The Neolithic and Bronze Age pottery

Pat Marsden and Ann Woodward

Introduction

A total of 2057 sherds of Neolithic and Bronze Age pottery weighing 9381g were recovered from the excavations. The average sherd weight is 4.6g. Table 1 shows a breakdown of the pottery by period with Ebbsfleet Ware and Peterborough Ware constituting *c*.92% of the total pottery by weight. Smaller quantities of earlier Neolithic pottery including Mildenhall Ware are also present, together with Beaker, Early Bronze Age ceramics and a sherd of a possible refractory vessel of uncertain period.

A total of 101 rim sherds (from 72 rims) are represented, along with 41 part rim sherds undiagnostic to rim type, 19 base sherds from at least seven base angles, 34 shoulder sherds and 7 collar sherds. The small number of base angles, except amongst the Beaker pottery (see illustrated sherds 30, 31 and 32), can be explained by the fact that earlier and Middle Neolithic pottery, and typically Peterborough Ware, is mainly round-based and base sherds are therefore difficult to identify . However, it should be noted that a small number of Fengate base fragments (eg. illustrated sherd 28) are present.

Although some contexts produced large fresh sherds, there is also a great deal of abraded and very abraded pottery. This can be explained as pottery of this period is often fragile, breaking up very easily, and also due to the pottery having been deposited in surface spreads.

Ware	Sherd No	Weight (g)
EARLIER NEOLITHIC BOWL	34	159
MILDENHALL	18	172
EBBSFLEET	11	128
EBBSFLEET/MORTLAKE	70	352
MORTLAKE	46	607
MORTLAKE/FENGATE	67	315
FENGATE	52	583
PETERBOROUGH	1671	6619
BEAKER	77	240
EBA	9	186
REFRACTORY?	2	20
	2057	**9381**

Table 1 Occurrence of pottery by ceramic style (sherd no. and weight)

Methodology

The pottery was analysed and catalogued by Patrick Marsden. The information was inputted onto the database by Dan Prior. Ann Woodward acted as consultant providing guidance on methodology and undertaking tasks in a number of areas, such as the identification of ceramic styles and sub-styles, detailed analysis of selected feature groups, the checking of drawn sherds and record sheets and interpretation of dating, petrology and lipid analysis. Adam Tinsley helped with Peterborough Ware style and sub-style attribution and provided parallels with ceramics from other British sites. Sample sherds for petrological study and for lipid analysis were selected jointly by Ann Woodward and Patrick Marsden.

The archive includes a paper record consisting of both prehistoric pottery record and featured sherd record sheets. Featured sherd record sheets, including archive sketches, were completed for complete rims, bases, large body sherds displaying particularly unusual decorative schemes and larger shoulder, neck and collar fragments. The

pottery data was then entered onto the integrated Microsoft Access database. The following data fields were recorded: fabric type, sherd number, weight (g), rim type, base type, decoration (technique, motif and location), sherd thickness, rim diameter, surface treatment and ware group. The presence of carbonised residues, abrasion and other additional information was also recorded in the comments field of the paper record and database. The methodology and recording systems used broadly follow the guidelines for the analysis of later prehistoric pottery (Prehistoric Ceramics Research Group 1997) although adaptations were made for the purposes of this project. Codes were given for fabric types and groups, and rim and decoration type. The pottery was allocated to fabric with the aid of microscopic examination using a system devised by Ann Woodward (Ellison 1975) and then coded using an alphanumeric system devised by Patrick Marsden–see **Fabrics** below. Rim types were recorded using a system devised by Ann Woodward and Patrick Marsden (see **Forms** below). Decoration was recorded using codes created by Patrick Marsden for the purposes of this project (see **Decoration** below).

6 sherds with carbonised residues were submitted for C14 analysis (see Marshall and Hamilton separate report). 10 sherds were also sent for petrological analysis and an additional two sherds included for hand specimen examination of specific large inclusions (see Whitbread and Johnson report elsewhere). A total of fifty sherds were submitted for lipid analysis (see separate Evershed report).

Fabrics

As described above the pottery was examined using a x10 binocular microscope and allotted to fabric groups based on the dominant type of inclusion and to a fabric type within each group. This followed established guidelines for fabric analysis (Prehistoric Ceramics Research Group 1997). Fabrics were analysed using the system designed by Ann Woodward to characterise all known Middle Bronze Age pottery in southern England (Ellison 1975). Codes were then allocated to types and groups alphanumerically (see below).

The grading system abbreviations are listed below.

(1) Density	1.	<fragments/cm2 of surface (sparse)
	2.	5-10 fragments/cm2 of surface (medium)
	3.	>10 fragments/cm2 of surface (dense)
(2) Fragment size	S	<0.5 mm diameter (small)
	M	0.5-1.00 mm diameter (medium)
	L	>1.00mm diameter (large)

(3) Filler type

Fl flint
Gr grog
Qu quartz
Qt quartzite
Ro rock
Sa quartz sand
Sh shell
Ss sandstone
Ve vegetable matter (organic)
CP clay pellets

A total of 8 groups were identified and a total 19 fabric types within these groups. Codings and associated brief descriptions by Patrick Marsden follow:

Flint

Fl1 1 L Fl ; 3 S-M Sa

Large flint inclusions in a sandy fabric.

Fl2 1 L Fl ; 1 L Ro ; 3 S-M Sa

Large flint and rock inclusions in sandy fabric. Sherd thin-sectioned from this group (see Petrology Report Group 6, TS no. P6).

Grog

Gr1 3 M-L Gr ; 3 S-M Sa

Dense grog in a sandy fabric.

Gr2 2 M Gr ; 3 S-M Sa ; 1 L Ss

Grog in a sandy fabric with sparse sandstone. A sherd was thin-sectioned from this group (see Petrology Report Group 4, TS no. P2).

Gr3 1 M-L Gr ; 3 S-M Sa

Sparse grog in a sandy fabric.

Quartz fabrics

Qu1 1-2 L Qu ; 1 S-M Sa ; 1 L Qt ; 1 L Ro

Fabric with large quartz inclusions (apparently from pebble source). Occasional vessels contain large quartzite and rock fragments. Two sherds were thin-sectioned from this group (see Petrology Report Group 1, TS nos P4 and P10).

Qu2 1 L Qu ; 3 S-M Sa ; 1 L Qt ; 1 L Ro ; 1 L Fl ; 1 L Ss

Large quartz inclusions in sandy fabric, with less frequent large quartzite and rock inclusions. The large inclusions are probably all pebble derived. Occasionally large flint and sandstone present in vessels. Two Qu2 sherds were thin-sectioned (see Petrology Report Group 1 TS no. P9 and Group 2 TS no. P2).

Qu3 3 S-M Qu ; 3 S-M Ro ; 3 S-M Sa

Dense small to medium-sized quartz, dull white rock and sand.

Rock Fabrics

Ro1 1-2 L Ro ; 1 L Ss ; 1 S-M Sa

Fabric with large inclusions of dull greyish white rock. A sherd was thin-sectioned from this group (see Petrology Report Group 3, TS no. P3).

Ro 2 2-3 M-L Ro ; 3 S-M Sa

Dull greyish white rock similar to Ro1 but with sandy fabric. A sherd was thin-sectioned from this group (see Petrology Report Group 3, TS no. P8).

Ro 3 1 M-L Ro ; 1 L Qu ; 2-3 S-M Sa

Fabric with rock containing gold mica of possible granitic type (origin uncertain), rare large quartz inclusions and sand. A sherd was thin-sectioned from this group (see Petrology Report Group 7, TS no. P7).

Sand

Sa1 3 S-M Sa

Sandy fabric.

Sa2 3 S Sa ; 3 M-L CP

Sandy fabric with abundant clay pellets. Sherd thin-sectioned from this group (see Petrology Report Group 5, TS no. P5).

Sa3 3 S Sa

Sandy fabric, more fine-grained than Sa1.

Shell

Sh1 3 L Sh ; 3 S-M Sa

Large voids formerly containing shell in sandy fabric.

Sandstone

Ss1 1 L Ss

Large sandstone.

Ss2 1 L Ss ; 3 S-M Sa

Large sandstone inclusions with sand.

Ss3 1-2 M-L Ss ; 2-3 S-M Sa ; 1-2 M-L Ve

Large sandstone with sand and vegetable matter.

Unclassified

U no clearly identifiable inclusions or sherd too small to give fabric category to.

