

Early Neolithic Pits and Artefact Scatters at North Fen, Sutton Gault, Cambridgeshire

By JONATHAN TABOR

With contributions by LAWRENCE BILLINGTON,
FRANCES HEALY and MARK KNIGHT

APPENDIX S1: WORKED FLINT: QUANTIFICATION, CONDITION AND RAW MATERIALS, TECHNOLOGY AND TOOL USE (Lawrence Billington)

TABLE S1: QUANTIFICATION OF THE FLINT ASSEMBLAGE

	<i>Pit clusters</i>							<i>Buried soil scatters</i>		
	1	3	4	5	6	7	Pits total	A	B	Total
chip (<10mm)	1	127	33	27	36	6	230	7	261	498
irregular waste		6	1	2			9	2	26	37
flake <20mm	2	90	18	21	63	1	195	35	119	349
flake >20mm	1	39	11	15	59		125	76	85	286
narrow flake	1	13	3	7	11		35	12	20	67
blade like flake		9	2	5	3		19	17	14	50
blade	1	9	2	2	10		24	9	6	39
bladelet	1	3	1	1	4		10	4	10	24
rejuvenation flake		2		1	1		4	2	10	16
irregular core				1			1		3	4
single platform flake core								1	1	2
two platform flake core									1	1
multiple platform flake core		1			1		2		3	5
single platform blade/narrow flake core									1	1
opposed platform core									2	2
core fragment				1			1	2	2	5
core on flake								1		1
tested nodule/minimally worked core					1		1			1
end scraper				1			1	2	2	5
sub circular scraper								1		1
other scraper			1				1	1		2
invasively retouched knife								3		3
leaf arrowhead			1		2		3	1		4
misc retouched		1		3			4		2	6
serrated		3	2	1	3		9	11		20
abruptly retouched pieces									10	10
total worked	7	303	75	88	194	7	674	187	578	1439
burnt unworked no.	0	7	0	2	1	0	10	1	27	38
burnt unworked weight (g)	0	9.9	0	0.7	4.3	0	14.9	6.8	122.3	144

Condition and raw materials

The assemblage is generally in very good condition, mostly unpatinated and with little edge damage or abrasion, reflecting its recovery from sealed deposits of buried soil or the fills of cut features. The assemblage is made up of generally fine grained and high quality flint, which is varied in terms of colour and the character of cortical surfaces. Grey/black flint is most common but there are also substantial quantities of stained orange to yellow flints. The majority of surviving cortical surfaces are thin and abraded, suggestive of a fluvial gravel source, although a significant minority of cortical pieces have a relatively thick unweathered cortex characteristic of primary chalk flint deposits or superficial deposits closely associated with the chalk (see Table S2). Whilst flint is absent from the very sandy deposits directly underlying the site, flint sources are probably available in the immediate environs of the site from the extensive areas of gravel terraces that underlie the peat in this part of the Lower Ouse Valley and much of the raw material may have been gathered relatively locally. The nearest source of fresh flint from the chalk is 25 km to the south-east from the Middle and Upper Chalk of south Cambridgeshire.

Technology

Taken as a whole, the Early Neolithic assemblage provides evidence for all stages of core reduction and includes decortication flakes, chips, waste flakes, and discarded cores. The reduction strategies can be broadly categorised as blade/narrow flake-based, reflected most clearly by the relatively large proportion of true blades, narrow flakes and blade-like flakes. The technology of the unretouched removals includes traits often associated with the careful and relatively systematic reduction of narrow flake/blade cores including a dominance of single direction, often parallel, dorsal scars and plain or marginal striking platforms invariably with dorsal trimming to remove projections on the core edge and strengthen the platform edge (Table S2). Although clearly based around the production of elongated, regular blades and narrow flakes there is no evidence for systematic preparation of cores by cresting and rejuvenation flakes, core tablets especially, are rare. There is clear evidence for both hard and soft hammer use but there is a clear emphasis on the use of softer hammers, particularly for the removal of the finer non-cortical removals. The 22 cores and fragments of cores include a wide range of forms comprising systematically exploited blade/narrow flake cores of opposed platform (Fig. 7, No. 9) and single platform forms alongside more irregular flake cores with multiple striking platforms (Fig. 7, No. 5). In general the cores have been heavily reduced and exhausted, with an average weight of 20 g.

