Recent work has not much altered this pattern. Equally, with the possible exception of cremations at Irchester, there is no evidence of the adoption of a burial rite in the Late Iron Age mirroring the spread in popularity of cremation seen in the south-east of England through the final decades of the era, not even (to date) at Leicester which has parallels with sites in that region. The prevailing assumption is that excarnation was commonly practised (cf. Carr and Knüsel 1997), perhaps with cremation, away from settlements and leaving little archaeological trace.

The few known burials and cremations are of considerable interest and carry the potential to improve our understanding of areas such as diet, origins of individuals, health and life experience and cultural practice. However, the principal inference concerning those burials that do occur is that there must have been something exceptional about the person buried, in their life or manner of death, and its meaning to others, for anything approaching formal burial to have occurred. In the adjacent region of East Anglia Medlycott characterized a similar record as one of *ad hoc* burials and the occurrence of 'spare parts' (i.e. separated, often single, human bones) often associated with boundaries or in association with earlier made places in the landscape (Medlycott 2011, 31). The nature of the record for the East Midlands is documented in what follows.

▪ Cremation. Firstly, considering cremations, the number of cases in the East Midlands is low and sporadic, with no patterning. Cases include the following examples. As noted above, a cremation burial of Middle Iron Age date was excavated at Wanlip (Beamish 1998, 28-9), occurring centrally within a four post rectangular building, and accompanied by (as interpreted) a special deposit. An unaccompanied cremation of an adult, probably of Middle or Late Iron Age date was excavated at Elms Farm, Humberstone (Boyle 2000). Sherds from what was designated a cremation urn of Middle to Late Iron Age date were recovered without bone at Wilby Way, Wellingborough in 1997 (Enright and Thomas 1998, 32; Thomas and Enright 2003). A second human cremation was recovered from a pit during a further intervention at the site in late 1997, with only charcoal and a flint also present (Cotswold Archaeological Trust 1998). Cremation burials of later Iron Age date are known from Enderby (Meek 1996), where two occurred, and Market Harborough (Liddle 1982, 27). At Enderby Enclosure II, an urned cremation found by a roundhouse entrance is interpreted as Iron Age in date (Meek *et al*. 2004, 13-4). At Irchester, Northamptonshire, a minimum of four Aylesford-Swarling style cremations are recorded (Hall and Nickerson 1967), but they may be mid-first century AD in date.

▪ Inhumation. Evidence for inhumations remains equally disparate. Early/Middle Iron Age pit burials occur at the Northamptonshire sites of Twywell (Jackson 1975), Wilby Way, Wellingborough (Enright and Thomas 1998, 32; Thomas and Enright 2003) and Brackmills, Great Houghton (Chapman 1998; 2001). Three inhumation burials were recorded at Wilby Way, Wellingborough, one (B4) was of a female 30-45 years coming from a pit, though this was from the top of the pit and was thought to be secondary; another (B5), probably of a female over 30 years dated 762-202 cal. BC, lay within a grave cut; and a third (B6) laying in a grave cut was dated cal. 362 BC-AD 49. A bound and trussed burial of a woman affecting a crouched position was found in a pit at the edge of a settlement at Great Houghton (Brackmills), with a centre date of 390 cal. BC, where the excavator suggested potential ritualized sacrifice (Chapman 1998; 2001). Other crouched pit burials are known from Leicester (Clay 1985a, 17) and Rushey Mead, Leicestershire (Pollard 2001). At the entrance to the hillfort at Burrough Hill, Leicestershire, an inhumation of a young male had been interned in a stone cist within a pit associated with a 'guard chamber', in what was interpreted as a very deliberately placed action, being the only intact burial from the 2010-14 works at the site (Thomas and Taylor 2015, 32). An inhumation of a young adult male was excavated on the Oakham bypass and dated by radiocarbon determination to between 400 and 200 BC (Mellor 2007, 14). At Twywell and Great Houghton (Brackmills) dog burials occur in adjacent pits, a rite which is of no small interest since it antedates what are perhaps more familiar cases of ritual dog burials of the Roman era (cf. Merrifield 1987).

Two crouched inhumations were found at Winster in the Peak District in the nineteenth century during Bateman's campaigns; these are now dated as second century BC to second century AD (Beswick and Wright 1991). Putative Late Iron Age burials are also recorded from an evaluation at Towcester, Northamptonshire (Walker 1992), where an apparently enclosed cemetery with inhumations was encountered, but is not fully published. An

inhumation believed to be Iron Age was found at Stenigot, on the Lincolnshire Wolds, in advance of an infrastructure scheme in 1997; the site is yet to be published but a note on the discovery records an iron nail was associated and it pre-dated a ditched enclosure (Field and George 1998, 37). At South Cockerington on the Lincolnshire Marsh, a crouched inhumation was discovered in a pit in advance of pipeline work (Bush forthcoming, Site D5); the pit lay by a boundary ditch (a liminal location?) with the head of the skeleton to the east. This was of a female aged 25-35 years with gall or urinary stones; fragments of an associated pottery vessel were recovered. A Middle Iron Age date was obtained from C14 dating (Bush forthcoming). At Cotgrave, Hollygate Lane, Nottinghamshire, an inhumation burial again in crouched position, on its right side with head towards the south-west, was found at Trench 31 by a former spring; it was dated 22-270 cal. AD (93.6% confidence) suggesting a possible Late Iron Age or Transitional date (Krawiec and Poole 2020, 21). Two further crouched inhumations dated to the Late Iron Age were recovered on the Hatton-Silk Willoughby gas pipeline route, at Langton Hill, Lincolnshire (Network Archaeology 2006, 30-1).

▪ Separate Human Bone. Disarticulated human bones, and occasionally incomplete skeletons, occur with some frequency at sites in the region and are not unusual. Examples include the following site finds: Beaumont Leys (Jacklin 2011), Breedon Hill (Wacher 1977), Leicester (Clay 1985a) and Mountsorrel, Leicestershire (Walker 1994), Tixover, Rutland (Beamish 1992), and, in Northamptonshire, Banbury Lane, King's Sutton (Ingham 2017, 84) and Polwell Lane, Barton Seagrave (Simmonds and Walker 2014), as well as at Aylesby (Steedman and Foreman 1995, 34) and Brocklesby Interchange, North-East Lincolnshire (Keefe and Holst 2020) and Station Road, Elton-on–the-Hill, Nottinghamshire (Brudenell 2018, 87). Such cases have in recent years been suggested to result from practices of excarnation, collection and curation, with the idea of a sense of the presence or power of the ancestors; the occurrence has been discussed in the wider literature (e.g. Craig *et al*. 2005; Armit and Ginn 2007).

▪ Treatment of the Skull. There are several instances of 'unusual' treatment of human skulls. A skull from a palaeochannel at Birstall, Leicestershire, dated to the Late Bronze Age shows evidence of decapitation prior to careful deposition in a watery context (Ripper 1997; 2010); cut marks on the atlas vertebra via a metal edge seem to support this interpretation (Cook 2010). Special treatment of the head and deposition of human heads in watery contexts is attested elsewhere during the first millennium BC (e.g. Willis 1999, 100; Whimster 1981), as well as in Roman Britain (Crummy 1984, 93–8), and is a longstanding area of interest and discussion (cf. Merrifield 1987; Bradley and Gordon 1988; Knüsel and Carr 1995). Ritual and ceremony may have lain behind the deposition of the skull at Birstall. Similarly, human skull fragments from a pit alignment at Tallington, Lincolnshire (Gurney *et al*. 1993) may represent a structured deposit. An adult skull fragment from the Middle Iron Age site at Helpringham Fen displays sawing marks, where the skull bone has been 'opened'; the sawing was carried out at or after death (Bayley 1999). Billingborough, also on the Fen margin, has yielded a series of skull fragments, from several individuals, where a similar process had been undertaken, together with other procedures, including drilling and polishing/wear (Bayley 2001). A skull from Hunsbury, Northamptonshire, has a perforated

vault. Human skull fragments were recovered from ditch contexts at Elms Farm, Humberstone (Boyle 2000), where they may possibly have been components of special deposits. Bayley suggests that in the case of the fragments from Billingborough, the evidence is consistent with their employment as amulets (2001, 78). Remains from two human skulls were present in the fill of the frontage ditch of the enclosure at Weelsby Avenue, Grimsby, during its later Iron Age phase; these lay either side of the entrance, with two more from the ditch at the back of the enclosure leading the excavators to speculate that these crania may have been displayed prior to their deposition (for references see Section 4.2).