Ware	Sherd No	FL1	FL2	GR1	GR2	GR3	QU1	QU2	QU3	RO1	RO2	RO3	SA1	SA2	SA3	SH1	SS1	SS2	SS3	U
EARLIER NEOLITHIC BOWL	34						3	25	1									2	2	1
MILDENHALL	18						3	15												
EBBSFLEET	11						4	7												
EBBSFLEET/MORTLAKE	70						22	48												
MORTLAKE	46	1					8	32		5										
MORTLAKE/FENGATE	67						53	14												
FENGATE	52						5	47												
PETERBOROUGH	1671	1	9				766	824	1	8	4	10					1	2	8	37
BEAKER	77			5	62										1	7				2
EBA	9					1								5						3
REFRACTORY?	2												2							
	2057	**2**	**9**	**5**	**62**	**1**	**864**	**1012**	**2**	**13**	**4**	**10**	**2**	**5**	**1**	**7**	**1**	**4**	**10**	**43**

Table 2.1 Occurrence of fabric types/groups by ceramic style (sherd no.)

Ware	Weight (g)	FL1	FL2	GR1	GR2	GR3	QU1	QU2	QU3	RO1	RO2	RO3	SA1	SA2	SA3	SH1	SS1	SS2	SS3	U
EARLIER NEOLITHIC BOWL	159						8	111	11									6	16	7
MILDENHALL	172						15	157												
EBBSFLEET	128						56	72												
EBBSFLEET/MORTLAKE	352						70	282												
MORTLAKE	607	18					80	470		39										
MORTLAKE/FENGATE	315						159	156												
FENGATE	583						28	555												
PETERBOROUGH	6619	11	82				2988	3332	6	20	39	50					4	3	14	70
BEAKER	240			14	152										9	62				3
EBA	186					25								138						23
REFRACTORY?	20												20							
	9381	**29**	**82**	**14**	**152**	**25**	**3404**	**5135**	**17**	**59**	**39**	**50**	**20**	**138**	**9**	**62**	**4**	**9**	**30**	**103**

Table 2.2 Occurrence of fabric types/groups by ceramic style (weight (g))

Table 2.1 and 2.2 show fabric sherd number and weight totals according to ceramic style. The large quartz-tempered fabrics (Qu1 and Qu2) are clearly dominant constituting 91.0% of the pottery. These very coarse fabrics characterise Neolithic pottery generally, especially Peterborough Ware, and are exclusive to the Neolithic period at Willington. Coarse Neolithic fabrics containing materials such as flint (Fl1 and Fl2), rock (Ro1, Ro2 and Ro3) and sandstone (Ss1, Ss2 and Ss3) are also present in much smaller quantities. Qu2 seems to have been preferred over Qu1 amongst the material diagnostic to style from the Early to Late Neolithic period, though totals of Qu1 and Qu2 are not dissimilar for material only generally identifiable as Peterborough Ware. The possible significance of fabric Ro3, with its unusual granitic rock inclusions, is discussed elsewhere (see Ann Woodward discussion and Whitbread and Johnson report). The grog-tempered fabrics (Gr1, Gr2 and Gr3) appear, not unsurprisingly, only amongst the Beaker and Early Bronze Age pottery. Similarly the sandy (Sa2 and Sa3) and shelly (Sh1) come from these periods.

Forms

The forms are highly variable, and the best preserved vessels are illustrated and described in detail below (see descriptions of illustrated sherds).

Rims are fairly common (total of 68 rims). These have been classified and coded as follows:

Everted

EV everted

EV RO everted, rounded

EV ROL everted, rolled

EV TA everted, tapered

EV FL everted, flat

Inturned

IN inturned

IN TA inturned, tapered

IN IRB inturned with internal rim bevel

Expanded

EX expanded

EX EV expanded, everted

EX IN expanded, inturned

EX EXT expanded externally

EX EXT EV expanded externally, everted

EX INT EV expanded internally, everted

EX CO expanded, collared

EX TH expanded, thickened

EX IN IM expanded, inturned with internal moulding

Thickened

TH thickened

TH EV thickened, everted

TH ROL thickened, rolled

Other

TA tapered

TA UP CO tapered, upright, collared

FL flat

FL IM flat with internal moulding

RO rounded

RO ROL rounded, rolled

RO ROL EXT rounded, rolled externally

Ware	Sherd No	EV	IN	EX	TH	OTHER
EARLIER NEOLITHIC BOWL	11	5				6
MILDENHALL	12	8			3	1
EBBSFLEET	9	6		1	2	
EBBSFLEET/MORTLAKE	4	1			3	
MORTLAKE	26	2		18	4	2
MORTLAKE/FENGATE	11		3	7		1
FENGATE	12		2	6		4
PETERBOROUGH	4	1		2		1
BEAKER	7	7				
EBA	3		1	2		
REFRACTORY?	2					2
	101	**30**	**6**	**36**	**12**	**17**

Table 3 Occurrence of rim form groups by ceramic style.

Table 3 shows several clear trends amongst the rim forms. Everted forms are more commonly found amongst the earlier Neolithic Bowl, Mildenhall and Ebbsfleet Ware, despite being found on later pottery too. Thickened rim types, although not occurring amongst the earlier Neolithic Bowls, are found in the Mildenhall, Ebbsfleet and Mortlake style groups. Expanded rims, as would be expected, are most commonly associated with Mortlake Ware. Inturned forms are restricted to Mortlake/Fengate, Fengate and Early Bronze Age pottery. Generally these patterns shown by the rim forms are unsurprising and reflect the ceramic styles.

There are 7 bases, of which a sizeable proportion survives. Six of these are a simple flat form. Three are from the Fengate tradition (e.g. illustrated sherd 28), two Beaker (illustrated sherds 30 and 31) and one Early Bronze Age. A further base is flat and pinched out at the circumference and is from another Beaker (illustrated sherd 32).

Decoration

Although some pottery is undecorated, such as the earlier Neolithic plain bowls, decoration is generally profuse and highly varied, involving various techniques, motifs and vessel locations.

The following codes (devised by Patrick Marsden) were used for the recording of technique, motif and location.

Technique

WC whipped cord maggot impressions

TC twisted cord impressions

FT finger tip impressions

FN finger nail impressions

INC incised

IMP impressed

SD stab and drag

CO comb impressions

U uncertain

Motif

First database field – motif element

DL diagonal lines

L lines

Second database field – overall motif

HR horizontal rows

HB herringbone (opposed diagonal lines)

DLI diagonal lines intersecting (cross-hatch)

CL curvilinear (arcading)

FT filled triangles

CH chevrons

EL encircling lines

Location

First database field

RIM rim

BEL RIM below rim

IM internal moulding

CO collar

SH shoulder

AB SH above shoulder

BEL SH below shoulder

NE neck

UB upper body

LB lower body

BA base (on bottom of lower body wall).

Second database field

IN internal

EXT external

LIP rim lip

Ware	Sherd No	CO	FN	FT	IMP	INC	SD	TC	U	WC
EARLIER NEOLITHIC BOWL	2				1					1
MILDENHALL	8		1		5	2				
EBBSFLEET	6			1	1			1		3
EBBSFLEET/MORTLAKE	18				9	7				2
MORTLAKE	41		4		6	7		1	1	22
MORTLAKE/FENGATE	23		1		2	12		1		7
FENGATE	26		3			22	1			
PETERBOROUGH	147		13	3	47	27		2		55
BEAKER	54	4			1			49		
	325	**4**	**22**	**4**	**72**	**77**	**1**	**54**	**1**	**90**

Table 4 Occurrence of decorative technique by ceramic style

Table 4 shows whipped cord maggot impressions (WC), impressed (IMP) and incised (INC) decoration as the most commonly occurring types. The origin of the impressed decoration is not often identifiable although in some cases it is likely to have been made with bone implements or sticks. Whipped cord maggots are the most commonly found decoration on Mortlake Ware but this is absent from Fengate pottery, which is most commonly incised. There is little decoration on the earlier Neolithic pottery, which would be expected, given that plain bowls are common in this period. Twisted cord (TC) and comb impressed (CO) decoration are typically found on Beakers from the excavations.

