Cambourne New Settlement

Iron Age and Romano-British settlement on the clay uplands of west Cambridgeshire

Volume 2: Specialist Appendices

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Iron Age and Romano-British Settlement on the Clay Uplands of West Cambridgeshire

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Volume 2: Specialist Appendices
Part 1. Artefacts
Part 2. Ecofacts

Wessex Archaeology Report No. 23

Wessex Archaeology 2009

Published 2009 by Wessex Archaeology Ltd
Portway House, Old Sarum Park, Salisbury, SP4 6EB

http://www.wessexarch.co.uk

ISBN 978-1-874350-49-1

Project website

http://www.wessexarch.co.uk/projects/cambridgeshire/cambourne

WA reports web pages

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Struck and Burnt Flint

By Matt Leivers

Introduction

The flint assemblage studied here consists of 201 pieces, with approximately 60% from Lower Cambourne

The material spans the Mesolithic to the Iron Age periods. The site assemblages are dominated by flake debitage which is not susceptible to close dating: much of this element could belong anywhere between the Late Neolithic and the Middle Bronze Age. Tools are predominantly scrapers which – with a few notable examples – are similarly difficult to date. The very small numbers of distinctive tool types are noted below.

Methods

The material was analysed in accordance with Wessex Archaeology's recording system. Pieces were macroscopically identified to type, with examination with a x20 binocular microscope reserved for the identification of edge damage and retouch. All data have been entered onto an Access database held in the site archive.

Raw material

Material is highly varied. In terms of colour, pale grey, dark grey, orange, reddish brown, yellowish brown, pale brown and dark grey/black flint are all present, as is a variety of cortex thickness and colour, indicating collection from a number of sources. Quality is equally varied. The local drift geology consists of Boulder Clay with erratics of chalk and flint, from which much of the material is likely to derive.

Condition

Most pieces are lightly worn, and virtually all are have an intermittent pale grey/white patina. A small number of pieces are more evenly discoloured with a heavy white patina. Overall the condition of the assemblage is consistent with its largely residual nature.

Flint by chronological period

Chronologically distinctive pieces are generally limited to a number of tool types and a very small number of pieces where form and technology combine to identify debitage.

Mesolithic

A small bladelet core from Lower Cambourne has a pair of opposed platforms with abraded edges and a cortical back. Beyond indicating a human presence it is not possible to draw inferences from this single object.

Early Neolithic

Demonstrably Early Neolithic flint is limited to leaf-shaped arrowheads from Lower Cambourne (**Fig. 27**, 1) and Knapwell Plantation (**Fig. 27**, 2). Object no. 86 is regular, with covering bifacial retouch, and was residual within ditch 1321. Object no. 61003 is the medial portion of a second leaf-shape, again with covering bifacial retouch, from pit 60264.

The presence of a so few diagnostic tools prevents any detailed assessment of human activity in the Early Neolithic. At best it is possible to envisage small-scale, sporadic hunting episodes, with the arrowheads chance losses during these.

Late Neolithic/Early Bronze Age

A single plano-convex knife came from an unstratified location at Lower Cambourne (Obj. no. 126; **Fig. 27**, 3). The dorsal surface retains two distinct areas of cortex; otherwise there is a covering retouch. The ventral face is unaltered.

A relatively thin secondary flake has a scraper-like retouch on the distal and one lateral margin, with a lower-angle knife-like retouch opposite. This (Obj. no. 531; **Fig. 27,** 4) came from pit 2139 at Lower Cambourne.

The number of tools is again very low, but the range broader. The tasks indicated by the tools are perhaps more likely to be associated with processing rather than hunting, and may imply a more regular human utilisation of the area.

Late Bronze Age/Iron Age

A crude pebble chopper (**Fig. 27**, 5) came from fill 80415 in pond 80004 at Jeavons Lane. The working is very crude, and the platforms are littered with incipient cones of percussion from misplaced or careless blows.

The single tool is typical of Iron Age lithics, in which flint tends to be used expediently for very crude implements, mostly associated with crushing or pounding, perhaps in food processing tasks.

Lower Cambourne

The only assemblage worthy of note comes from Lower Cambourne. In virtually every other instance, the small quantities of lithics cannot be considered *in situ* and are too limited to allow discussion.