Tool use

The retouched component of the assemblage is dominated by a typical range of Early Neolithic tools. Artefact Scatters A and B both contained a small number of residual or intrusive retouched pieces relating to different phases of activity on the site. In the case of Scatter A, these included four distinctive invasively retouched pieces (three flake knives and a scraper), which are probably of Early Bronze Age date. Scatter B included pieces likely to be considerably earlier than the bulk of the flintwork, most obviously several later Mesolithic microliths (classified here as abruptly retouched pieces, see below) and several fine prismatic bladelets also likely to be of Mesolithic date.

Of the 51 retouched pieces recovered from the Early Neolithic contexts, serrated blades and flakes are the most numerous type with 20 examples (Fig. 7, Nos 2, 4 & 6). The serrated pieces were made on a variety of blanks, including several relatively large and thick flakes, but with a clear preference for elongated blade and narrow flake blanks. Most pieces have a single serrated edge although there is one blade with serrations along both lateral edges. The serrations are fine, with between five and 14 notches per cm of serrated edge. Several of the serrated edges are heavily worn and it is possible that other, worn examples have been misidentified as utilised pieces (see Donahue & Evans 2009). The distinctive bright gloss often observed on the edges of these tools, interpreted as the result of working silica-rich plant material, was present only a single example from pit F.49. One piece, made on a large flake blank has a blunted lateral edge opposed to its serrated edge, presumably to facilitate handling. In general it seems likely that most of the serrated pieces would have functioned as hand held tools rather than being hafted, although a single example has a straight proximal truncation formed by abrupt dorsal retouch and may represent an insert for a hafted composite tool.

TABLE S2: SELECTED ATTRIBUTES OF THE FLINT ASSEMBLAGE

		<i>Pit clusters</i>				<i>Buried soil scatters</i>		
		3	4	5	6	All pits	A	B
raw materials	total worked flint	303	75	88	194	674	187	578
	coloured gravel flint (%*)	10.3	13.7	11.5	32.3	18.7	12.2	n/a
condition	cortical pieces with thick cortex (%)	35.0	42.0	60.0	5.2	28.0	15.5	1.2
	burnt (%)	0.0	17.3	12.5	19.6	14.2	5.9	13.1
cortex coverage on dorsal surface of unretouched removals	broken (%*)	60.8	64.3	57.4	61.4	58.1	51.1	46.3
	100% (%)	4.3	2.8	1.9	2.0	2.9	1.3	4.9
removals	over 75% (%)	3.7	8.3	0.0	2.0	2.9	5.2	6.1
	25–75% (%)	8.7	5.6	26.4	15.2	13.2	19.4	19.8
striking platforms of unretouched removals	under 25% (%)	18.0	13.9	13.2	18.5	17.2	20.6	25.1
	none (%)	65.2	72.2	58.5	62.3	63.8	53.5	44.1
removals	plain (%)	38.2	50.0	56.3	41.3	42.8	52.1	44.9
	marginal (%)	36.0	30.0	28.1	36.3	34.1	23.1	27.6
striking platforms of unretouched removals	> 1 scar (%)	9.0	5.0	3.1	10.0	8.7	8.5	3.2
	cortical (%)	3.4	10.0	9.4	3.8	4.8	11.1	15.7
removals	dihedral (%)	0.0	0.0	0.0	0.0	0.0	0.0	1.1
	faceted (%)	6.7	0.0	0.0	2.5	3.9	3.4	1.6
terminations of unretouched removals	finely faceted (%)	0.0	0.0	3.1	0.0	0.4	0.9	1.1
	shattered (%)	6.7	5.0	0.0	6.3	5.3	0.9	4.9
dorsal scar direction on complete removals	% all platforms with dorsal trimming	70.8	80.0	56.3	65.0	67.2	65.8	33.0
	feathered/normal (%)	78.6	70.8	79.4	85.7	80.8	80.4	87.8
removals	hinged (%)	19.6	25.0	20.6	13.3	17.8	16.7	11.7
	plunged (%)	1.8	4.2	0.0	1.0	1.4	2.9	0.5
direction on complete removals	single (%)	80.3	80.0	88.2	89.3	85.4	89.7	80.6
	multiple (%)	16.4	20.0	11.8	10.7	13.4	10.3	18.0
chips and flakes <20mm (%)	opposed (%)	3.3	0.0	0.0	0.0	1.3	0.0	1.4
	chips (%)	41.9	44.0	30.1	18.6	34.1	3.7	45.1
irregular waste (%)	chips and flakes <20mm (%)	74.5	72.0	65.1	56.7	63.1	27.8	68.7
	irregular waste (%)	2.0	1.3	2.3	0.0	1.3	1.1	4.5
retouched (%) (%*)	retouched (%) (%*)	1.3 (2.3)	5.3 (9.5)	5.7 (8.2)	2.6 (3.2)	2.6 (4.1)	10.2 (10.6)	2.4 (4.4)
	utilised (%) (%*)	4.6 (8)	2.7 (4.8)	6.8 (9.8)	2.6 (3.2)	4.3 (6.5)	13.4 (13.9)	n/a
proportion of removals blade based (%)	flakes >20mm to cores	66.0	Nc	12.5	38.0	36.1	27.5	9.8
	proportion of removals blade based (%)	7.3	8.1	5.5	9.3	8.2	8.4	6.1