Ware	Sherd No	CH	CL	DLI	EL	FT	HB	HR
EARLIER NEOLITHIC BOWL	1							1
MILDENHALL	5						1	4
EBBSFLEET	3						2	1
EBBSFLEET/MORTLAKE	15	6						9
MORTLAKE	36		1	3			23	9
MORTLAKE/FENGATE	9			1		5	2	1
FENGATE	19		3	3		1	12	
PETERBOROUGH	27			9			7	11
BEAKER	54				53			1
	169	**6**	**4**	**16**	**53**	**6**	**47**	**37**

Table 5 Occurrence of decorative motif by ceramic style

Herringbone (HB) and horizontal rows (HR) are typical motifs in the Early and Middle Neolithic periods (see Table 5). Herringbone is mostly found on Mortlake and Fengate pottery, but also on Ebbsfleet and Mildenhall Ware. Horizontal rows feature on pottery throughout the Neolithic and Bronze Age. Diagonal lines intersecting (cross-hatch) are only represented in the Mortlake and Fengate sub-styles of Peterborough Ware. Encircling lines are confined to Beaker pottery.

Table 6 shows the location of decoration in the various ceramic styles. It is located in a number of places on Neolithic vessels, especially on the upper body, including the rim area and even the inside of the rim and neck area. Mortlake Ware is especially intensively decorated in these areas. However, lower body sherds are difficult to identify due to the round-bottomed nature of this tradition so caution should be exercised in this assertion. Decoration is shown in the base and lower body areas of both Mortlake and Fengate vessels. Decoration on the collar is also well represented amongst the Fengate pottery. Typically the Beaker pottery is decorated on both the upper and lower body surface.

Ware	Sherd No	AB SH, EXT	BA, EXT	BEL RIM, EXT	BEL SH, EXT	CO, EXT	IM, INT	LB, EXT	NE, EXT	NE, INT	RIM, EXT	RIM, INT	RIM, LIP	SH, EXT	UB, EXT
EARLIER NEOLITHIC BOWL	4			1					1					1	
MILDENHALL	10										1	4	4		
EBBSFLEET	14									2	1	4	5		
EBBSFLEET/MORTLAKE	34				5						4	2	2	5	1
MORTLAKE	85	9		1	9	1	2	2	4	4	5	12	22	5	2
MORTLAKE/FENGATE	29			1		2	1	1			3	1	12		
FENGATE	44		1	5		11	4	2			1	2	9		
PETERBOROUGH	154					1						1	9	7	
BEAKER	79		13					9	6		6			1	
	453	**9**	**14**	**8**	**14**	**15**	**7**	**14**	**11**	**6**	**21**	**26**	**63**	**19**	**3**

Table 6: Location of decoration by ceramic style

DecoTech	Sherd No	-, EXT	AB SH, EXT	BA, EXT	BEL RIM, EXT	BEL SH, EXT	CO, EXT	IM, INT	LB, EXT	NE, EXT	NE, INT	RIM, EXT	RIM, INT	RIM, LIP	SH, EXT	UB, EXT	UB, EXT
CO	4			4													
FN	23	10		1					2			1		7	2		
FT	4	3												1			
IMP	79	45				5			2			4	4	10	9		
INC	100	31			6		13	7				4	5	31	1	2	2
SD	1	1															
TC	70	36		9			1		9	6		6	1	2			6
U	2						1					1					
WC	132	53	9		1	9			3	4	6	5	16	16	9	1	1
	415	**179**	**9**	**14**	**7**	**14**	**15**	**7**	**16**	**10**	**6**	**21**	**26**	**67**	**21**	**3**	**9**

Table 7: Correlation of decorative technique and location on the vessel

DecoTech	Sherd No	CH	CL	DL	DLI	EL	FT	HB	HR
-	6			1					5
CO	4					4			
FN	6							1	5
IMP	18							1	17
INC	58	6	4	6	16		6	18	2
TC	49					49			
WC	36							28	8
	177	**6**	**4**	**7**	**16**	**53**	**6**	**48**	**37**

Table 8: Correlation of decorative technique and decorative motif

Table 7 and 8 show correlation of decorative technique to, respectively, location on the vessel and decorative motif. In the following text these are discussed together. Whipped cord maggot impressions (WC) are especially common in the rim, neck and shoulder part of the vessels, including the inside of the upper body, although they are known on the lower wall. They appear in only two motifs – herringbone (HB) and horizontal rows (HR). Other types of impressed decoration (IMP) are known on the upper body, including the inside of rim and on the internal moulding, and also on the lower body. Incised decoration (INC) is found on the upper body, but is not recorded on the lower body or base of any vessels. It is the only decorative technique occurring in a wide range of motifs. These consist of diagonal lines intersecting (DLI), herringbone (HB), filled triangles (FT), horizontal rows (HR), curvilinear (CL) and chevrons (CH). As is the case with whipped cord maggots, two other types of impressed decoration (IMP and FN) are also restricted to the two motifs of herringbone (HB) and horizontal rows (HR). Twisted cord (TC) and comb (CO) impressions are only found in encircling lines (EL), which are typically associated with Beaker vessels.

Vessel size

A range of vessel sizes is represented amongst the pottery from the assemblage. However, only five rim diameters could be measured, these all being from medium-sized pots. Two Mortlake vessels are of a similar size, with diameters of 240mm (illustrated sherd 13) and 230mm (illustrated sherd 15). Another Mortlake vessel is slightly smaller at 190mm diameter (illustrated sherd 14). A Fengate pot has a diameter of 200mm (illustrated sherd 24) and an Early Bronze Age rim from a Biconical Urn has a 170mm diameter (illustrated sherd 33).

Sooting and residues

A total of 58 sherds displayed carbonised residues of which 6 were submitted for C14 dating (see Scientific Dating).

Group	Sherd No	E. NEO. BOWL	MILDENHALL	EBBSFLEET	EBBSFLEET/ MORTLAKE	MORTLAKE	MORTLAKE/ FENGATE	FENGATE	PETERBOROUGH	BEAKER
0802	59	8	1	2		2			46	
0803	46			1		6			39	
0809	44				2	5	7		30	
2504	137		1			14			122	
2508	167		1			4	2	22	136	2
2509	73				46				27	
2516	83	1							75	7
2518	96		1	1		2	1	10	81	
2541	170	5	1	3			15	5	141	
2550	193	15	7		21			3	147	
4501	86					2	2	11	71	
	1154	29	12	7	69	35	27	51	915	9

Table 9: The occurrence of ceramic styles in selected feature groups

Group	Sherd No	FN	FT	IMP	INC	SD	TC	WC
0802	6			4				2
0803	41			5				32
0809	25	2		6				15
2504	57			1				51
2508	47	4	3	6	18			1
2509	31	1		17	1			
2518	38	2		5	24		3	
2541	35	3	1	4	14	1	2	7
2550	17			2	13			2
4501	23			3	18			
	320	**12**	**4**	**53**	**88**	**1**	**5**	**110**

Table 10: The occurrence of decorative techniques in selected feature groups (Peterborough Ware only)

Group	Sherd No	CH	CL	DL	DLI	FT	HB	HR
0803	20						15	5
0809	6			1				5
2504	40						40	
2508	13		4		6			3
2509	13							13
2518	9				3		6	
2541	8				1	6	1	
2550	12	6		6				
4501	14				3		11	
	135	**6**	**4**	**7**	**13**	**6**	**73**	**26**

Table 11: The occurrence of decorative motifs in selected feature groups (Peterborough Ware only)

Group	Sherd No	FL2	QU1	QU2	RO1
0802	4		4		
0803	22		3	19	
0809	17			13	4
2504	28		4	24	
2508	28		11	17	
2509	14	3		11	
2518	13		5	8	
2541	26		19	7	
2550	9		9		
4501	15		2	13	
	176	**3**	**57**	**112**	**4**

Table 12: The occurrence of fabric groups in selected feature groups (Peterborough Ware only)

Tables 9-12 show the occurrence of ceramic styles (Table 9), decorative techniques (Table 10), decorative motifs (Table 11) and fabric groups (Table 12) in selected feature groups. The groups consisted of occupation spreads, pits and cooking features. Table 9 illustrates the general broad spread of ceramic styles within the selected feature groups, although most of the pottery is still categorised within the Ebbsfleet, Mortlake and Fengate Ware range. Given the nature of the deposits in which much of the pottery in these groups was found, namely spreads, it is unsurprising that residual material, such as earlier Neolithic Bowls and Mildenhall Ware is included. Burnt Mound 1 (Group 2550), however, also produced a diverse date range -15 sherds of earlier Neolithic Bowl as well as Mildenhall Ware, Ebbsfleet/Mortlake pottery and also Fengate Ware. This is also reflected in the broad range of C14 dates from this area (see separate report) suggesting that layers of earlier Neolithic occupation were the site of a later Neolithic/Early Bronze Age burnt mound. Groups 2508 and 2516 also produced Beaker pottery, although this may be intrusive.