▪ Iron Age Cemeteries. Exceptionally, two inhumation cemeteries occur in North Lincolnshire. At The Bridles, Barnetby le Wold, seven fragmentary skeletons were encountered in 2002, in a row of graves in two groupings; this may have been part of a bigger cemetery (North Lincs HER MLS20030). No evidence for an enclosure or barrows was detected but a seven post rectangular structure associated with the row may have been a mortuary building or shrine. Three burials dated to 420-370, 350-310 and 160-60 cal. BC (North Lincs HER MLS20030). A cranial fragment was found in a nearby ditch but may be Roman rather than Iron Age. Another inhumation found in 2001 and dated 180-30 cal. BC, not part of the row, was of a woman who had been bound and decapitated; a skull in a pit 3.5 m beyond is thought to belong to this burial (North Lincs HER MLS20030). A second small cemetery comprising nine inhumations of Middle Iron Age date was located by Horkstow Road, South Ferriby (Clay 2006; North Lincs HER MLS20457). Here, one inhumation was located in 2003, being a crouched burial of an adult 35-50 years in age, within a pit. Eight further inhumations were excavated in 2004, again crouched and aligned north-south. In the case of four burials of males the head was to the east but one woman faced west. No barrow or enclosure evidence was detected; radiocarbon dates for four of the better preserved burials were of the range 400-00 cal. BC (HER MLS20457). These cases suggest further cemeteries may be encountered in North Lincolnshire.

▪ Square Barrows? A square enclosure at Aston-upon-Trent, Derbyshire, postulated as an Iron Age barrow on analogy with the square barrows of the so-called Arras culture of East Yorkshire (Stead 1991), was examined in 1967 but contained no evidence of a burial (May 1970). This led to the suggestion that it constituted a cenotaph, which might be considered circular thinking. Small square enclosures, conventionally taken to represent barrow cemeteries, occur at two other locations in Nottinghamshire, at the Ness, North Muskham and near Hoveringham. Originally, these could have been impressive features related to burial. Although little is known about these potential barrows, as was thought the case at Aston-upon-Trent, they might be a parallel with the Arras tradition, so may signify elaborately furnished internment. Burials here may not have been in cuts but laid on the land surface and covered with a mound from ditch up-cast, only subsequently to be lost through erosion, ploughing, and so forth. Knight has summarized and reviewed the evidence (Knight 2007, 206-7). The possibility that there was a cart burial at Hunsbury remains an open question (cf. Kidd 2000; Baker 1891; George 1917; Knight 1984, 115).

▪ Scientific Applications. Advances in science mean that recovered human bone can be subject

to analysis to ascertain origin and diet. Strontium and oxygen isotope analysis of bones belonging to five of the individuals excavated at Fin Cop (see Section 6) showed only one adult registering results consistent with origins on the limestone of the White Peak. Three of the individuals showed results suggesting they could be from the sedimentary areas within 30 km of the site; the other (female) adult had an unusually high strontium isotope ratio indicating origins in a granitic area (Waddington and Montgomery 2017, 22). The study showed that whilst these five individuals had differing origins their diet as adults was similar (Waddington and Montgomery 2017, 54).

10. Ritual, Structured Deposition and Religion

10.1 Introduction

As in other parts of the British Isles, the corpus of ritual and structured deposits of first millennium BC date in the region has grown, reflecting the resurgence of interest in such phenomena in the 1990s (cf. Merrifield 1987; Hill 1995c; Bradley 1990; Hingley 1992). Many finds attributed this status were found long ago, being 'spectacular' items of metalwork from riverine contexts (May 1976a). There is an established narrative that intentionally placed and structured deposits were not uncommon in later prehistory and include extraordinary fine items, often of metal; yet now there is a growing realization that many may equally be of less obtrusive form and content, being of modest, even mundane and highly fragmentary materials, comprising artefacts or ecofacts of 'the 'everyday'. Hence they could be encountered fairly routinely during fieldwork, although, recognition and interpretation are layers of understanding that we may presently ascribe to the deposits, often on the basis of their composition and context. They offer, potentially, a highly useful point of access into the belief systems of the period, which are now being explored in a sophisticated manner.

10.2 Structured Deposition: Types of Deposits

On the whole, the patterns so far discernible in the East Midlands seem to echo more widely recognised trends in British later prehistory. The pattern of metalwork deposition, for example, changes over the course of the first millennium BC (cf. Hunter 1997). A tradition of deliberate deposition of fine items (e.g. swords) characterises the Late Bronze Age. This, however, ends with the Iron Age transition, such deposits being highly exceptional during the middle centuries of the millennium. A resumption in the deposition of fine metalwork then occurs in the later Iron Age. This sequence is strikingly apparent at Flag Fen, Cambridgeshire, on the south-east margin of our region (Pryor 2001). In Nottinghamshire, for example, a series of impressive Late Bronze Age metalwork finds have been recovered from the Trent, yet also, in turn, La Tène style metal items (cf. Bishop 2000; Phillips 1934, 105; May 1976a, 128–9; Watkin *et al*. 1996; Davies 2006; Garrow and Gosden 2012).

The materials and functional types selected for deposition reveal certain preferences

and patterning. Metal items relating to warfare, productivity, status and control are particularly prominent. During the Late Bronze Age and later Iron Age these include swords (and their scabbards), spears, helmets and shields – elegant and often elaborate pieces symbolic of power and martial status (cf. Fitzpatrick and Schönfelder 2014 on a likely helmet from the Witham at Fiskerton). Also occurring are axes and artefacts relating to the production of metal, in other words items to do with *transformation* that facilitates agricultural production and the ability to manufacture material culture that will help alter and 'control' the natural and social environments. From Billingborough, in southern Lincolnshire, for instance, a substantial iron artefact of the type interpreted as a blacksmith's poker, recovered during excavation, is an apparent votive deposit (Chowne *et al.* 2001, 95).

Querns were deposited in symbolic locations and as special deposits (cf. Hingley 1992; Willis 1999, 99). This phenomenon has, however, yet to be systematically examined across the region. The role of querns in converting grain to flour is likely to have resulted in their being invested with particular significance, and seems likely to account for their selection as votive items and as components of structured deposits. The first millennium BC was, of course, a period during which grain production and management were especially prominent, and vital given likely growing populations. At Wanlip querns of both saddle and rotary type were found together, evidently forming a structured deposit (Beamish 1998; Marsden 1998a). Querns found in pits at Ancaster Quarry (May 1976a, 136) and Hunsbury hillfort may also be elements of structured deposits, as may some of the querns from Breedon Hill. At Burrough Hill, Leicestershire, two complete rotary querns (including upper and lower stones in both cases, together with their iron spindles) looked to be placed deposits in a pit, with one unused, with a whole pottery vessel also present (Cooper *et al*. 2012, 94-6).

Structured deposits involving faunal remains may also be recognised, either faunal remains on their own, or else accompanied. Some are open to 'practical' explanation and others are more difficult to account for in such terms. Structured deposits involving faunal remains include perhaps a partial carcass of a sheep at Ancaster Quarry (May 1976a, 137-8), a dog burial and perhaps that of a crane at Billingborough (Chowne *et al.* 2001), four complete skeletons of young sheep in lower fills of Pit 1691 at Foxhills, Brackley (Morris 2019, 101), an animal skull (species not specified) placed upside down in the base of a terminal of an eaves-drip gully at Wilby Way, Wellingborough (Enright and Thomas 1998, 32) and an assemblage of calf bones from the top fill of a major ditch at Nettleton, Mount Pleasant, Lincolnshire, which looks to have been selectively placed (Stallibrass 1999). Human skeletal material also seems likely to have been subject to ritualised processes; cases of the unusual treatment of human skulls are noted above (Section 9) while such separated bones can be included along with other material in structured placements.