A total of 117 pieces of struck flint were recovered, as in **Table Struck Flint 1**.

Table Struck Flint 1. Lower Cambourne assemblage breakdown

Type	*Number*	*%*
Retouched tools		
Leaf arrowhead	1	0.85
Plano-convex knife	1	0.85
Scrapers	16	13.68
Miscellaneous	9	7.69
Tools sub-total	*(27)*	*(23.08)*
Debitage		
Flakes (incl. broken)	84	71.80
With edge damage	*(6)*	(*5.13*)
Burnt	*(4)*	*(3.42)*
Rejuvenation	2	1.71
Core fragments	2	1.71
Irregular debitage	2	1.71
TOTAL	117	100.00%

Debitage and cores

There are 92 pieces of unretouched debitage together with two core fragments and two core rejuvenation tablets. Hard hammers were used in every instance where technology was identifiable, and products include core preparation and rejuvenation although these are under-represented, as are cores themselves, of which there are no complete examples. Much of the debitage is crude, and may not have been produced during the creation of tool blanks.

The retouched tool assemblage

The range of tools is very limited. Scrapers dominate, and include both end and end-and-side examples (one of the latter made on a rejuvenation tablet and another on a *flanc de nucléus*). Most are rather crude and thick, and may belong to the later Bronze Age or even Iron Age. One (Obj. no. 531, from pit 2139) is on a relatively thin secondary flake with an abrupt retouch on the distal end and one lateral margin and a lower angle knife-like retouch on the opposite lateral margin. This piece may be Late Neolithic or Early Bronze Age. A leaf-shaped arrowhead, a plano-convex knife, and nine fragments with miscellaneous retouch complete the assemblage.

Discussion

The bulk of the assemblage is intrinsically undatable, and probably residual. The most obvious chronological indicators are the arrowhead and knife, probably of Early Neolithic and Early Bronze Age date respectively. Many of the scrapers appear later, perhaps contemporary with the Iron Age settlement, although they could be earlier. The flake debitage could be as early as Late Neolithic, although it is more likely to be predominantly Bronze Age or Iron Age. No particular densities were noted which

might indicate activity areas, and it seems most likely that the assemblage is largely residual in Romano-British features.

Other sites

The 22 pieces from Mill Farm include a flake with marginal retouch, an irregular end scraper of probable later Bronze Age or Iron Age date and a blade-like flake with edge damage. The remainder is unretouched flake debitage. Among the 16 pieces from Knapwell Plantation are a broken leaf-shaped arrowhead of Early Neolithic date and an unretouched blade struck with a soft hammer from a core with a single platform and abraded platform edges which may be of a similar date. A crude pyramidal core is likely to be later prehistoric. Five pieces were recovered from Jeavons Lane. Two flakes are likely to be later prehistoric; a crude chopping tool is Iron Age; a pair of patinated blades struck with soft hammer may be earlier Neolithic, but cannot be definitely dated. A large and very battered flint cobble from Broadway Farm has crushing around approximately three-quarters of its circumference. Too large and unwieldy to have been used in knapping, the piece a hammer or pounder of some sort. From the other sites came two scrapers, a broken flake and small amounts of undatable debitage.

List of illustrated pieces (**Fig. 27**)

Early Neolithic

1. Sf 86; leaf-shaped arrowhead. Context 45978, ditch group 1321.
2. Sf 61003; leaf-shaped arrowhead. Context 45972, (60168) pit 60264.

Late Neolithic/Early Bronze Age

3. Sf 126; plano-convex knife. Context 45978, unstratified.
4. Sf 531; knife/scraper. Context 45978, (2170) pit 2139.

Late Bronze Age/Iron Age

5. Chopper. Context 50068, (80415) pond 80004.

Burnt flint

A total of 3590 g of unworked, burnt flint was recovered from across the excavated areas. The material probably represents rubbish incorporated in fills, and as such need not be contemporary with the features from which it was recovered. Very few features contained over 50 g of burnt flint, and many of these were ditches or layers, although 1449g of burnt flint came from undated features of uncertain type.

Worked Stone

By Matt Leivers and Kevin Hayward

Querns

The most numerous worked stone objects are querns, the majority from Lower Cambourne. Saddle and rotary types are represented, with some fragments that cannot be definitely ascribed as one or the other (or as definite querns in some instances). Object Nos are given below, followed by context numbers in brackets.