In terms of decorative technique for Peterborough Ware (Table 10) the dominance of whipped cord maggot impressions (WC), incised (INC) and impressed (IMP) decoration amongst the group material parallels that from the total site assemblage (see Table 4). Whipped cord is the most common decorative type in Groups 803, 809 and 2504. Meanwhile incised decoration is dominant in Groups 2508, 2518, 2541, 2550 and 4501 and impressed in Group 2509.

The groups contain a fairly limited range of motifs – no one group containing more than three (see Table 11). Herringbone (HB) is the most common, notably in Groups 803, 2504 and 4501. This can be related to ceramic style (Table 9) and technique used (see Table 10). Herringbone motif is found on the whipped cord decorated vessels in Group 803 of Ebbsfleet Ware (illustrated sherd 11) and Mortlake Ware (illustrated sherd 13) and the Group 2504 Ebbsfleet or Mortlake and Mortlake Ware vessels (illustrated sherds 14 and 15). Herringbone of incised lines from Group 4501 is displayed on a probable Mortlake vessel (illustrated sherd 18) and a Fengate pot (illustrated sherd 24). Other decorative motifs are present in smaller quantities in the Groups. Horizontal rows is the next most common motif (Groups 803, 809, 508 and 509), followed by diagonal lines intersecting (DLI-Groups 2508, 2518, 2541 and 4501).

The fabrics from the selected feature groups (Table 12) reflect the Peterborough Ware from Willington as a whole. They are dominated by the large quartz-tempered fabrics Qu1 and Qu2, though smaller fabric groups are also present.

Catalogue of Illustrated Sherds

Fig. 1

1	Rim with rounded lip. Fabric Qu2. Earlier Neolithic Bowl. Context 1973, group 2541. (FSN63).
2	Rim and neck of bowl with rounded rim. Decoration : diagonal lines of uncertain origin (possibly incised?) below rim and on neck. Very abraded outer surface. Fabric Qu3. Earlier Neolithic Bowl. Context 1150, group 2516. (FSN76).

3	Part of simple applied solid, probably circular, lug. Fabric Qu2. Earlier Neolithic Bowl. Small Find no. 270. (FSN12).
4	Rim, thickened and slightly rolled. Decoration : opposed diagonal impressed lines (outermost row made by fingernail) on the rim top forming herringbone design ; horizontal row of impressions on the internal surface of the rim. Fabric Qu2. Mildenhall Ware. Context 1001, group 2508. (FSN34).
5	Rim, rounded and rolled externally. Decoration : incised lines on the rim top and horizontal row of deep impressions made with a bone implement or stick on the inside of the rim. Fabric Qu2. Mildenhall Ware. Context 297, group 802. (FSN22).
6	Rim, everted and rolled. Fabric Qu2. Mildenhall Ware. Context 1257, group 2521. (FSN42).
7	Rim, thickened and everted. Fabric Qu2. Mildenhall Ware. Context 1978, group 2550. (FSN64).
8	Upper portion of round-shouldered bowl with slightly everted rounded rim. Fabric Qu2. Peterborough Ware, Ebbsfleet sub-style. Context 36, ungrouped. (FSN5).
9	Neck and shoulder of rounded-shouldered bowl. One perforation and another deep impression or incomplete perforation on the neck. These were probably made before firing. Fabric Qu1. Peterborough Ware, Ebbsfleet sub-style. Context 221, group 2541. (FSN15).
10	Rim and neck of vessel with slightly thickened everted rim. Angle uncertain. Decoration : opposed diagonal whipped cord maggot impressions on the internal surface of the rim and neck probably forming herringbone design ; some whipped cord maggot impressions also visible on abraded top of the rim. Fabric Qu1. Peterborough Ware, Ebbsfleet sub-style. Small find no. 462, group 2550. (FSN74).
11	Rim and part neck of vessel with expanded and slightly thickened rim. Decoration : opposed diagonal whipped cord maggot impressions on the internal surface of the rim and neck forming herringbone design ; diagonal whipped cord maggot impressions in horizontal rows on the rim top and external surface. Fabric Qu2. Peterborough Ware, Ebbsfleet sub-style. Context 521, group 803. (FSN31).
12	Rim, everted and flat. Decoration : incised diagonal lines on inside of rim. Fabric Qu1. Peterborough Ware, Ebbsfleet or Fengate sub-style. Context 2063, group 2550. (FSN68).

Fig. 2

13	Upper portion of bowl with very sharp shoulder, deep neck and expanded everted rim. Decoration : opposed diagonal whipped cord maggot impressions on the flat rim surface, immediately below the rim, and above the shoulder ; vertical maggot impressions arranged in tightly spaced rows below the shoulder ; further opposed diagonal maggot impressions inside the rim. Fabric Qu2. Peterborough Ware, Mortlake sub-style. Context 458, group 803. (FSN28).
14	Upper portion of bowl with sharp shoulder, long deep neck and expanded everted rim. Decoration : opposed diagonal whipped cord maggot impressions on the flat rim surface, inside the rim and neck area and immediately above and below the shoulder. Fabric Qu2. Peterborough Ware, Ebbsfleet or Mortlake sub-style. Context 1416, group 2504. (FSN48).
15	Upper portion of bowl with sharp shoulder, deep neck and expanded everted rim. Decoration : opposed diagonal whipped cord maggot impressions on the flat rim surface, inside the rim and neck area as well as on, immediately above and below the shoulder. Fabric Qu2. Peterborough Ware, Mortlake sub-style. Context 1416, group 2504. (FSN49).

Fig. 3

16	Rim and shoulder fragments from a bowl with sharp shoulder and flattened, slightly everted, thickened rim. Decoration : horizontal rows of oval impressions below the rim lip, at the shoulder and below. Fabric Qu2. Peterborough Ware, Mortlake sub-style. Context 1002, group 2509. (FSN36).
17	Rim, thickened. Decoration : incised diagonal lines on rim lip and intersecting incised diagonal lines on the outside of the rim and below. Fabric Qu1. Peterborough Ware, Ebbsfleet or Mortlake sub-style. Context 1497, Small find no. 404, group 2508. (FSN52).
18	Upper portion of small round-shouldered bowl with flat rim and internal moulding. Decoration : opposed

	diagonal lines on the rim top ; incised cross-hatching on the internal moulding and incised diagonal lines on the upper body wall in abraded area. Fabric Qu2. Peterborough Ware, probably Mortlake sub-style. Context 212, group 4501. (FSN14).
19	Rim with internal and external expansion and an internal moulding. Decoration : incised filled triangle design on the rim : incised diagonal lines on the internal moulding. Fabric Qu1. Peterborough Ware, Mortlake or Fengate sub-style. Context 1934, group 2541. (FSN61).
20	Rim, strongly expanded forming distinct collar. Decoration : incised diagonal lines in ? motif on collar and rim lip?. Fabric Qu1. Peterborough Ware, Mortlake or Fengate sub-style. Context 1001, group 2508. (FSN33).
21	Rim, strongly expanded, inturned. Decoration : incised diagonal lines in a ?motif on the rim lip and diagonal lines of probable whipped cord maggot impressions in a horizontal row below the rim. Fabric Qu2. Peterborough Ware, Mortlake or Fengate sub-style. Context 1463, Small find no.492, group 2508. (FSN53).
22	Portion of lower body. Decoration : whipped cord maggot impressions. Fabric Qu2. Peterborough Ware, Mortlake or Fengate sub-style. Context 390, group 809. (FSN24).

Fig. 4

23	Rim and lower wall fragments from a necked vessel with strongly expanded triangular-sectioned collared rim. Decoration : incised irregular multiple curvilinear decoration on the collar, irregularly placed fingernail impressions on the lower wall. Fabric Qu2. Peterborough Ware, Mortlake or Fengate sub-style. Context 1000, group 2508. (FSN32). Lipid Analysis WiQ 14.
24	Collar fragments with pointed almost upright rim. Decoration : on the collar, opposed diagonal incised lines forming a horizontal herringbone design. Fabric Qu2. Peterborough Ware, Fengate sub-style. Context 114, group 4501. (FSN10).
25	Rim and upper wall fragments of conical vessel with expanded, inturned rim with two internal mouldings. Decoration : opposing incised diagonal lines forming a herringbone motif on the internal mouldings and inside of the rim ; diagonal lines on the rim lip ; more lightly executed intersecting incised diagonal lines below the rim on the outer vessel surface. Fabric Qu2. Peterborough Ware, Mortlake or Fengate sub-style. Context 80, group 2518. (FSN6).
26	Rim, inturned and tapered. Decoration : ‘stab and drag’ diagonal lines on external surface. Fabric Qu1. Peterborough Ware, Fengate sub-style. Context 2004, group 2541. (FSN66).
27	Rim, strongly expanded and inturned. Decoration : incised filled triangle design on the rim lip and ?incised horizontal lines below the rim. Fabric Qu2. Peterborough Ware, probably Fengate sub-style. Context 1870, group 2541. (FSN60).
28	Base, flat. Fabric Qu2. Peterborough Ware, probably Fengate sub-style. Context 1055, group 2508. (FSN39).