Some groups of seemingly mundane remains encountered at settlements also appear to be structured deposits (cf. Section 10.1). What is mundane to the archaeologist may be something invested with significance in the past; all that remains is the items, the context and the

archaeological imagination; missing are the thoughts, narratives, processes, ceremony and investment in words and actions, etc. around (what we deduce as) past 'events'. The placement of seemingly 'everyday' remains appears to be the case at the Late Bronze Age ringfort at Thrapston, Northamptonshire, where a series of deposits including shed red deer antler, burnt pig bone and pottery were encountered in ditch fills at junction points (Hull 2001, 89). Similarly at Elms Farm, Humberstone (Charles *et al*. 2000, 159–60), dating to the Middle to Late Iron Age, complete or nearly complete pottery items, animal bone and metalworking debris occur in groups, the contexts of which are suggestive of special areas and boundaries. The earlier Iron Age site at Wanlip, Leicestershire (Beamish 1998) shows a combination of settlement, ritual and mortuary activity. As Clay (2001) notes, this follows trends observed elsewhere in the Early and Middle Iron Age of ritual events and acts occurring within domestic settlements. In the later Iron Age religious and votive action began to occur at specific locations outside domestic/settlement spheres, in specifically dedicated locations – namely at places we term shrines – although these practices did not entirely cease in the domestic sphere (cf. Hill 1995c).

Considering the possible use of organic material in such activities, samples routinely collected in order to capture palaeoeconomic or palaeoenvironmental data may also lead to the identification of structured deposits.

10.3 Contexts of Deposition

As elsewhere in the British Isles, the contexts of deposition from which these ritual/votive items have been forthcoming are very often boundaries, thresholds, earlier monuments and watery locations (cf. Fitzpatrick 1984; Hingley 1990a; Priest *et al.* 2003). The aforementioned poker from Billingborough had been deposited in a silted Bronze Age boundary ditch. That pit alignments and linear dykes were the focus for structured deposits is noted above (Section 7.2). Thresholds and entrances, of both settlement enclosures and roundhouses, are often associated with finds of this type, often ceramics (cf. Gwilt 1997) or faunal remains (Section 10.2). At Elms Farm, Humberstone, for example, pottery groups almost invariably occur at or by the termini of roundhouse ring gullies (Charles *et al.* 2000, illus. 42).

10.4 Foundation and Termination

In the case of the Middle Iron Age site at Hallam Fields, Birstall, Leicestershire, Speed discussed the high quantities of pottery within the western and eastern eaves-drip gully terminals of the roundhouse within Enclosure 1 (Speed 2010, 63-5) suggesting that this probably indicated a termination practice marking the abandonment of the building. Deposition within ring gullies defining what were categorized as living, ancillary and ritual structures, was likewise considered in depth for Covert Farm, Crick, where the analysis by Woodward and Hughes (2007, 201; Hughes and Woodward 2015, chapter 10) concluded that the actions were highly structured, occurring at or soon after abandonment. Similar acts or rites of termination are attested elsewhere in Britain, as at Burradon, north of Newcastle-

upon-Tyne, where two pits were cut into the fills of the eaves-drip gully of the abandoned main house and backfilled with a range of cultural items as, apparently, the final act of closure (Willis 1999). At Fleak Close, Barrow-upon-Trent, a pit was dug at the corner of the largely filled Iron Age enclosure ditch and at its base a large collection of red deer antler and a pig jaw were interpreted as a likely termination deposit marking a former domestic milieu (Knight and Southgate 2001; Knight 2007, 203). Speed notes other likely cases in Leicestershire and Nottinghamshire (Speed 2010, 65). Speed and Cooper note the placed fragments of querns and pottery in post pits at Cadeby in the first century AD, seemingly marking an end of use (Speed 2011a). Hence, foundation and closure deposits should be expected to occur in the region with some regularity.

10.5 Watery Environments

The metalwork from the Witham and the Trent indicates an association with running water and particularly with the great rivers of the region (cf. Davies 2006). On the other hand a La Tène III sword came from a palaeochannel of more modest scale at Aldwincle (Megaw 1976). Bogs and natural water sources might also be anticipated repositories for such material. There is a notable absence within the region of the type of deep shafts known in other parts of Britain that may have been designed to reach the water table or to be seasonally wet (cf. Webster 1997). Wells and water pits occur at settlements (although less frequently than on Roman sites (cf. Thomas and Taylor (2015) noting clay-lined examples from the Burrough Hill, Leicestershire); as elsewhere, examples may have been the focus for ritual deposits, although practical reasons for depositing items into a well may also provide an explanation. A water pit of Late Iron Age date excavated at Warren Farm, Lockington, was thought to be for livestock; a quernstone was found at its base (Thomas 2013, 100).

In reporting Bronze Age metalwork finds from Shardlow Quarry by the River Trent Davies suggests a two-tier scenario accounting for the presence of these finds. At one level this may indicate a localized ritual of deposition into water channels for individual communities. At a higher level it might involve a wider community wherein ‘the finest weapons of the tribal leaders were offered at Clifton, a central place …’ where all communities gathered for the ceremony, he speculated that there may have been a wooden platform for such occasions as at Flag Fen (Davies 2006, 40). Similar visualizations have been suggested to account for finds in watery places, as gifts to the supernatural world and its deities through the portal of water. A scenario of wooden causeways enabling lavish watery sacrifices akin to the La Tène lake finds in Switzerland has been proposed in the case of Fiskerton on the Witham (Field and Parker Pearson 2003), although other explanations are possible (Fitzpatrick 2018).

10.6 Shrines

Whilst some areas of southern Britain saw the emergence of ‘shrines’ (formal locations with features and structures) during the later Iron Age, the East Midlands has few candidates. One aspect is the question of visibility, for many of the Iron Age shrines known from

southern Britain have only come to light through distinct surface finds or through the investigation of more readily identifiable Roman remains where a monumental temple overlies an earlier Iron Age shrine, which is small, lacks structures of substance and is largely ephemeral, as at Lancing Down, West Sussex (Bedwin 1981) and Elms Farm, Heybridge, Essex (Atkinson and Preston 1998). Moreover, the nature of reverential practice and offerings clearly varied place to place, perhaps due to the differences in honouring particular deities. This could explain why the archaeological 'signature' follows no set pattern and why, on occasions, it may be almost non-existent; that is to say, not readily detected by aerial photography, geophysical survey, fieldwalking or metal detecting. At their most developed the shrines of southern Britain, by the latest phases of the Iron Age, were laid out in a manner similar to that of Roman temples, while likewise practices were not dissimilar by that stage.

The sites at Wakerley and Weekley, Northamptonshire, may have performed functions a shrines (Kidd 2004; Gwilt 1997), whilst the religious site at Thistleton in south-west Lincolnshire evidently had a Late Iron Age pedigree (Allen 1965; Liddle 1982; Whitwell 1982; Liddle and Taylor 2019). It is likely that many of the sites with sizeable assemblages of Iron Age coins and brooches identified in Lincolnshire (May 1984; 1994) were locations of shrines or temples, the coins being votive deposits (cf. Willis 2013b). Kidd (2000) noted other possible ritual structures in Northamptonshire: at Crick (Chapman 1995; see below), Stanwell Spinney (Dix and Jackson 1989) and Wilby Way, Wellingborough, where the evidence for such an interpretation in thin (Enright and Thomas 1998, 32; 1999). The enigmatic site at Red Hill, Ratcliffe-on-Soar, probably included a late Roman temple, which may well have had its origins as an Iron Age shrine (Challis and Harding 1975; Elsdon 1982). At Covert Farm, Crick, the later Middle Iron Age feature/structure E9 had an unusual elliptical wide ditch facing in the opposite direction to most ring gullies, with an inner complete circular ring gully, all at a point where Beaker pottery had been recovered from an earlier phase; a religious function seems possible (Hughes and Woodward 2015, 66-7).