A total of eight scrapers were recovered from Early Neolithic contexts (including the probable Early Bronze Age scraper from Scatter A) (Fig. 7, Nos 1, 8 & 10). Most of these are simple convex end scrapers, two of which are made on decortication flakes. Also present were six miscellaneous retouched pieces, generally pieces with minimal edge trimming probably used as cutting tools. A single complete arrowhead and three broken leaf-shaped arrowheads were also recognised in the assemblage. The complete example, from pit F.66, is of

unusual form, manufactured on a blade with a naturally pointed distal end which has been lightly edge trimmed whilst the proximal end bears fine bifacial invasive retouch (Fig. 7, No. 3). The broken arrowheads include the medial part of a thin finely retouched piece from Scatter A made up of two refitting fragments recovered from the same test pit (Fig. 7, No. 7). Whilst this break could have occurred during excavation or through trampling/disturbance in prehistory it may represent breakage during manufacture (Lamdin-Whymark 2008, 63–4, pl. 8).

The most unusual element of the retouched component are a group of pieces which have been categorised here as abruptly retouched pieces, all recovered from Scatter B. These form a fairly disparate group of tools but all bear some abrupt retouch which in several cases is microlithic in character and it is likely that some of them represent backed tools of Mesolithic date. This is especially true of a heavily patinated backed bladelet and two pieces with convex backing which resemble crescent shaped microliths of Jacobi's type 9 (Jacobi 1978). Other pieces, especially the three illustrated examples (Fig. 7, Nos 11–13) are unusual in terms of the morphology of the retouched edges and the irregular character of the retouch and cannot be easily paralleled in Mesolithic or earlier Neolithic assemblages.

Alongside the retouched tools are a large number of unretouched removals with macroscopically visible traces of use. The percentages of utilised pieces given in Table 5 are likely to be a significant underestimate of the actual total as only those used intensively or on harder materials will display the edge damage exhibited by these examples. Blank selection for utilised pieces appears to have favoured either narrow blade-based pieces or flakes which could be easily handled, often with naturally blunt edges opposing a sharp cutting edge. All of the utilised pieces were relatively large, ranging from 20 mm to 90 mm in length (mean 37.8 mm). The majority display edge damage along one naturally sharp lateral edge and appear to have been used as cutting tools, more rarely some pieces display edge damage on steeper distal or lateral edges suggestive of a scraping action.

APPENDIX S2: EARLY NEOLITHIC POTTERY: FORMS, FABRIC, AND DECORATION
(Mark Knight)

TABLE S3: ASSEMBLAGE BREAKDOWN

	<i>Number</i>	<i>Weight (g)</i>	<i>MSW (g)</i>
Feature	684 (56.3%)	4546 (76.0%)	6.6
Test pit	524 (43.0%)	1366 (22.8%)	2.6
Surface Find	7 (0.6%)	68 (1.1%)	9.7
Totals	1215	5980	4.9