Fig. 5

29	Rim and neck fragments, rim everted and rounded form. Decoration : encircling lines of twisted cord impressions on outside of rim and neck. Fabric Gr2. Beaker. Context 151, group 2531. (FSN75).
30	Rim and neck fragments, rim everted and rounded form. Decoration : encircling lines of twisted cord impressions on outside of rim and neck. Fabric Gr2. Beaker. Context 151, group 2531. (FSN75).
31	Base, flat. Decoration : encircling line of comb impressions on outside of the base. Fabric Sh1. Beaker. Context 3090, group 2516. (FSN77).
32	Base and part of lower body, flat base pinched out at the circumference. Fabric Sa3. Beaker. Small find no. 584, group 3100.(FSN81)
33	Rim, inturned with internal rim bevel. Fabric Sa2. Early Bronze Age, Biconical Urn. Small find no.581, group 3100. (FSN78).

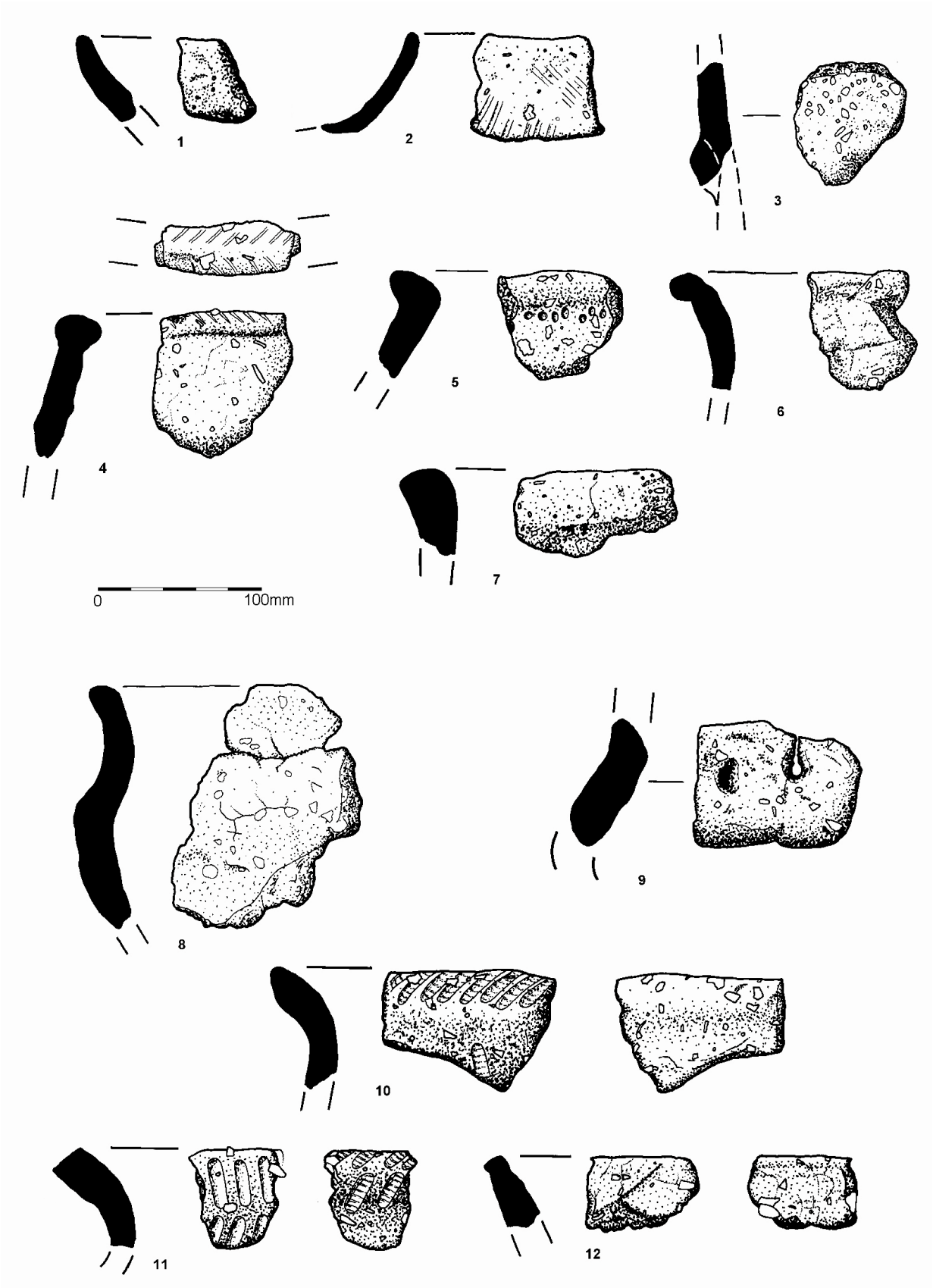

Fig. 1: Earlier Neolithic Bowl (1-3), Mildenhall Ware (4-7), Peterborough Ware, Ebbsfleet (8-11), Ebbsfleet or Fengate sub-style (12)

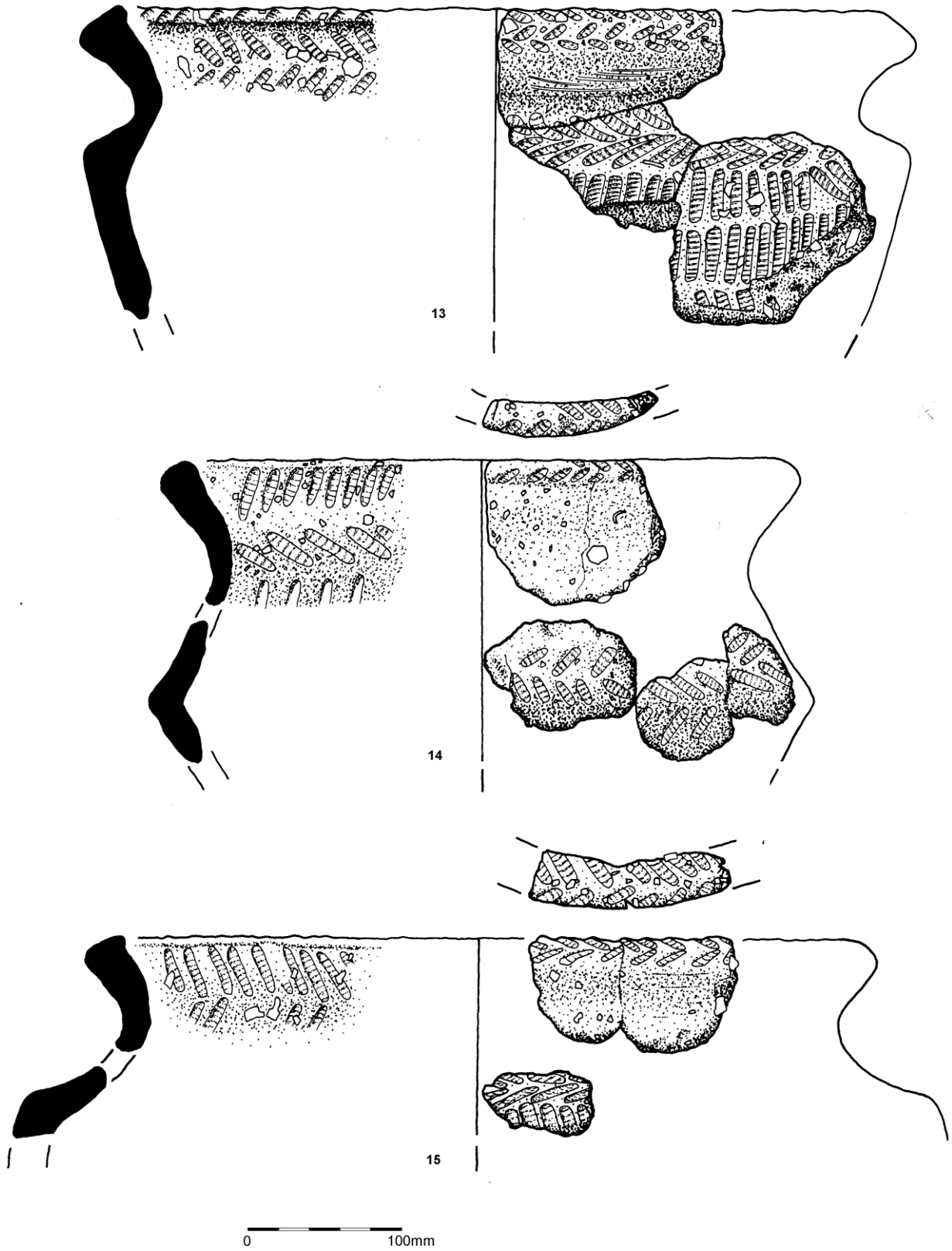

Fig. 2: Peterborough Ware, Mortlake sub-style (13 & 15) and Ebbsfleet or Mortlake sub-style (14)