Saddle querns

Saddle querns occur in coarse and fine Greensand.

548. (2291). Fine Greensand. Saddle quern; max surviving dimensions (mm): 285 (l), 127 (w), 80 (t). Upper face smoothed.
616. (2). Fine Greensand. Incomplete saddle quern; 195 (l), 138 (w), 51 (t). Upper face smoothed; later pecking on this surface suggests subsequently anvil?
22039. (2069). Greensand. Irregular bun-shaped cobble; 170 (l), 122 (w), 65 (t). Lower face smoothed; probable rubber.
61037. (61045). Fine Greensand. Broken tabular sandstone; 170 (l), 154 (w), 57 (t).
61057. (60766). Fine Greensand. Saddle quern; 309 (l), 144 (w), 84 (t). Upper face worn to slight concavity.

Rotary Querns

Rotary querns in a wider range of stone types came from contexts 60145 (igneous); 2291 (Old Red Sandstone); 1550 and 60536 (Greensand); 2308, 2603, 20577, and 40042 (Hertfordshire Puddingstone); and 2416, 2646, 2831, 3016, 80190, and 90001 (Quartz Conglomerate). Two visibly distinct types of Puddingstone are present: the piece from 40042 has smaller, predominantly red pebble inclusions, while the remaining pieces have much larger, predominantly yellow pebbles.

Where ascertainable, dimensions are given as diameter/max. rim thickness for upper stones; for lower stones as diameter/rim thickness/central thickness, in millimetres (following Buckley and Major 1983).

55. (2308). Hertfordshire Puddingstone lower stone fragment. 260/-/96. Hemispherical; central spindle socket; worn grinding surface. (**Fig. 32**, 1). Similar forms and material: Baldock 794 (Foster 1986); *Verulamium* 251–2 (Frere 1972).
329. (2603). Hertfordshire Puddingstone upper stone fragment. 280/-. Hemispherical; worn grinding surface. (**Fig. 32**, 2). Similar forms and material: Baldock 792 (Foster 1986).
549. (2291). Fine Micaceous Sandstone upper stone fragment. ?/45. Flat lower face worn smooth.
554. (2416). Coarse Gritstone lower stone fragment. ?/51/32. Radial grooves on flat grinding surface.
574. (2646). Quartz Conglomerate upper stone fragment. ?/46. Concave lower face worn smooth.
578. (2831). Quartz Conglomerate lower stone fragment. ?/36/28. Worn grinding surface.
586. (3016). Medium-grained Quartz Gritstone (Millstone Grit) upper stone fragments. 300/80.Very wide (oval?) hopper; groove around external circumference to hold ?iron hoop with projecting horizontal handle; irregularly worn grinding surface; handle socket in side. (**Fig. 32**, 3). Similar in form to Baldock 797 (Foster 1986).
587. (1550). Coarse Sandstone upper stone fragment. 340/80. Worn grinding surface.
24001. (20577). Hertfordshire Puddingstone upper stone fragment. ?280/-/111. Hemispherical; worn grinding surface; handle socket in side.

41023. (40042). Hertfordshire Puddingstone upper stone fragment, 260/-/90. Hemispherical; worn grinding surface.
61040. (60145). Dolerite lower stone fragment. Max. surviving thickness 44mm. Upper surface worn.
61042. (60536). Dolerite stone fragment. Max. surviving thickness 37mm. Upper surface worn.
94006. (90001). Coarse Greensand upper stone fragment. 300/-/225. Beehive quern upper stone; handle socket in side. (**Fig. 32**, 4).
- (80190). Millstone Grit upper stone fragments. ?/21. Upper surface has groove parallel to outer edge; lower surface has concentric grooving.

Each of the represented material types was widely used in Roman Britain, as was Niedermendig lava, of which single featureless fragments from contexts 769 and 70535, along with three from 40015, probably derive from querns. Thirteen fragments of a pitted Greensand from 90300 and another from 40288 are likely to be from querns of indeterminate type (the fragments from 90300 are likely to be Middle Iron Age).

Two further featureless pieces from 1878 (fine Greensand) and 2104 (Quartz Conglomerate) may or may not be quern fragments.