Remains of a possible shrine were discovered at South Cockerington on the Lincolnshire Marsh in advance of the Covenham to Boston pipeline (Bush forthcoming, site D6). Here an annular ditch 11 m in diameter encircled a central pit containing a complete (but fragmented) inverted Middle Iron Age jar, with post holes arcing round the pit. Charcoal from one of the post holes dated to 366-201 cal. BC. Given that date this feature complex would constitute one of earliest known Iron Age shrines. The annular ditch was recut. Animal bones included a high proportion of pig. Bush points out that it is perhaps, significant that the feature complex appears to be positioned separately from the settlement remains. The layout is similar to the circular shrines at Harlow (Haselgrove 1999a, fig. 7.7) and Heybridge; at the latter site the Iron Age shrine had a central pit found to contain a complete pottery vessel interpreted as a votive offering (Atkinson and Preston 2015, 87, fig. 6.1; Bush forthcoming). Also from eastern Lincolnshire, work ahead of the construction of the Partney Bypass, on the south-eastern Wolds, revealed evidence for a probable Late Iron Age shrine at site PTN9 04; here the excavation identified an apparent temnos, that is, a demarcation boundary for the

sacred area surrounding the shrine (Atkins forthcoming).

Under this heading the Hallaton complex, in south-eastern Leicestershire, represents something unprecedented (Score 2011; 2012; Priest *et al.* 2003). Beside the point of passage through a made boundary, a complex of hoard deposits was excavated, leading to the recovery of almost 5000 Iron Age coins, most local but including some from other parts of Britian, plus 149 Roman denarii, the latest being an issue of Claudius of AD 41/42, together with other metalwork (some striking and rare in a British context), and substantive faunal remains. The excavation included strong community involvement and as noted in the publication represents a rare case of hoard site investigation on an extensive scale. The coin deposits and faunal remains indicate gifting taking place from around the turn of the millennium and into the earlier decades of the new century. Feasting focused on the consumption of boiled pork appears to have been a repeated open air practice, envisaged as part of the ceremonies involving sizable gatherings (Score 2011) while some items may relate to cleaning rituals (Score 2012). Browning provides a contextual and comparative discussion of the site dynamics around sacrifice, ritualized consumption and feasting based on the faunal deposits (Browning 2011a). The site is important for the new light it sheds on central England, particularly on the dynamics of power, community and contacts with wider spheres, including the Roman empire, before AD 43 (cf. Haselgrove 2011).

10.7 Interpreting Structured Deposition, Ritual and Religious Practice

This short review demonstrates that structured deposits were quite common and should be anticipated in future interventions. Some features and activities, however, noted elsewhere in later British prehistory are not yet attested in the region (e.g. ritual shafts) or are thinly represented (e.g. rituals involving human and cattle heads; shrines). Recognizing and interpreting structured and ritual remains requires criteria for identification and careful approaches (Wilson 1992; cf. Gwilt 1997). To respond to the challenge of recognising them, new methodological approaches may well be required.

There is perhaps a tendency for the archaeological community to conflate structured and selected deposits as representing belief systems and rituals in all cases. However, the meanings and understandings of these practices for people in the first millennium BC were perhaps often complex, context-specific and textured with nuance. In some cases these might have been practices embedded in routines and maybe not reflected upon greatly. Many such activities are likely to represent strategies (that become routines) relating to the negotiation of uncertainties in human life, and status passages; uncertainties requiring an offering or an incantation to ensure a desired outcome. These uncertainties were often (likely) related to food generation or procurement, fertility, health, productive and transformative undertakings, and the tensions around power – and will have occurred regularly on a variety of scales. As more examples of these activities are documented and as our interpretations develop we should be able to recognise more patterns. Explanations may be posited but we will never open the ‘black box’ of past belief systems but the archaeological exploration of this domain should define some parameters and will continue to play a

role in generating interpretations of society and culture at this time as we seek to comprehend it.

An apparently disturbed hoard or series of coin hoards recovered from Reynard's Kitchen – a cave in Dovedale, Derbyshire – presents an intriguing case. It comprised three Roman Republican issues, six Iron Age gold coins and 13 Iron Age silver units and half units. Were these a religious offering, simply stored portable wealth, a 'flight hoard' from the time of the Claudian invasion, or something else? Certainty is unobtainable and the interpretation remains open (Hyam 2014; Leins 2014).

11. Agriculture through the Late Bronze Age and Iron Age: Summary

This Section is best read alongside Monckton's coverage of this era in the environmental synthesis chapter that formed part of the original Resource Assessment (Monckton 2006).

11.1 Background

- By the Late Bronze Age much land had been cleared for agriculture. This process continued through the first millennium BC both to extend grazing and arable land, although within this general trend there were periods of regrowth in some areas and the process varied place to place.
- New areas cleared and colonized included landscapes less conducive to cultivation but tilling was probably better enabled on clay soils with the use of iron ard sleeves and coulters and probably with cattle 'improved' over time to provide stronger animals for traction. Ditching will have assisted drainage.
- The climatic downturn through the earlier part of the millennium meant harsher conditions which would have made arable cultivation more challenging while some hitherto grazing lands were evidently (periodically or continually) waterlogged. However, local studies demonstrate a likely complicated picture.
- The extent to which agricultural choices and the balance of livestock and arable farming was a function of soils still needs concerted attention.

11.2 Livestock

- Livestock raising evidently expanded through the millennium, particularly that of cattle and sheep/goats. The manure of these animals will have been important for soil fertility in cleared areas particularly under arable cultivation. Mixed farming was probably the norm.
- Cattle were used primarily for meat and hides, with oxen employed for traction. Horn, fats and oils, and probably dairy products were secondary. Sheep/goats were raised primarily for wool and meat, with secondary products comprising dairy, skins, horn and fats/oils.
- Understanding pastoral economies is complicated by the non-survival of bone in acid soils within the region, while the comparatively thin archaeological record for the earlier first millennium means samples are small and this limits what can be said of them, especially for reasons of representativeness.

- ‘Producer sites’ are identified by culling and age profiles as raised livestock may have been exchanged as live animals and ‘walked off’ leaving only, at best, indirect traces.
- The rise of land divisions and enclosures, plus identification of likely stock processing systems, point towards the expansion of livestock farming.
- Transhumance with herds presumed to be more common in the Bronze Age seems likely to have largely come to a halt in the first millennium BC as land and rights were appropriated through divisional features. Movement to summer grazing will have continued and probably intensified, combined with other seasonal activities.
- Although sheep bones often form higher percentages amongst site assemblages than those of cattle, cattle were typically the principal source of meat followed by sheep. It is likely that raising sheep and cattle was a complementary undertaking at this time.
- Specialization in livestock rearing is likely in some cases, related to ‘best practice’.
- Some sites have larger proportions of pig bones present – both likely producer and consumer sites. On the whole though pigs were of marginal importance in everyday diets and economics. However, pig, and/or perhaps wild boar, occur more prominently in feasting and ceremonial contexts.
- Manufacture of dairy products is assumed but rarely attested by any means (such as Organic Residue Analysis). The degree of importance of cheese and yoghurt is yet to be established for the region at this time
- Horses (typically of pony size) and dogs are commonly present, usually in modest numbers. Horses were at least occasionally eaten. The domestic fowl appears for the first time.
- Wild animals were rarely consumed judging from samples from settlement sites and elsewhere.
- Some caution is necessary in this respect of the above point as wild species may have been consumed away from settlement sites etc. leaving no trace. The numerous fish traps discovered at Must Farm just to the south of the region and of Bronze Age date demonstrate a considerable interest in catching fish at that time, though samples from first millennium sites rarely show any fish remains. Where they occur they can often be explained in ways other than for human consumption.
- In the past twenty years many samples from the region have been interpreted as suggesting greater pastoral activity, as opposed to arable cultivation, than previously might have been assumed. The actual balance is not readily established and raises questions around the nature of the evidence. Is this newly emerging picture a function of the areas of the landscape being developed since 1990 - specifically along valley bottoms and sides as modern settlements expand into adjacent hinterlands, particularly along transport corridors that often follow valleys? Much new development is on low-lying areas in and around modern towns hitherto not built upon as historically deemed a flood risk; these environs will have been past grazing lands. Or is this a ‘correction’ to the idea largely based on data from Wessex and the east of England of a concentration on cereals?