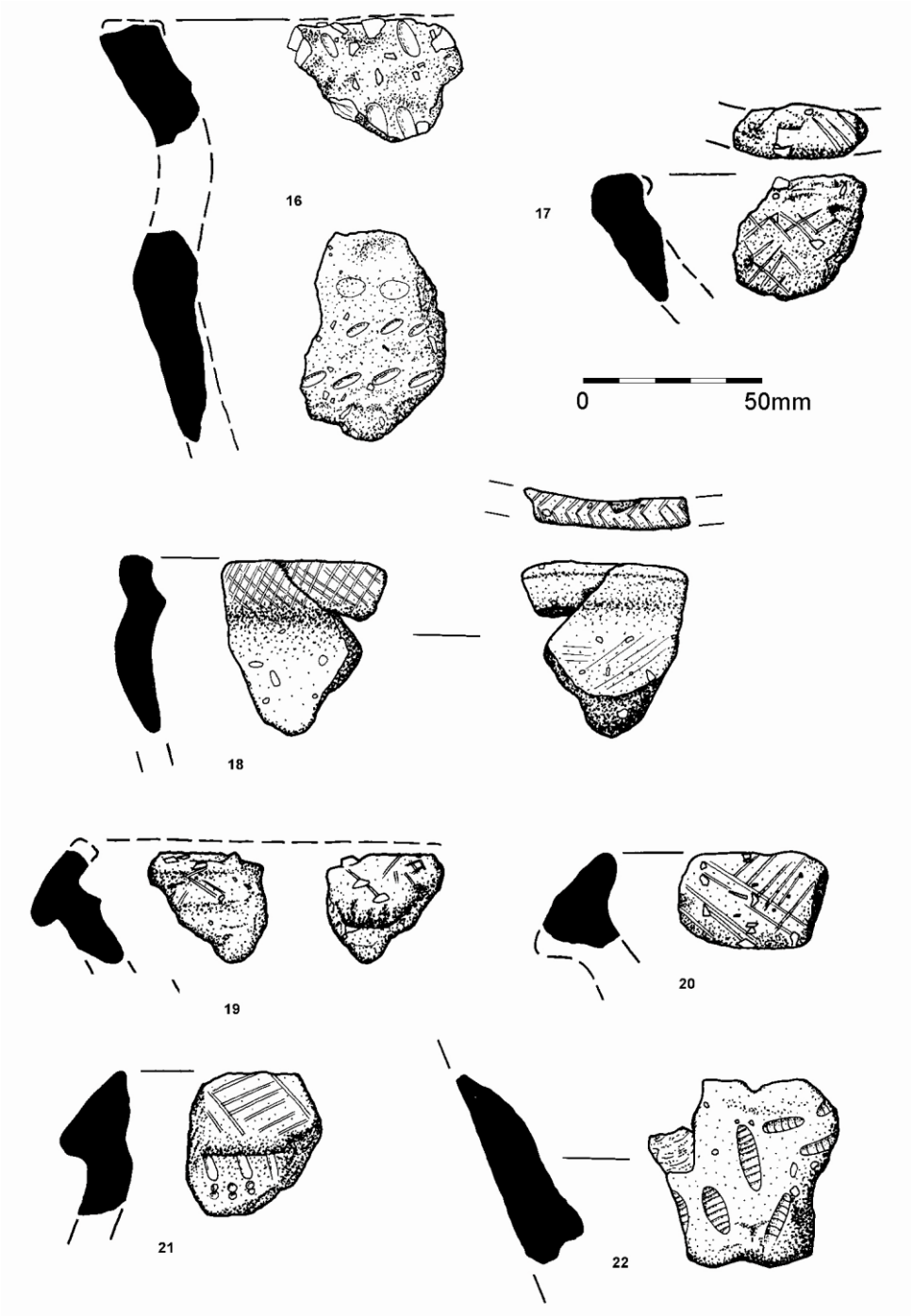

Fig. 3: Peterborough Ware, Mortlake sub-style (16), Ebbsfleet or Mortlake sub-style (17), probably Mortlake sub-style (18) and Mortlake or Fengate sub-style (19-22).

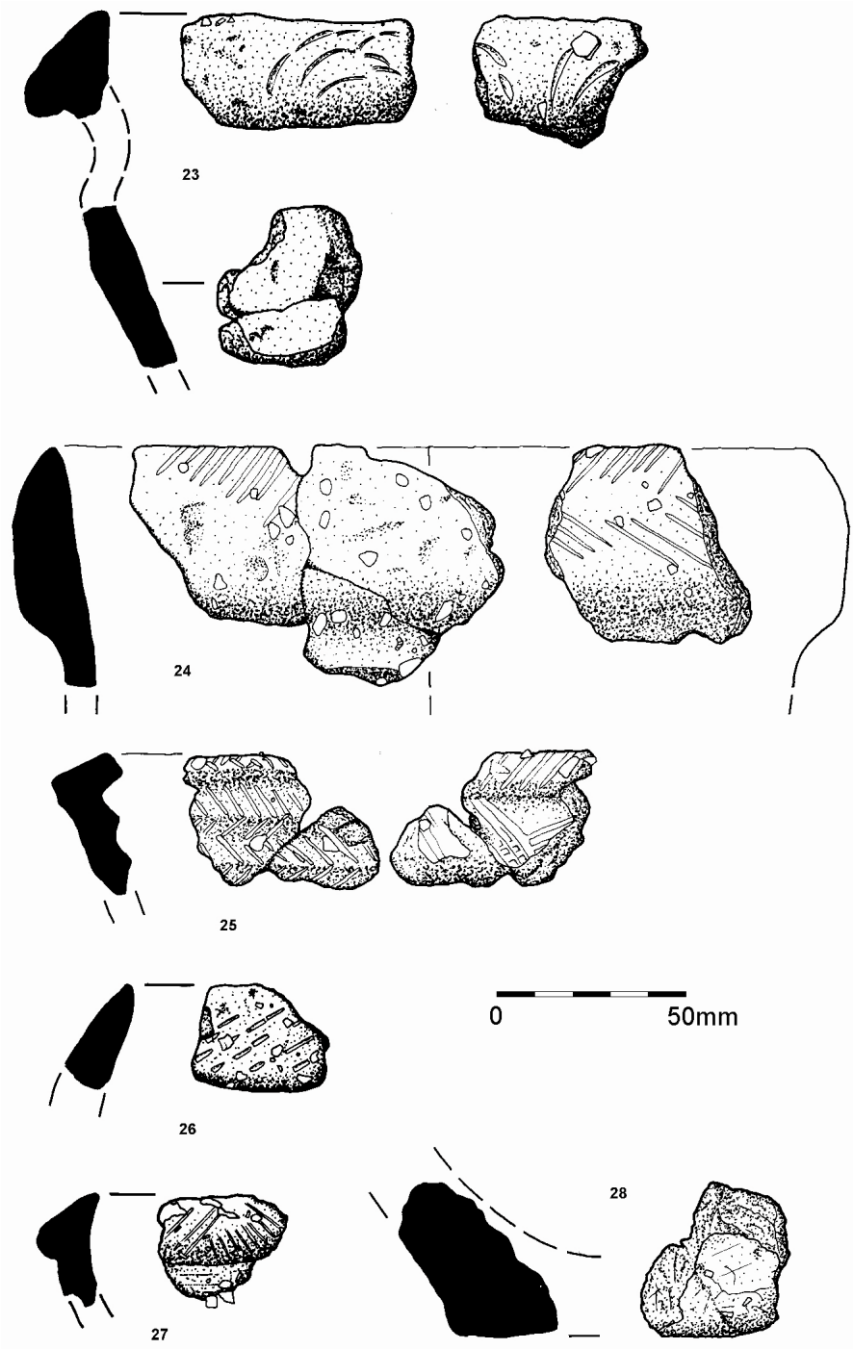

Fig. 4: Peterborough Ware Mortlake or Fengate sub-style (23 & 25), and Fengate sub-style (24, 26 and probably 27-28)