TABLE S4: ASSEMBLAGE COMPOSITION

	<i>Number</i>	<i>Weight</i>	<i>Rims</i>	<i>Decorated</i>	<i>Large (>80 mm)</i>	<i>Medium (>40 mm)</i>	<i>Small (<4 mm)</i>
Features	684	4546g	39	6	6	106	572
Buried Soil Scatter A	403	1046g	16	15	0	10	393
Buried Soil (general)	121	320g	3	3	0	4	117
Surface	7	68g	1	2	0	1	6
Totals	1215	5980g	59	26	6	121	1088

Fabric

Three principal fabric types were identified within the Early Neolithic assemblage. To some extent the first two fabrics (Fabrics 1 & 3) represented variations of the same material only with different size flint inclusions and amounts of sand admixture. The presence/absence of added slips along with other surface treatments also helped distinguish the latter from the former. The third fabric in the sequence (Fabric 4) was made distinct primarily because of its vacuous or 'corky' appearance caused by multiple thin linear voids (dissolved shell) as well as its relative 'lightness' and softer texture.

Fabric 1 Hard with frequent large, medium and small burnt FLINT and common SAND.

Fabric 3 Medium hard (compact) with frequent medium and small burnt FLINT and rare to occasional SAND. Fabric includes frequent use of applied slips both internally and externally masking coarse inclusions and producing a smooth soapy surface texture.

Fabric 4 Medium with frequent linear VOIDS (lost shell) and occasional small burnt FLINT and SAND.

Sherds made of Fabric 3 were virtually exclusive to buried soil Scatter A. Fabrics 1 and 4 occurred across the main pit site and occasionally within individual test pits distributed across the ridge away from Scatter A. The ratio of shell to flint tempered fabrics was high (c. 30%) especially when compared to easterly (Suffolk/Norfolk) Mildenhall assemblages of Hurst Fen (Clark *et al.* 1960), Kilverstone (Garrow *et al.* 2005) and Spong Hill (Healy 1988), all of which generated only small percentages (less than 5%) of equivalent vacuous fabrics. Conversely, westerly (Northamptonshire/Peterborough) Mildenhall assemblages from sites such as Briar Hill (Bamford 1985) and Etton (Kinnes 1998) produced greater numbers of sherds made with shell or vacuous fabrics (more than 60%). Perhaps North Fen's central-fen setting, betwixt the predominantly hard flint-rich assemblages of Kilverstone and Hurst Fen and the softer shell-rich assemblages of Briar Hill and Etton, was made manifest in its particular fabric configuration (Fig. S1).

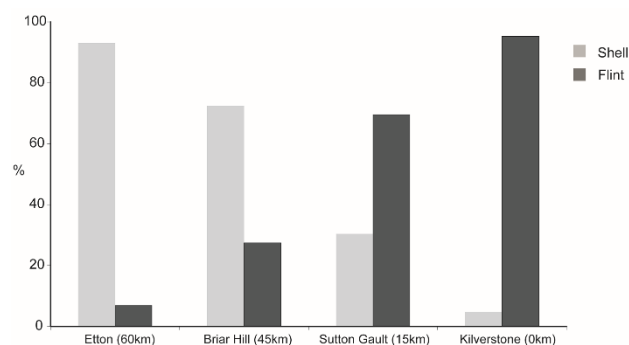


Fig. S1.

East Anglian Mildenhall sites: Principal opening materials and approximate distance from the flint-rich Brecklands/Chalk outcrops

TABLE S5: KEY CONTEXTS: DISTRIBUTION AND FRAGMENTATION OF MILDENHALL POTTERY

Context	Feature	Quantity	Weight	Small <40 mm	Medium >40 mm	Large >80 mm
Buried Soil Site 1		403	1050g	393	10	0
Cluster 3	48	21	194g	17	4	0
	49*	111	1036g	92	18	1
	50*	31	138g	29	2	0
	51	44	120g	43	1	0
	52	6	10g	6	0	0
	53	11	36g	10	1	0
	55	1	1g	1	0	0
	Sub total	225	1535g	198	26	1
Cluster 4	117	1	8g	1	0	0
	118	16	92g	13	3	0
	119	7	34g	6	1	0
	120	6	24g	4	2	0
	123	36	64g	34	2	0
	124	6	42g	5	1	0
	Sub total	72	264g	63	9	0
Cluster 5	38	16	34g	15	1	0
	40	11	9g	11	0	0
	42	4	6g	4	0	0
	43	21	31g	21	0	0
	Sub total	52	80g	51	1	0
Cluster 6	66	80	498g	56	24	0
	74*	196	2038g	146	45	5
	Sub total	276	2536g	202	69	5
	Total	1028	5461g	907	115	6

(*Denotes features containing sherds of the same vessel)

Forms

The majority of the range of forms present corresponded with the Hurst Fen-type series (Clark *et al.* 1960), and included simple/straight-sided, shouldered and 'S'-profiled bowls as well as simple cups (Fig. S2). The assemblage incorporated neutral as well as semi-closed profiles but no obvious open forms. Small-, medium- and large-sized vessels were identified and the measurable diameters ranged between 15 cm and 32 cm.