11.3 Arable

- With regard to crops the same types of issues arise from the paucity of the archaeological record for the earlier first millennium BC.

- The Iron Age in Britain was a period of highly successful innovative and intense arable cultivation with cereals likely to be the staple for a great many communities, although this may only apply from the Middle Iron Age and not for all areas of the East Midlands.
- Spelt was the main cereal grown in the region from the Middle Iron Age at least, for bread flour; emmer and to a lesser extent bread wheat occur. Hulled barley was also a popular crop.
- A moderate percentage of sites provide evidence for crop processing, while there are several cases of preserved grain recovered in association with four post structures.
- A key aspect of the nature of the evidence is that samples almost invariably produce low presence and frequency counts for charred cereal grains and plant matter.
- The latter may reflect the nature of practice in the first millennium BC rather than constitute an index of the actual quantities being grown in so far as for cereal presence and identification, presence is dependent on the charring of cereal grains, chaff etc. at sites in order to assess the degree of production and dependence on cereals. However, carbonization of grains and plant parts is a matter of chance and cereals may not have been exposed to an environment where charring might occur.
- The introduction of rotary querns from around the early third century BC enabled flour production to become much more efficient so that larger quantities of grain could be processed. This will have been advantageous in the context of rising population numbers.
- Soil fertility may have been an issue with land exhaustion if there was insufficient manuring and if the clearance of woodland coverage had encouraged the run off of nutrients. Soil erosion on a very significant scale occurred at this time, demonstrable in the sediments in the major valleys of the region.

Useful site and area discussions include the following reports: Hadjikoumis 2018; Browning 2011a; 2011b.

12. Environmental Sampling and Environmental Reconstruction (with a focus on insect remains)

The contribution of environmental sampling through its varied means (such as studies of pollen, land molluscs, insect remains, wood, carbonized plant matter and sediments, etc.) to our understanding of past ecologies, anthropogenic impacts and economies cannot be doubted, as this Assessment demonstrates. Often linked with radiocarbon dating it can enable landscape reconstruction and the characterization and use-identification of specific features. Study of these remains is highly specialized, requires reference material and is time consuming, requiring appropriate relevant budgeting within projects, including dating programmes. Quite a large proportion of the studies referred to in this section were conducted decades ago although they remain relevant – indeed on which the subject is still reliant - and this will be true for Resource Assessments for other periods. Pollen study is a case in point. This picture signals that a greater proportion of investment in such work occurred prior to 1990, when numbers of people working in archaeology were much smaller than today and budgets were tiny compared to sums spent on the recovery and publication of archaeological remains today.

A small number of publications and site reports for the region include studies of insect remains collected from waterlogged contexts. Such studies can provide significant evidence for both specific feature micro-environments and wider site-settings, and not infrequently landscape change, given that insect species representation is a sensitive indicator. Studies of insect taxa from Bronze Age and Iron Age contexts and Late Iron Age and Roman sites include the pioneering research at Thorne Moors (Buckland 1979), reports by Buckland on samples from Washingborough, Lincolnshire (Buckland 2009), from below the Brigg 'raft' (Buckland 1981), Dragonby, North Lincolnshire (Buckland 1996) and the report of Girling in the case of Tattershall Thorpe (Chowne *et al*. 1986), plus reports for Stamford Road, Oakham (Greig *et al*. 1999), and Soar Valley Way, Enderby (Hill and Smith 2018) in Rutland and Leicestershire. However, the possibilities of material recovered from earlier work at sites like the channel of the Old Slea at Sleaford, Lincolnshire, adjacent to the Iron Age occupation (Elsdon 1997), and the Brayford Pool in Lincoln, were never realised. In addition, the study of the remains from Dragonby was only partial by reason of limited funding, despite the comprehensive sampling regime followed on site by Jeffery May (pers. comm. Paul. Buckland). Also significant in this context are the following: the multi-disciplinary research of Krawiec, who studied the landscape of the Trent-Derwent confluence at Shardlow Quarry, Derbyshire (Krawiec 2012), and also for this location the Bronze Age insect faunas and plant macrofossils (Smith and Smith 2017); the environmental studies related to Manor Pit, Baston, Lincolnshire (Allison *et al*. 2020); Robinson's contribution in the Raunds survey volume for the Neolithic and Bronze Age (Robinson 2011); and his work on dung beetles (Robinson 2013). Buckland points up the worth of collating a list of known sites with suitable waterlogged deposits (and archives) and flagging those with the greatest potential and knowledge value for more detailed palaeoecological research, if opportunities present themselves as a result of development or drainage works (pers. comm. Paul Buckland). Above all, provision in training insect and other specialists is essential if expert study is to continue.

On a positive note a new project commissioned Historic England to be undertaken by York Archaeology aims to create a database of geoarchaeological investigations in the Trent valley.

13. Setting Settlements in their Contemporary Landscape and Comparative Context

Attempts at wider landscape reconstruction are now possible given that some concise areas have seen several, or some more large-scale, interventions in recent years. The difference now from endeavours to this end in the past is that hitherto this was largely dependent on air photographic and other survey data, whereas now the samples are from excavation and therefore the information is that much more definite. Cases from Leicestershire illustrate this. Speed's report on the enclosed Iron Age settlement at Hallam Fields, Birstall, Leicestershire (cf. Section 4.3), included a discussion with attention to landscape mapping and contextualization of the site in the light of other known sites and landscape features. This was combined with a comprehensive comparative assessment of the morphology of the site, as well as helpful illustration of artefact distributions that indicate depositional practices and

site formation processes (Speed 2010, 66-71). A similar approach is followed in his analysis of the site at South Meadow Road, Upton, Northampton (Speed 2015, 66-70) where in an area a little under 4 km by 4 km the known Iron Age sites are plotted, providing windows on what was evidently an intensively used landscape in the Iron Age given the feature densities; again site morphology and size are set against other regional examples.

In his analysis of Beaumont Leys and Humberstone, Leicestershire, Thomas uses comparisons for sites and houses to place the evidence from these two nearby sites within what was an evolving settlement system and economic landscape (Thomas 2011a, chapter 9). The circular structures (perhaps roundhouses), for instance, are compared by time period (*ibid*. fig. 124), while settlement/activity and organization are suggested by functional areas (*ibid*., fig. 127). The experience of daily life and common practices for site inhabitants is also considered in that publication and somewhat echoes the contextual and sensory perspectives innovatively pursed with the Covert Farm, Crick investigations (Hughes and Woodward 2015, chapters 9 and 10). In the case of Soar Valley Way, Enderby, also in Leicestershire, the known Iron Age landscape in the vicinity of the site was not only mapped but in this case also annotated with interpretations of how space may have been used in this landscape (Kipling and Beamish 2018, fig. 94). A series of interventions around Crick have likewise provided a broader picture of the extensive settlement of the area, particularly in the Middle Iron Age, showing the later prehistoric 'neighbourhood' (Hughes and Woodward 2015; Masefield *et al*. 2015). Deegan's collation of evidence from Northamptonshire includes plots of sites and cropmarks across landscape blocks together with a very useful corpus of site plans (Deegan 2007). Such mapping enables analysis but also, by looking beyond the traditional site-based focus, shows those sites in a new light, generating questions and prospective interpretations as to how contemporary sites in proximity worked.

Taken from a wider perspective some general trends are apparent through the region, such as the increasing prominence of settlement enclosure and the filling-up of the landscape. Yet across this geography there are variations in the choices around settlement form which, chronology aside, may reflect the circumstances of local environment, population numbers, or organizational, phenomenological and lifestyle thinking. The agglomerated sites, for instance, are a feature of the central-southern part of the East Midland region (Northamptonshire and Leicestershire) on current data. Further, they are not associated with any one type of economy. More broadly, some sites are evidently geared towards to livestock management, something they can share with their neighbours, or, indeed otherwise. Generalizations therefore often need qualification and refinement for there is intra -regional variability in the development of settlement morphology and functions. Recognition of this complexity is a major outcome of work on the period over the last few decades.