Distribution

The majority of fragments were recovered from Iron Age and Romano-British ditch fills, the only exceptions being from a Middle Iron Age roundhouse, and a Romano-British well, field system furrow, and soil layers. The pattern suggests a generally low level of disposal of broken querns, probably as normal rubbish (although more structured deposits of such items are known in both the Iron Age and Romano-British periods). Although likely to have been used in domestic contexts, it appears that querns were predominantly removed from those areas and disposed of away from houses, in enclosure and field system ditches.

Discussion

The variety of rock types present among the querns indicates that imports (either of raw materials or finished products) were made from a wide area, not limited to Britain. The pattern of presence and absence is similar to other sites in the general area, and is perhaps significant. There appears to be an emerging inverse relationship between querns of imported lava and those of local Puddingstone: at *Verulamium* King Harry Lane, Puddingstone was entirely absent, while lava formed approximately half of the total; at Baldock Puddingstone was present, and lava formed only one sixth of the assemblage (Stead and Rigby 1989, 51–2). This last ratio holds good for Cambourne, and also for Braughing, Hertfordshire, while the former is true at Colchester (Buckley and Major 1983, 75). Stead argues that this occurrence is unlikely to be due to physical differences of access to Puddingstone (or by extension lava) and suggests instead that the reason may be chronological, with those sites occupied earlier (Baldock, Cambourne) having Puddingstone querns of typical beehive form. The Colchester evidence suggests an alternative explanation, with lava querns predominating on Romano-British settlements, and traded separately from the native Puddingstone. Rudge's distribution of Puddingstone querns demonstrates a predominantly East Anglian focus (Rudge 1968) as opposed to the widespread occurrence of lava. That there need not be a straightforward replacement of one type

by the other is highlighted by Welfare (1986) who points out the economic desirability of a flourishing local manufacture.

In terms of the rocks themselves, the use of some of the sandstones is perhaps notable, as – as Peacock has noted – 'it is desirable that the surface should not wear smooth, but that it should retain a rough texture which will continue to cut the grain' (Peacock 1987, 61). This is certainly not the case in a number of the Cambourne examples, and it perhaps calls into question the identification of all of the saddle querns and rubbers.

Hammers/grinders

Five cobbles seem to have been chosen for their size and shape for use. Wear patterns indicate pecking/hammering or rubbing/grinding.

24006. (20780). Quartzite cobble, 90 x 68 x 47 mm. Upper and lower faces smooth (probably naturally); one face has pecking in the centre, perhaps from use as an anvil. The edges are very worn almost around the complete circumference. (**Fig. 32**, 5).
52001. (50077). Quartzite cobble, 80 x 70 x 48 mm. One edge battered, opposite sedge smoothed.
94005. (90131). Quartzite cobble, 71 x 56 x 54 mm. Both ends heavily battered. (**Fig. 32**, 6).
- (20616). Coarse Quartzite cobble, 110 x 88 x 47 mm. Irregular patterns of batter around two-thirds of circumference and across one surface.
- (23508). Greensand cobble, 85 x 73 x 40 mm. Both ends battered. Irregular facets worn smooth; some cut marks and polish possibly from use as a whetstone.

Whetstones

Whet- or hone stones occur in two basic shapes: long, narrow rod-shaped pieces with either sub-rectangular or sub-circular cross sections, and generally broad flat cobbles. In both classes some examples are not certainly whetstones (nos 753 and 94007 and the examples from 5011 and 5238), although all have facets or other alterations which indicate definite use.

195. (1308). Greensand. Sub-rectangular cross -ection. Length 68 mm (incomplete).
500. (335). Fine Micaceous Greensand. Flattened ovate cross section. Length 63 mm (incomplete?). (**Fig. 32**, 7).
594. (2619). Fine Greensand. Sub-circular cross section. Length 68 mm (incomplete).
753. (U/s). Fine Greensand. Sub-rectangular smoothed cobble. Length 103 mm.
81090. (80229). Greensand. Irregular sub-rectangular cross section. Length 108 mm. 'Waisted' towards one end. (**Fig. 32**, 8). Fine-grained grey sandstone.
94007. (90074). Micaceous Fine Greensand. Wedge-shaped; linear groove on each surface. Rectangular cross section. Length 100 mm (incomplete). (**Fig. 32**, 9).
- (5011). Fine Greensand lingulate cobble. Length 114 mm (incomplete).
- (5238). Fine Micaceous Greensand pebble split longitudinally; hemispherical cross-section. Length 83 mm (incomplete).