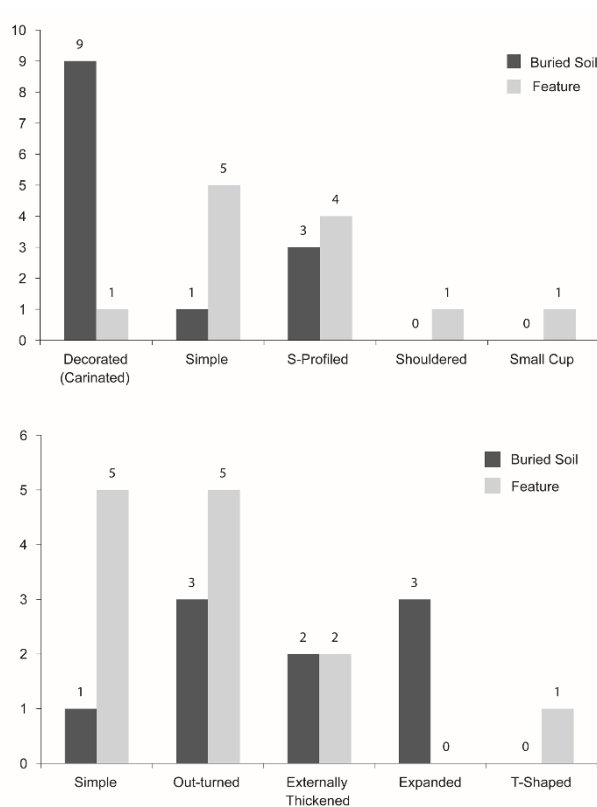


Fig. S2.

Distribution of forms by context and distribution of rim types by context

Amongst the range of forms it was possible to separate the group into finewares and coarsewares/heavier storage vessels based primarily on the presence or absence of decoration, applied slips, burnished surfaces and fine or crude modelling of features such as rims, necks and shoulders.

Rim types also conformed to the established Mildenhall series and incorporated simple, out-turned, externally thickened, expanded and 'T'-shaped varieties (Fig. S2). As with the vessel forms both finely modelled and crudely finished rims were present. In addition, overtly flattened or compacted versions of the out-turned or expanded types were also identified and these invariably occurred on the coarseware or softer fabric component of the assemblage recovered from pit related contexts. Flattened or compacted rim types are unusual in terms of the standard Mildenhall repertoire although equivalent examples were recorded within the Etton sub-style assemblage, including flattened out-turned rims decorated with comparable diagonal slashes (Kinnes 1998, 161–212). A horizontal strap-lug occurred on a single vessel (P29).

Decoration

With a single exception, decoration was restricted to the hard fabric/fineware element of the overall assemblage. When present, decoration occurred across five main zones or vessel parts: mouth, lip, rim, neck and shoulder, and invariably comprised incised and impressed motifs: vertical/diagonal incised lines (mouth and lip), diagonal lines (rim), vertical incised lines or single rows of pin-prick impressions (neck), horizontal rows of small crescent-shaped stabs, pin-prick or sharp punctate motifs (shoulder). The various incised lines were consistently made with a sharp tool/implement perhaps equivalent to the device used to make the punctate impressions. This organised decoration pattern demonstrated a strong correlation with fineware bowls that also had internally and externally applied slips. The exception was a large 'S'-profiled bowl with a flattened out-turned, almost 'T'-shaped, rim adorned with deep, diagonal slashes along its compacted lip. The tool/implement used in the execution of the motif was blunt in comparison to the other decorated forms and occurred on a coarse, shell tempered form without applied slips.