14. Social Relations and Society in the First Millennium BC

The nature of social relations in the region is a fundamental to understanding as it will have been significant in shaping decisions and forms of expression. Further, it is a key aspect in

any attempts to view the bigger picture, for interpreting the period and in constructing syntheses. Nonetheless, detailed attention to social relations is something to be addressed elsewhere. Here, some aspects are highlighted.

As the first millennium BC progresses there is increasing evidence for an organized and controlled landscape geared to economic productivity, enabling communities to reproduce themselves and for exchange of surplus products. How this was arranged and where authority lay, and the nature of that authority, are less clear. The Early and Middle Bronze Age likewise had sophisticated levels of economic and social organization which imprinted the land. In the first millennium BC the manifestations are different and become more widespread with time. Enclosure and land division, together with settlement foci, emerge and become marked, and can now be seen in many places, in what becomes, more so than before, a 'continuous landscape' of habitation and use. The middle and lower valleys of the main rivers of the region, for instance, demonstrate cropmarks confirming the attraction and heavy use of the alluvium and gravels, yet equally the uplands saw occupation, mixed agriculture and human signature. Manifestations were framed and fashioned by ideas and choices made locally but evidently often demonstrating strands of shared ideology and practical realization. There occur variations and similarities, areas of thin record and those where it is concentrated. By the end of the Iron Age society and its forms in central England have transformed from what existed in the later Bronze Age (see Section 1.4.3). Given the timescale involved, the varied geography and variability within the archaeological record of the millennium generalization must be limited and come with provisos, though this rough sketch is a reasonable vignette of the evidenced trends.

Social relations during the Late Bronze Age are enigmatic: society was changing then with the ending of the round barrow burial tradition, more settled agriculture, large scale hoard deposition, the growing prominence of personal arms, and yet comparatively little settlement evidence. The degree of social continuity into the Early Iron Age is also obscure. Certainly there were specific sources of social stress during the first half of the millennium due in particular to climatic change, the full debut of iron replacing copper alloy as the leading technology, population increases and a new organization of land rights (cf. Needham 2007).

The early part of the first millennium seems likely to have witnessed the decline of transhumance and increased permanent settlement and with it the progressive development of systems of land allotment (cf. Bishop 2000; Knight 2007). In the East Midlands, as elsewhere in lowland Britain, the first millennium BC, particularly from the middle centuries onward, was a period of marked population growth. By conventional thinking a dynamic of population increase and agricultural colonisation, intensification and innovation becomes apparent, leading to changes in landscape use impacting to various degrees across the region. Population increase and agricultural developments were entwined drivers of transformation with the latter enabling and required by the former. This package of change comes to reconfigure society and the landscape. Claylands, The Fens and other wetlands were brought into use (or more intense, different usage). An increase in grain production, and also of other

products is suggested by the archaeological remains, such as the various storage means: pits, timber granaries (noting significant intra-regional variations in their occurrence, being sparse in the Trent Valley and more abundant in Northamptonshire, but with unusual cases such as Sutton Common – see Section 6), and new large ceramic vessels. These patterns are becoming clearer through the concerted work of the past 30 years and ongoing (building upon earlier significant site investigations).

Mineral exploitation in the form of iron smelting and metalworking and the intensification of salt production, together with agricultural surplus and its secondary products, plus craft production, will have generated commodities to exchange and, from that, forms of 'wealth' and perhaps empowerment. Mundane items were also needed in quantity as everyday essentials: basketry, winnowing fans, bags, woven-wood hurdles, clothing, etc. There may have been contestation over resources (forms of conflict, as apparent seemingly at Fin Cop – see Section 6 and below). How these new types of economy were organised and controlled is a key matter for investigation via theory and interpretation, grounded in the archaeological evidence. Centralising control may have existed, or egalitarian structures may have been in place; there may have been variations in time and space. The model of a comparatively egalitarian (long) Middle Iron Age in England proposed by Sharples (1991) and Hill (1995a) is seemingly not contradicted by the evidence from the East Midland region: there are no indicators of 'chiefs', conspicuous wealth, grander residences, differences in consumption or patterns at this time, as the complexes at Brackley and Crick demonstrate. The few hillforts of the region may have been about centres for community and storage rather than centres for power. Work in the Trent valley, for example, has yielded few artefacts indicative of significant status variations for any part of the first millennium BC, accepting items seen in structured or votive deposits which may have been personal possessions. That finds of brooches or glass beads is only occasional indicates access to or interest in higher value commodities was perhaps minimal in this sub-region and there was limited use of adornment or accoutrements to signal wealth or status difference (e.g. Henderson 1992b; Knight 2007, 208). Until the Late Iron Age material culture and life in the East Midlands look to have been in many ways circumscribed: finds assemblages are limited in range, numbers and forms, with little decoration; foods and diets will have been repetitive, lacking variety; settlements in their fundamentals probably looked more or less the same. The record speaks to a certain monotony in material culture, consumption and expression, at least on the face of it. There is nothing certain in the layout or sizes of sites and buildings to suggest hierarchy. If status differences existed they left no obvious trace. In terms of what is discernible the evidence for much of the first millennium conforms to an interpretation of egalitarian social relations. That said, some qualification may be borne in mind. Status may have been in 'the eye of the beholder' and less apparent to the twenty-first century observer; perhaps the variations in size and ground-plan complexity at settlements, as noted above, might have had some relationship to status or social differentiation. Close collation of this type of evidence may result in new interpretations.

In the latest Iron Age, changes occur, as elsewhere in southern and eastern England, suggestive of more social differentiation and hierarchy, and centralization of wealth, contacts

and power, implicit from coin making and circulation, centripetal incidence in the distribution of exotic imports and a sense of 'centres', some enclosed with long dykes (but not so in the East Midlands on current knowledge). This new configuration is much more manifest in the south and east of the region than in the north and west. The adoption of coinage, the greater use of personal accoutrements such as brooches, and attention to the appearance of the self, implied by cosmetic instruments, may be bound up with status and a new or more manifest categorisation of individuals in society (cf. Hill 1995a).

Evidence of warfare and hostility is uncommon through the whole of the period. This remains a matter for investigation as it may simply be a function of lack of evidence, not necessarily meaning violence did not often occur. This is a debated area (cf. Section 6). The sparse human skeletal record available for the region indicates little in the way of endemic violence, though it is seen more so beyond the region in certain instances through skeletal remains (cf. Section 6); so why would the East Midlands be different? The evidence recovered for a massacre at Fin Cop is a standout case and without parallel to date within the region (though similar cases were noted elsewhere – see Section 6). It is unclear how exceptional this brutal event was. Whilst there is a wide corpus of martial items for the region much of this seems likely to have been ceremonial, symbolic and impractical as a means of attack or defence. Yet since the context of these finds would appear to be votive this may be unrepresentative; more functional robust equipment could surely be called upon, as in the case of swords and indeed the bark shield from Soar Valley Way, Enderby (Section 4.5). However, genuinely defended settlements within the region are thin on the ground (even if the Wootton Hill enclosures were for defence in possibly hostile times). Further, from the later Middle Iron Age if not before a lack of endemic conflict is implicit in the evident success of agriculture, economy and population, and from the nature of most enclosed sites, where some were still open or located simply on one side of a boundary ditch that appears non-defensive. An absence of armed conflict, or of conflict resolution without mass violence, would have enabled productive activities to flourish. In such a world, ritual involving weaponry may have been symbolic, and in this connection it is pertinent to note the corpus of miniature versions of martial equipment from the region (cf. Bagnall Smith 1999).

Scrutiny of settlement morphology demonstrates that the builders followed entrenched templates in realising particular elements (e.g. circular structures, enclosures, settlement entrances). How these features were configured varied from site to site, though occasionally neighbouring enclosed settlements mirror each other or form pairs (Section 4.3). In consequence a landscape of settlements existed that shared considerable uniformity of elements but often diversity in the detail of their assembly. This picture contrasts with the more homogeneous patterns seen in some contemporary regions of Britain such as north-east England. Overall this pattern shows common cultural and phenomenological perceptions.