All of the examples were recovered from features dated to the Romano-British period. Contexts included pits, a pond, a spread and a field system furrow, indicating a pattern of disposal which – although similar to that identified for querns in its more casual elements – differed in so far as the major context for disposal in this case was the pit, rather than the ditch. This may perhaps point to a more domestic or settlement-based disposal of whetstones.

Worked fragments

Several rock fragments with signs of working (generally smoothed surfaces, cut marks, drilled holes or distinctive wear patterns) were recovered. Most are flat or flattish pieces of sandstone and limestone that are perhaps architectural offcuts; a flat piece of micaceous sandstone has four small similarly-sized holes in one surface, and may have served as a pad for drilling; a burnt sub-spherical flint pebble may be a slingshot; and a limestone object of uncertain status may be a bottle stop, if actually worked. Most came from Romano-British contexts (ditches, a well, a pit and spreads), with other fragments from an Early–Middle Iron Age pit and ditch, and the slingshot from a Late Iron Age enclosure ditch.

Other fragments

A quantity of stone with no obvious signs of working was recovered from across the excavated areas. These consisted of mudstones, sandstones, calcareous tufa, quartzite, limestones, Muscovite schist, hornfels, metasandstone, slate, and other non-local types.

Burnt stone

A total of 29,161 g of burnt stone (excluding burnt flint) was recovered. Predominant types include sandstone and quartzite, but other types are represented. None of the pieces has convincing signs of working.

Burnt stone was distributed widely across the excavated areas, most coming from ditches (12,520 g) and pits (11,317 g) of Iron Age to Romano-British date. There are no obvious differences in stone type or context between the different periods and it is unlikely that the material represents anything other than rubbish incorporated in fills.

Sources and trade

by Kevin Hayward

The earliest materials attested (saddle querns and probably some whetstones) consist entirely of local fine micaceous greensands from the Woburn Sands Formation and Phyllite, a fine metamorphic rock from the local glacial till.

In the Romano-British period, new materials were introduced in small quantities, with Millstone grit, Puddingstone, German lava, and Devonian sandstone as well as igneous materials all being used to grind foodstuffs. Millstone Grit, Hertfordshire Puddingstone, conglomerates, and coarse sandstones from the Upper Devonian Basal Conglomerate, Niedermendig Lava, and basic and acid igneous rocks were all utilised for rotary quernstones. Most of this stone was transported for some distance, reflecting both the unsuitability of the softer local materials (Lower Greensand and Kimmeridge Shale), and the central geographic position of the site with favourable communication links (especially Ermine Street during the Romano-British period).

Individual rock types indicate trade links with a number of diverse areas. Millstone Grit originates in Derbyshire, some 80 km to the north. Devonian Sandstones came from the Forest of Dean, 200 km to the west. Puddingstone would have been brought

from Hertfordshire and Buckinghamshire, 70 km to the west. German Lavastone travelled at least 500 km from the Rhineland.