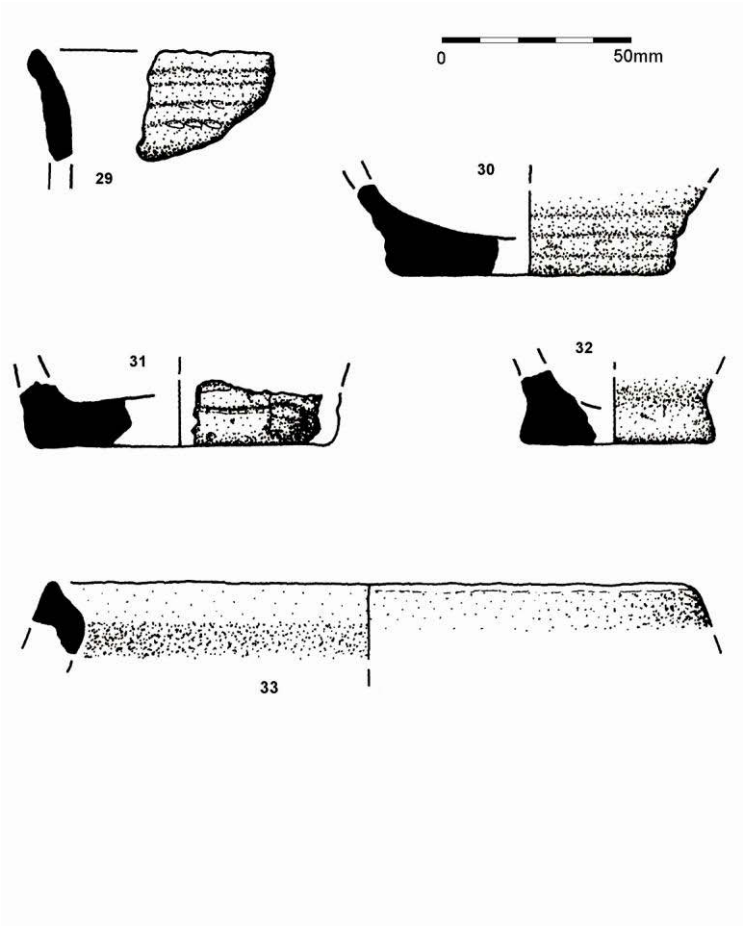

Fig. 5: Beaker and Early Bronze Age

Spatial aspects

Ann Woodward

Viewing pottery distribution across the site as a whole, the major selected associations appear to occur in two broad locations: a close-knit series in the south-western sector (context groups 802, 803, 809) and a wider spread in the northern sector, both west (2516, 2518) and east (2504, 2508, 2509, 2541) of Burnt Mound I (context group 2550). Finally group 501 occupies a more isolated location further to the south-east.

From Tables 9 to 11 it can be discerned that there is a clear trend in the distribution of ceramic styles. Mortlake Ware, together with whipped cord decoration which is most typical of Ebbsfleet Ware, tend to be most common in the south-western context groups, while most of the diagnostic Fengate Ware (and Mortlake/Fengate sherds), plus concentrations of incised decoration, are concentrated in the northern site zone. Context group 4501, in the south-east sector, also contains mainly Fengate Ware and sherds with incised decoration. However the two main fabric groups QU1 and QU2 (Table 12) do not seem to display any clear spatial patterning.

If one accepts that Fengate Ware was later than Ebbsfleet and Mortlake Ware then these results may indicate that the earliest Middle Neolithic occupation was located in the south-western sector, and that activities later spread to the north and south-east. If, as the radiocarbon dating is indicating at present, Mortlake Ware started later than the Fengate style, or if these two styles were roughly contemporary, then the distribution may suggest that Mortlake and Fengate vessels were being used for different purposes in different areas of the site, or by different sets of

people occupying the two different zones of the site. Site levels suggest that the south-western sector may have been occupied earlier than the northern island, but the shift could have been very rapid, due to a single inundation.

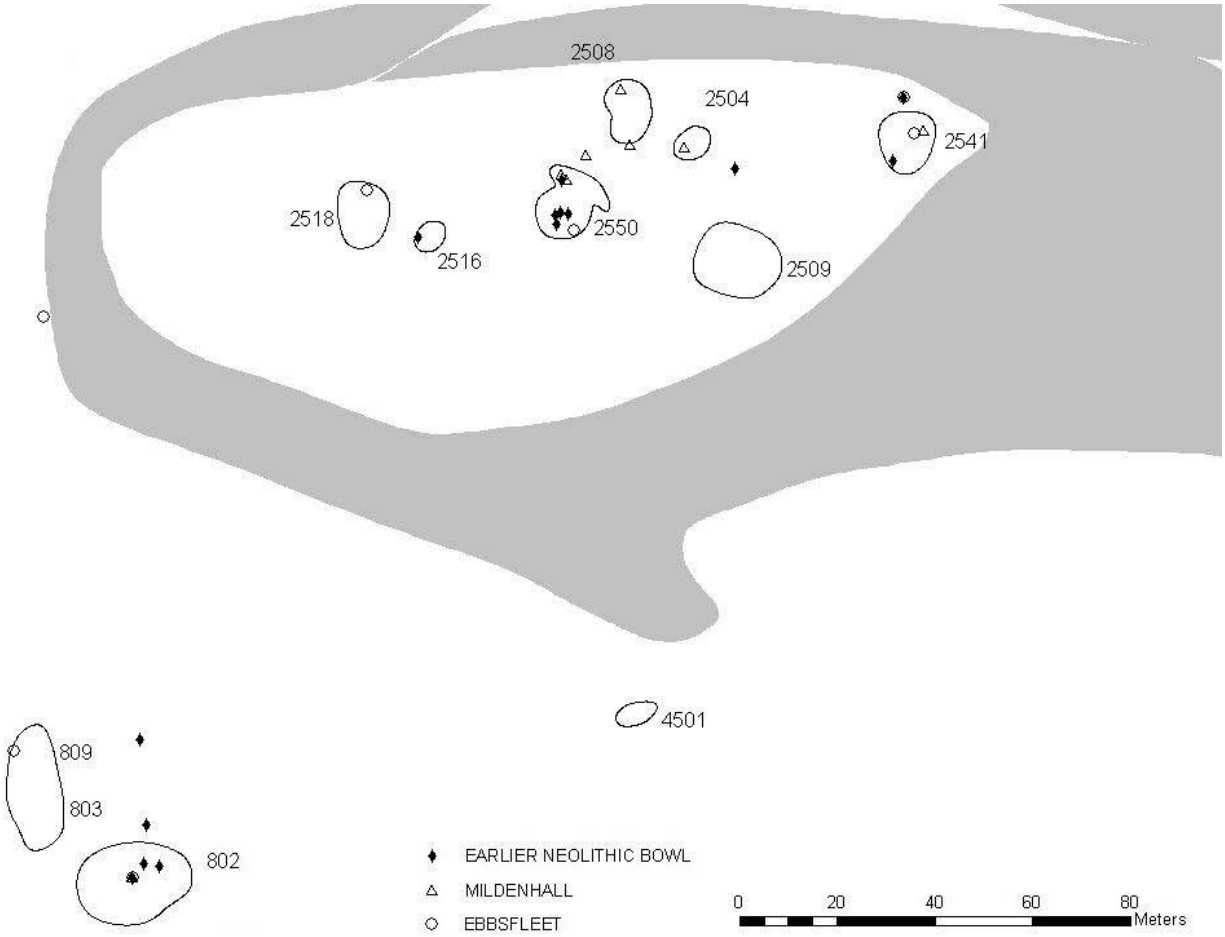

Figure 6: Distribution of Earlier Neolithic Bowl, Mildenhall Ware and Ebbsfleet Ware pottery