Something of a consensus view had been that through much of its duration, the Iron Age was a world of individual farmsteads each inhabited by an extended family or small kin group

(Hingley 1984; Hill 1995a). The archaeology seemed to underscore this idea with a patchwork pattern of small enclosed settlements around 0.25 ha. An idea that these were separate farms (as they did not occur in groups) led to the popular idea they were largely self-sufficient. In the East Midlands, in discussing the later Iron Age sites at Huncote and Enderby Meek described a world of small enclosed farmsteads across the landscape, characterized by a self-sufficient subsistence economy based on single family units/extended family units (Meek *et al*. 2004, 28). Chapman took the same view in characterizing the site at Hinckley, only in this case it was mainly pastoral (Chapman 2004, 79). Likewise the communities of the Peak District were seen as self-sufficient farms, separate and inward looking (Barnatt 1999; Barnatt and Smith 2004, 25). However, Cootes and Quinn questioned this idea of self-sufficiency and demonstrated that at least with regard to pottery the settlements were part of a wider connected community across the Peak District (Cootes and Quinn 2018; see Section 8.10.2). As documented above, finds from sites like Gamston and the Elms Farm/Manor Farm complex at Humberstone, confirm the existence of networks of exchange, seen too with the recent study of granitoid tempered pottery (Section 8.10.2). The discovery of the sites formed by agglomerated clusters of settlement, with large communities of several hundred people living in proximity, showed that different social arrangements existed and the need for more sophisticated models on how populations and economies operated.

Prehistorians have regularly seen large scale physical endeavours such as monument creation or the institution of earthworks at hillforts as collective undertakings that brought people together from dispersed settlements to a specific point in the landscape, these projects binding them in shared goals and experiences. Sharples saw the creation of the Iron Age hillfort at Maiden Castle, Dorset, in these terms, assisting community cohesion (Sharples 1991). The making of pit alignments and multiple dykes of the East Midlands may, by such thinking, have had similarly binding social effects. Feasting occasions too are seen in this light (cf. Needham and Bowman 2005; McOmish 1996; Gwilt 2009), remaking community and marking relations. There is some evidence for feasting within the region. The excavations at Washingborough, by the Witham, recovered apparent evidence for feasting during the era 1100-800 BC (Allen 2009). At Winton Road, Navenby, Lincolnshire, the content of a series of pits dating to the Early Iron Age suggests they received debris from feasting, perhaps with a ritual dimension, representing occasional but repeated communal activity, arguably reinforcing cohesion amongst a normally widespread community (Palmer-Brown and Rylatt 2011, 13-4). At Glenfield Park (Section 4.5.1), the corpus of cauldrons seemingly dating to the later Middle Iron Age presumably relate to communal gatherings featuring food consumption (Thomas 2018).

At the end of the period, at Hallaton, Leicestershire, evidence indicates feasting as an element of group activities and ceremonies at that site (Score 2011). Feasts were for larger gatherings in which the consumption of food will have been one element alongside perhaps games, the reciting of group folklore, group recognition of individuals honouring achievements and status passages, all potentially underscoring the social fabric. Finds of martial equipment and other items in the rivers of the region, as noted (Section 10.5), have been seen in terms of a narrative of gifting, envisaging a ceremonial act of social drama,

witnessed and shared by a community (Davies 2006; cf. Fitzpatrick 1984). Formal religious practices may have had a role in sustaining cohesion but again identifiable formal religious places are few and late in the sequence. We have no knowledge that any of these activities engendered social cohesion and, if so, to what level. The feasting and feature creation activities at least must have included a coming together of people in collective experience; but with votive deposition that is not certain but may be suggested.

Coin types and distributions of the Late Iron Age are often seen as a portal on politics and relations at this time. They have been used to extrapolate the dynamics of power, gifting and authority on the cusp of the Roman period. Leins follows this line in discussion of the Hallaton coin hoards and beyond (Leins 2011, 56-7).

15. Summary: The Resource and its Potential

The East Midlands is rich in archaeological remains of the first millennium BC. Only a small fraction has been investigated and recorded archaeologically, despite the explosion of mitigation work since 1990. In some areas extant remains are clearly extensive, as witnessed by cropmarks, or revealed by area stripping or seen through multiple interventions. In other areas, less well-known, the archaeology may also be extensive but the archaeological record may be skewed in these places by the difficulties of detecting sites by remote means and the limited extent of development work. The density of sites and field systems discovered in the Killingholme area and the hinterland of modern Grimsby, in North-East Lincolnshire, since 2000 has been a revelation in this respect, showing what can be present in areas with hitherto little record. In parts of Northamptonshire and Leicestershire, already known to have extensive remains for this period from earlier fieldwork and recording, the knowledge base has thickened dramatically in the past 25 years. On the other hand upland Derbyshire has, within an East Midlands context, an exceptional amount of upstanding archaeology, some well explored, but much is yet to be confidently dated and examined.

From a chronological perspective more is now known for the first half of the millennium when, previously, evidence was often elusive; better knowledge of pottery sequences and more radiocarbon dating has assisted in the identification of remains of this period, but it is still a thin record. Middle Iron Age archaeology has been prominent amongst the sites discovered and explored since 1990, adding more balance, as previously knowledge was skewed towards Late Iron Age sites - especially through surface finds of coins and brooches recovered from the late 1960s with the advent of recreational metal detecting. Consequently, a great deal more is now known and fully published compared to the period of gestation of the original Resource Assessment (2003). All considered, this means that there is now greater knowledge of stratification and context, association and date (where radiocarbon programmes have been possible or dateable finds, especially pottery, can provide this).

In consequence there are of course many more samples of artefacts and environmental

remains to draw upon. Excellent and innovative work continues to be undertaken but the potential of the resource is often not fully realized. The extent to which recovered assemblages have been studied and taken to publication is variable. So, more interventions and samples have not invariably resulted in better quality data; perhaps this is for reasons of limits to budget, time and other resources. Much reporting is formulaic, fitting lines of convention and not going beyond. Some recording and presentation techniques have changed within the past twenty years or so with digital recording and other technical and scientific advances manifest (e.g. applied use of GIS, LiDAR data, isotope analysis, ORA, a means of establishing more reliable C14 dates, etc.) and this has impacted on methods in some areas.

That said, in many areas the basic methods are unaltered: a practitioner from the 1970s would readily recognize approaches and techniques of the 2020s or their ethos. This is not a criticism but rather a reminder of how customary and conservative approaches have remained. The strength is that the records are objective and accessible but on the other hand their meaning and significance can be under realised. For instance, discussion sections can be brief, with limited or no attention to standard overview and synthesis literature for the period and some tendency not to reference beyond local reports. In addition, finds studies often remain compartmentalized with little attempt made to integrate and synthesize the material remains beyond their type categories as an overall assemblage and testimony to the life of a site. Instead this is often left to summary points in discussion rather than a specific engagement with the findings across categories of type that Evans called for with Roman sites (Evans 1995b, where he looked at proportions formed by pottery, animal bone, ceramic building material, iron, stone, etc. by site, phase and context; for the first millennium BC this may realistically be restricted to proportions of pottery versus faunal remains for most site cases). This general idea has been a principle followed for some sites elsewhere (e.g. Hunter 1999). It might be countered that finds recovery is too numerically modest at most first millennium BC sites to make this worthwhile, but, if so, that is an argument for the excavation of greater fractions of feature fills and layers. No reports viewed for the original Resource Assessment nor the current one carried any volumetric analysis despite the fact that this is straightforward to undertake (recording soil volumes excavated on site at the time or calculated digitally during post excavation from context measurements) and has been demonstrated to be a useful means of comprehending site formation processes (human practice) and site consumption patterns which may be compared between sites (e.g. Eastaugh *et al*. 2006). This method establishes the ratio of finds to volume excavated per context and/or context type and so establishes the frequency of items like pottery, bone and querns and by extrapolation environmental finds. At Foxhills, Brackley, for example, (see Section 4.2) there must have been a very high volume of excavated deposits per find but what was that ratio and how does it compare with other settlement clusters of similar date at Brackley and elsewhere? Volumetric analysis moves interrogation of finds beyond distribution/incidence plots or similar maps with absolute quantities shown by scaled symbols (useful as these may be when they occur). Doubtless in part ‘innovation’ is not happening because of the sheer scale of work needing to be undertaken day to day in order for archaeological recording to keep up with development (demands should not be underestimated). There may also be a need to raise awareness of these approaches and

encourage their incorporation in briefs and standards projects are working to as prepared by local government archaeological officers.