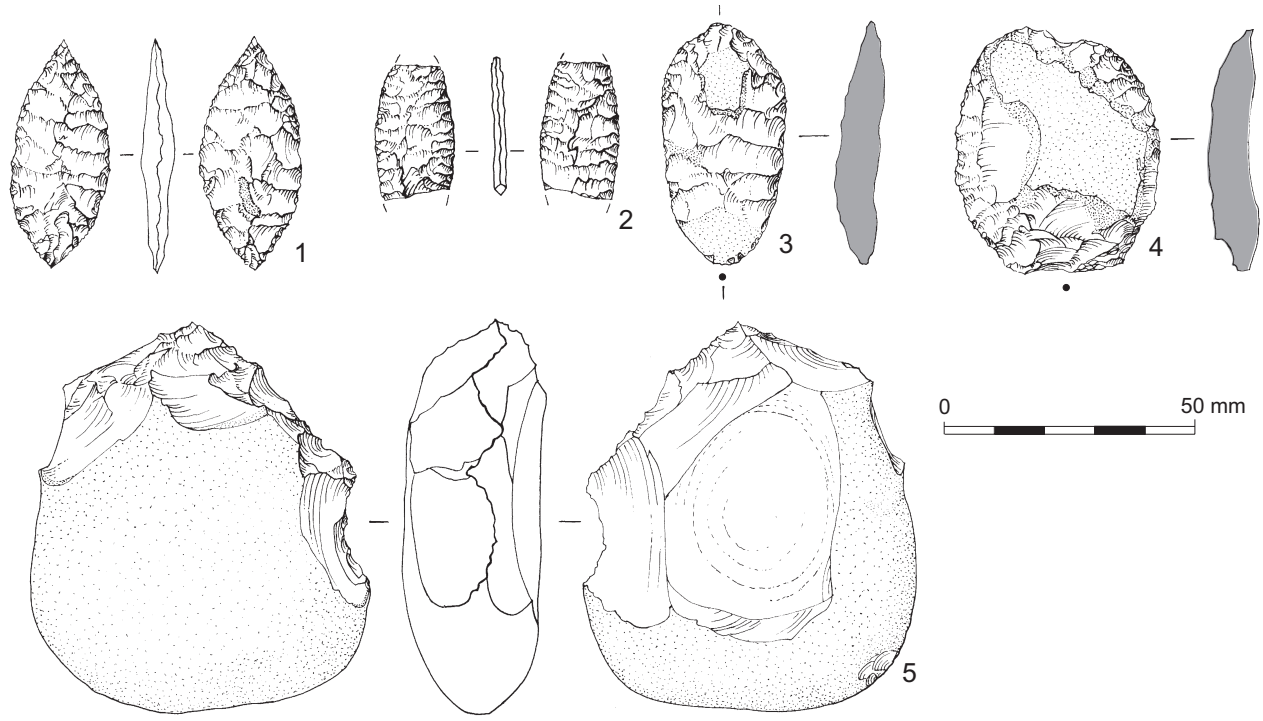
However, when compared to the stone assemblages from other Iron Age and Romano-British rural sites in the region (eg, Vicars Farm, Cambridge; Earith) the quantities of worked stone at Cambourne are rather small. The same stone types are common to all – the use of quartz gritstones and conglomerates from the Forest of Dean, Derbyshire, Hertfordshire and Buckinghamshire in rotary quernstones coincides with Romano-British occupation at these sites. This is also the case for German Lavastone from the Rhineland. Nevertheless, it is surprising that only small quantities (2 kg) of Millstone Grit occur at Cambourne. Complete or near complete grindstones of this material are common at Romano-British rural sites in the region, for example over 100 kg of this material has been identified 20 km to the north at Earith, and over 35 kg of Millstone Grit was recovered, 10–15 km to the east at Vicars Farm. The fact that no stone building materials were recovered at Cambourne, together with the dominance of local burnt greensand in the assemblage, may mean that Cambourne functioned as a lower status rural site.

Shale

By Matt Leivers

Fragments of worked shale amounting to 45 pieces were recovered from six contexts. One Late Iron Age ditch (90068) at Little Common Farm contained 25 badly laminated fragments which could not be identified. The remainder were all from Romano-British ditches at Lower Cambourne. These were again mostly small fragments which, although clearly worked, did not derive from recognisable objects and simply indicate that working of shale took place.