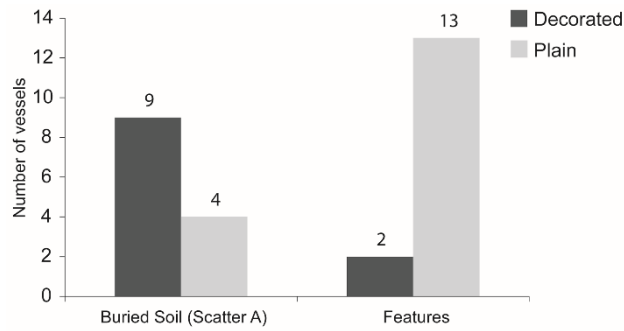


Fig. S3. Distribution of decorated forms

As mentioned above, the distribution of plain and decorated pottery was dependent on context with the majority of recognisable vessels from pits being plain (13 plain, 2 decorated), and the majority of vessels from Scatter A being decorated (9 decorated: 4 plain; Fig. S3). The pits included a single decorated ‘fineware’ (P29) and a single decorated ‘coarseware’ (P19). The remaining 13 plain vessels were all coarsewares and as such appropriately unembellished (Fig. S4) Within the Mildenhall tradition decorated coarsewares do occur and typically the decoration is restricted to the rim. At Kilverstone a single S-profiled, shoulder bowl had fingernail impressions along the top of its rim (Knight 2006, P77) whilst at Etton several, otherwise ‘plain’ forms had incised decoration around the rim (Kinnes 1998, M79, M102, M157 and M171 for example; Fig. S5).

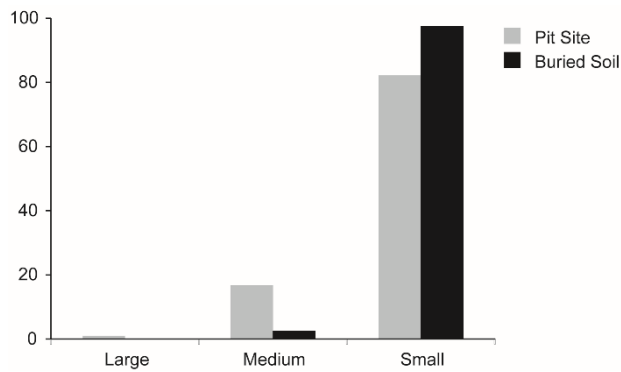


Fig. S4.

Distribution of large, medium and small sherds by principal context

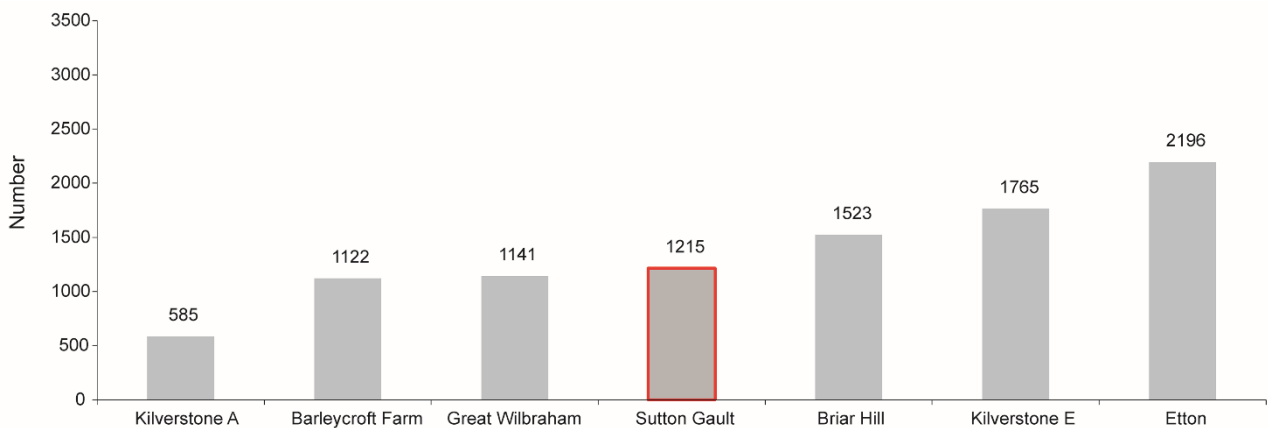


Fig. S5. Key Mildenhall assemblages

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