Often funds related to development work do not provide resources for full analysis and publication of sites, where the structural, artefactual or palaeoenvironmental evidence recovered is of particular significance. It is important that the information recovered in these cases is studied and made accessible for full-benefit, as emphasized by the recommendations in this wiki for making better use of excavation archives. Cases in point include Polwell Lane, Barton Seagrave, Northamptonshire (Simmonds and Walker 2014) and Hoveringham Quarry, Gonalston, Nottinghamshire (Knight and Elliott 2008), where excavations uncovered archaeological remains of unexpected significance.

The remains vary; some sites are palimpsests of recut ditches, gullies and structural features, others have few features with few intersections. Hence relative simplicity or complexity may be encountered. Meanwhile the numbers of finds (especially metal items) being recorded subsequent to the introduction of the Portable Antiquities Scheme has proved enormous, with highlights for the period appearing in the popular '*50 Finds From …*' book series published by the county Finds Liaison Officers. All these recovered elements, through study and synthesis, carry tremendous potential for informing about the 'life and times' of this period: the everyday and the mundane, the special and the event. The region participated in processes discernible elsewhere in Britain, but also has distinctiveness and both regional and sub-regional dimensions of contrast. The diversity of settlement evidence includes some breath-taking foci of human activity (e.g. Mam Tor, Borough Hill (Daventry) and Hunsbury hillforts) alongside more 'ordinary' domestic settlements. The material culture includes some of the most remarkable metal and non-metal artefacts to have been recovered from later prehistoric Britain: from older finds such as of the Desborough mirror and the Witham shield (Brailsford 1975; for the mirror see too the British Museum website, accession 1924,0109.1) to more recent discoveries like the set of glass beads recovered at Gardom's Edge dating to the first half of the millennium and possibly from the Near East (Jackson 2017) and the bark shield from Enderby (Kipling and Beamish 2018). Yet still a great deal more remains to be unearthed or preserved *in situ*. The rich nature of the evidence, through analysis and (changing) interpretations, can reveal how people situated and structured their lives, tackled practicalities and negotiated beliefs. The recent paper by Machling and Williamson (2018) on the torcs from Newark (Nottinghamshire) and Netherurd (Peebleshire) sheds light on crafts, trade and exchange, power, symbolism and culture; it is a rare case of an item from the region profiled in a national journal, and whilst special in that its nature allows a particular depth of research, so many other artefacts from the period hold evidence to be unbound through study to inform us. Both strengths and weaknesses exist in the record, and their clarification by means of this review will permit updating of the research agenda and strategy for the region, building upon and enhancing the Updated Research Agenda and Research Strategy that was published in 2012 (Knight *et al*. 2012) and converted subsequently to create the foundation for this interactive digital resource.

Despite advances, this improved knowledge is very incomplete. For the period *c*. 1000–500

BC in particular, and in some areas generally, the available information is weak. That much of our record of settlement and activity for the millennium derives from river valleys and margins and areas of permeable geology is unsurprising and reflects patterns seen elsewhere for the first millennium BC (e.g. in Warwickshire). This is clearly, in part, a consequence of the agricultural practices of the period. For various reasons, including the latter, the record for Northamptonshire is comparatively strong, while that for parts of Leicestershire (especially in the hinterland of Leicester, particularly to the north), parts of The Fens, and the Trent valley is now equally firm. For these areas something of a coherent picture is beginning to emerge. In certain places enough information has been gathered from survey and excavations to plot records for areas through time to begin to reconstruct wider views beyond individual sites and place them within their contemporary landscape milieu (cf. Section 13). Contrasts exist between areas conducive to intense study by a particular method (e.g. aerial photography of large areas of Lincolnshire), and relatively 'blank' landscapes (e.g. the Lincolnshire Marsh).

Across the counties the quantity of archaeological fieldwork attending to first millennium BC remains has been extensive. As in some other parts of Britain, the archaeology of this era has been one of the major beneficiaries of PPG16 and its successors: that is to say more information relating to this era has been forthcoming in the context of modern development, than for many other periods. It is likely that the existing biases in the environs examined by development-led archaeology projects will continue, exacerbating the patchy records of 'hot-spots' around existing urban areas and certain route-ways, while elsewhere there is little intervention and therefore little new data.

The archaeology of the first millennium BC in the East Midlands is of great significance for understanding wider patterns and processes of the period in Britain. A huge amount of work at various levels has been undertaken to realize the strong records now held for the region. The speed and scale of data 'inflow' and requirements and demands on those collecting and curating the information are very considerable. The potential of the resource, both recorded and extant but not yet known is likewise fulsome.

Appendix. A Note on Illustration

Whilst updating this Resource Assessment a colleague engaged in a similar exercise elsewhere in Britain contacted me as they noted what they saw as a decline in the frequency of the drawing of finds and in the quality of the drawings and they wondered if this was the case too for the East Midlands for the period considered here and wondered too more generally on the question of training and standards nationally.

The publication of the Washingborough excavations includes extensive illustration to a high standard including reconstruction by the late David Hopkins, which creates a helpful visualization closely reflecting the evidence recovered. The illustration of the various finds types in that volume is also exemplary.

Notes

1. The term roundhouse is used frequently in this Assessment reflecting directly the employment of the label by authors of the various reports consulted. A more neutral term is circular structure and that is occasionally used and was the preferred term in my original Assessment (Willis 2006). Roundhouse implies domestic living quarters of some type and by contrast circular structure carries the possibility of a variety of uses, and not necessarily roofed space. The term circular structure can seem purist and have the disadvantage of making such foci seem abstract from Iron Age lives, for buildings likely in the greater part to be lived and worked-in places where daily routines, emotions, etc. were experienced. From that perspective roundhouse may be the preferable term even if it carries interpretative implications. All said the quality of the evidence for these foci is normally not specific as to use and functions and the terms are from time to time used interchangeably and without specific definition in the literature of the region. Indeed, the tendency in the literature over the past two decades has been to label such remains, even if only part of an arching gully, as 'roundhouse' or likely roundhouse without reflective explanation. It would be better to term these types of remains as circular structures unless there exist traces indicative of occupation.
2. This Assessment does not extend to extracting information on finds from the Portable Antiquities Scheme.

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For the Bibliography – see separate document

Captions for Figures

Figure. Knight's suggested ceramic sequence for the East Midlands and its relationship to the metalwork sequence (cf. Haselgrove 1997, fig.8.1 and Needham *et al*. 1997, illus. 15). Source: Knight 2002, fig. 2.

Figure. The distribution of Post Deverel-Rimbury pottery sherds (dots), quernstones (Q), rubber (R), and shale ring production evidence (S) at Gardom's Edge 'House 1', Derbyshire. After Barnatt *et al*. 2017, figs 53 and 54. (Key: brown features: post holes; hatched features: stone).

Figure. Aerial photographs of the Elton-on-the-Hill site Nottinghamshire. Source: David Knight.

Figure. Plans of circular structures at Beaumont Leys and Humberstone, Leicestershire. Source: Thomas 2011a, fig. 124.

Figure. Interpretative plans showing suggested functional areas at the Humberstone settlement, Leicestershire. Source: Thomas 2011a, fig. 127.

Figure. A Nauheim brooch recovered during excavations at Mount Pleasant, Nettleton, Lincolnshire. Source: Willis 2013a, fig. 6.42. Photo: Lloyd Bosworth.

Figure. Honington Camp, Lincolnshire. Source: Steve Willis.

Figure. Examples of Later Bronze Age and Iron Age ceramic types from the East Midlands. Source: Knight 2002, fig. 3.

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