The only object was a spindle whorl (Obj. no. 141) from ditch 1055. Biconical with a flattened upper and lower surface, the piece had a diameter of 35mm and was 16mm thick with a central perforation 7 mm diameter (**Fig. 48**). One face is slightly concave with a single concentric groove; the opposite face is flat, with a single more distinct groove. These are a typical Romano-British type to which Lawson (1976, 272) assigns a late 3rd century date.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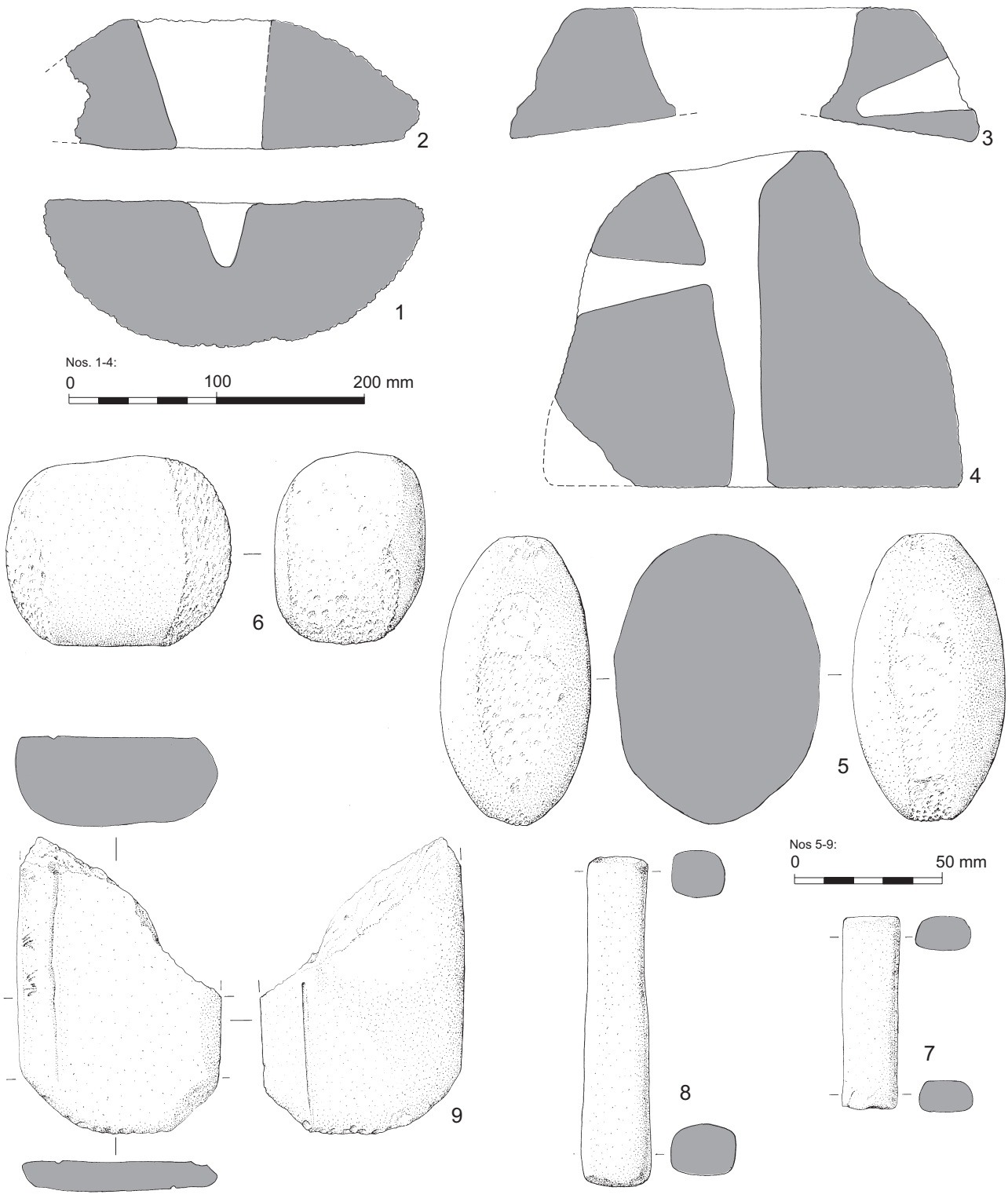
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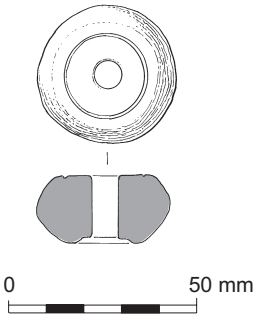
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Twelve excavations were carried out by Wessex Archaeology within the Cambourne Development Area. Situated on the clay uplands west of Cambridge, which have seen little previous archaeological investigation, the results presented here are important in demonstrating the ebb and flow of occupation according to population or agricultural pressure.

Short-lived Bronze Age occupation was followed in the Middle Iron Age by small farming communities with an economy based on stock-raising and some arable cultivation. The Late Iron Age seems to have seen a recession, perhaps partly due to increased waterlogging making farming less viable.

From the mid-1st century AD new settlements began to emerge, possibly partly stimulated by the presence of Ermine Street, and within a century the area was relatively densely occupied. Several farmsteads were remodelled in the later Romano-British period, though none seems to have been very prosperous.

Dispersed occupation may have continued into the early 5th century at least, followed by a hiatus until the 12th/13th century when the entire area was taken into arable cultivation, leaving the ubiquitous traces of medieval ridge and furrow agriculture.

ISBN 978-1-874350-49-1

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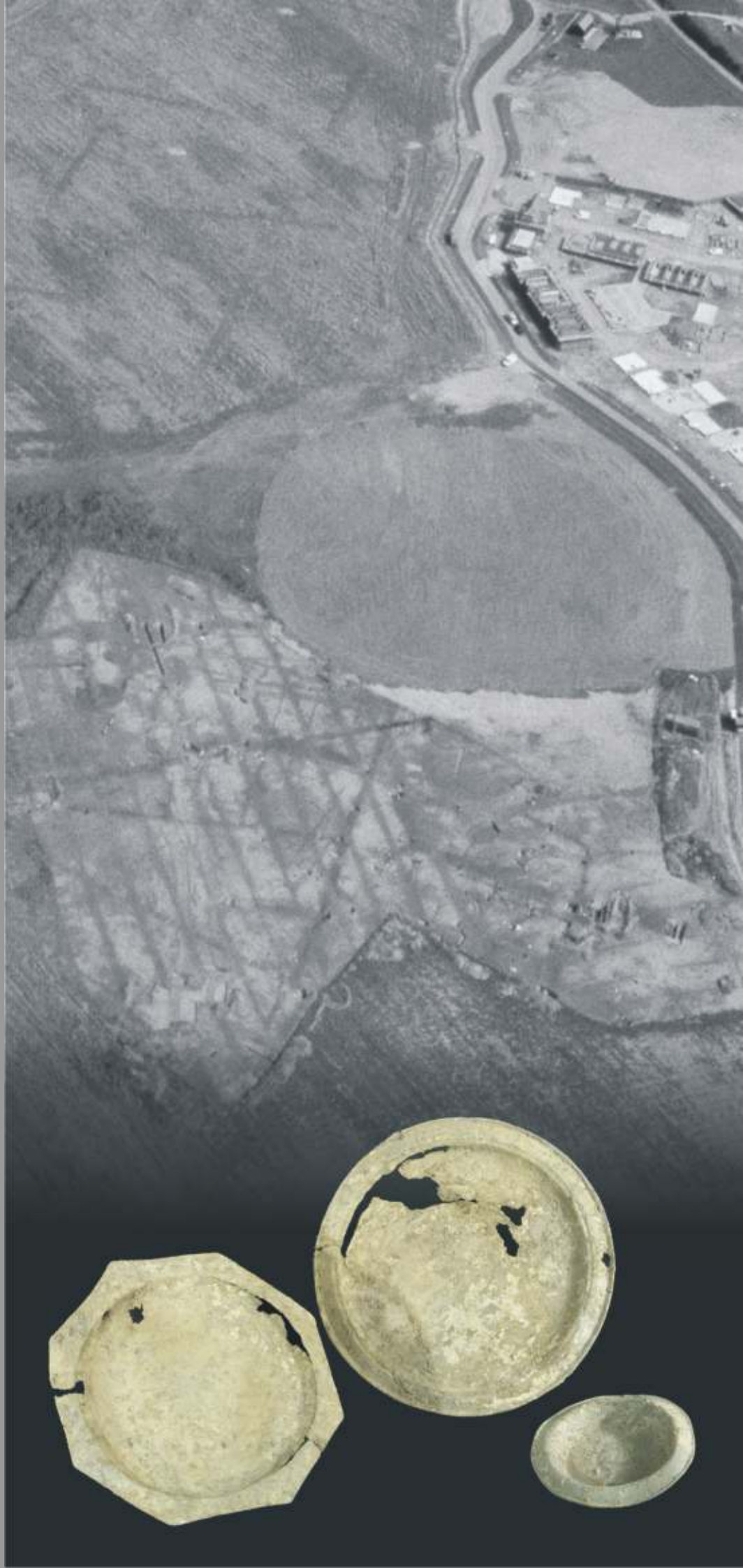

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