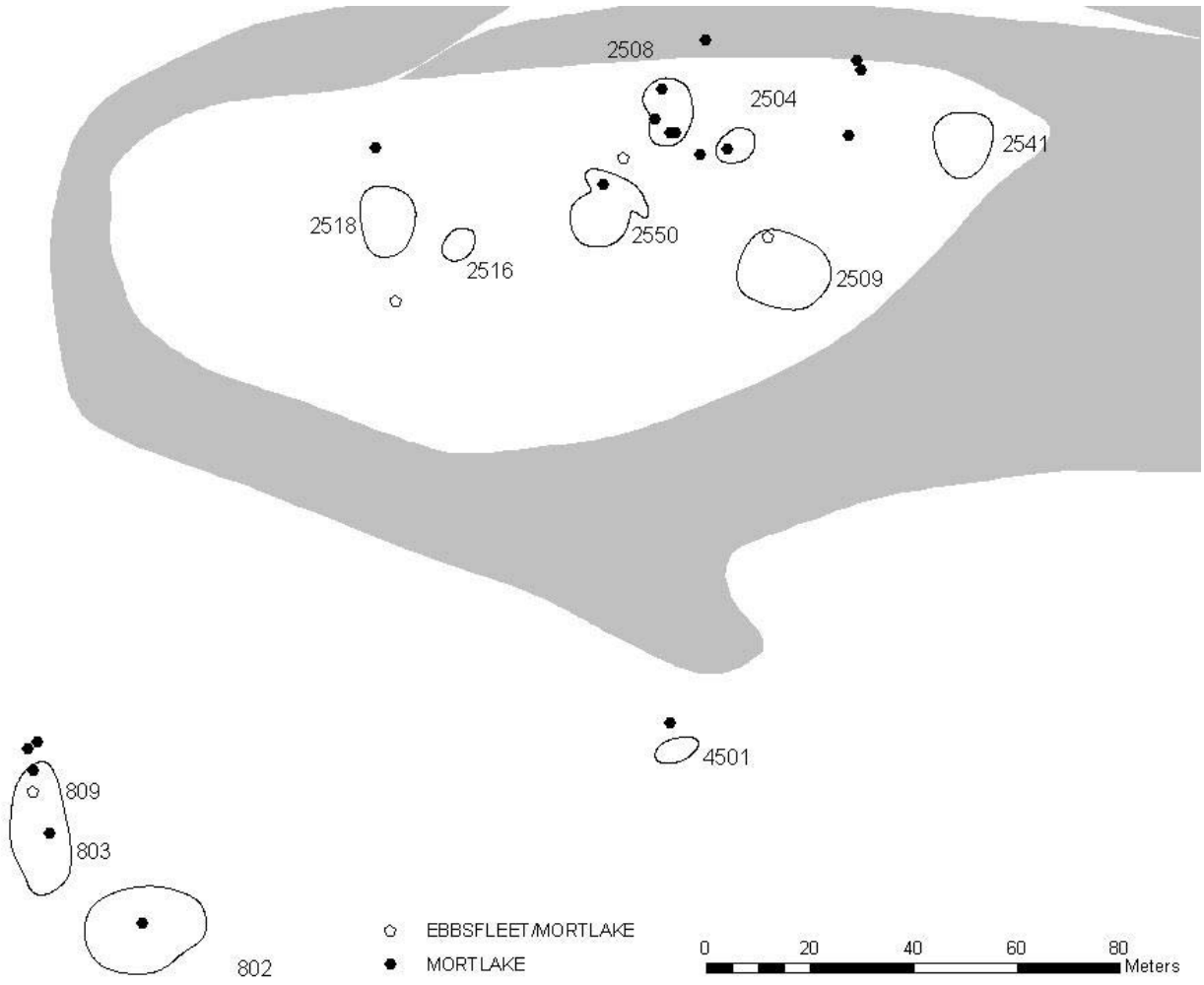

Figure 7: Ebbsfleet/Mortlake and Ebbsfleet Ware

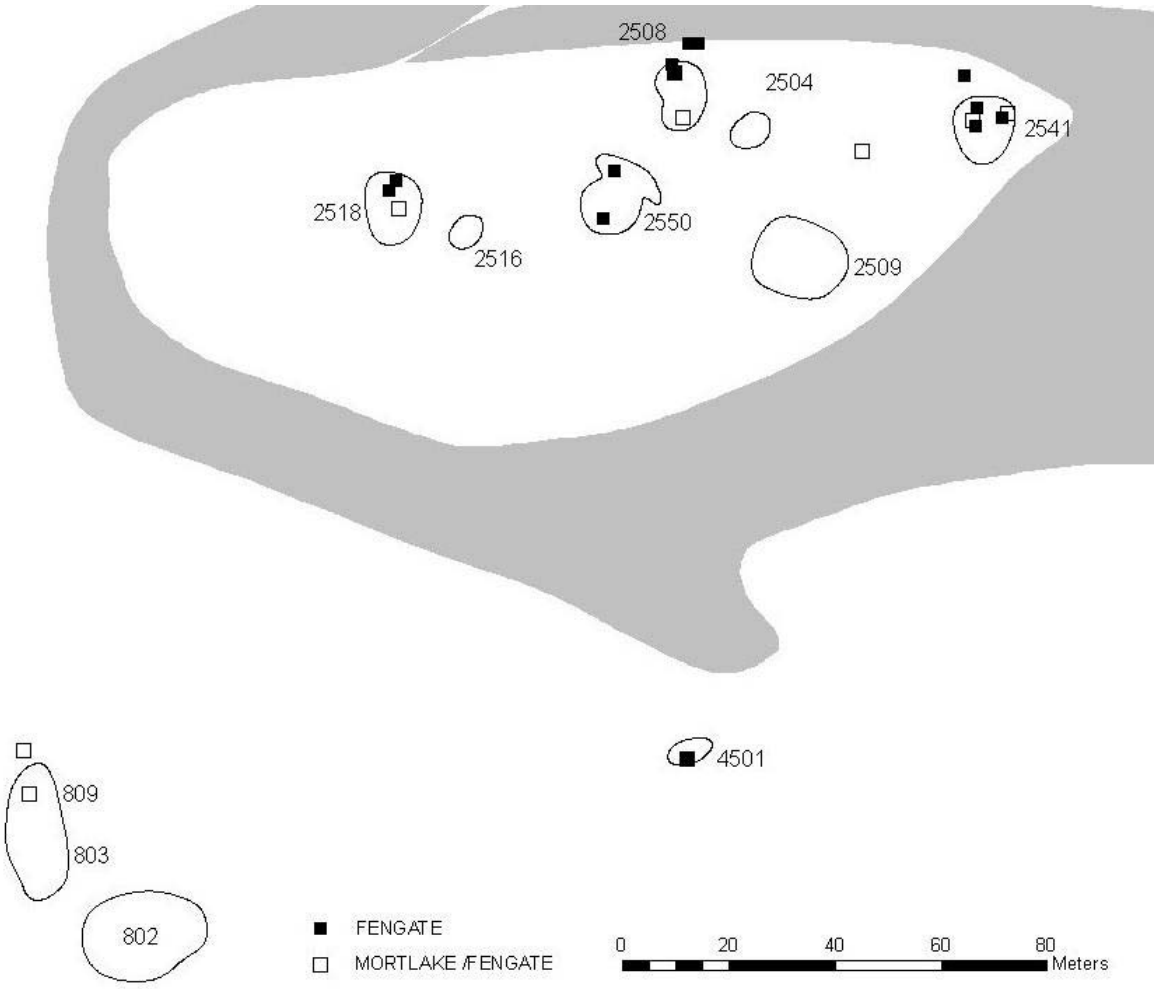

Figure 8: Mortlake/Fengate and Fengate Ware

Key Ceramic Groups

Group 802: spreads, stake-holes and tree-throw

The seven feature sherds (none illustrated) included three rims from plain Neolithic bowl, one rim of Mildenhall Ware, two rims of Ebbsfleet style and one Mortlake rim. Context 0005 contained plain bowl, Ebbsfleet and Mortlake sherds, while context 0297 included sherds of Mildenhall and Ebbsfleet Wares. This might suggest that some residual pottery of earlier Neolithic date was present, while the presence of two Ebbsfleet vessels might indicate a relatively early date for this context group.

Group 803: spreads, stake-holes and burnt pit.

The feature sherds were all from Peterborough Ware vessels, including one rim of Ebbsfleet style (illustrated sherd 11 FSN31) and one belonging to the Mortlake style (illustrated sherd 13 FSN28). The Ebbsfleet and Mortlake rims were from different contexts: 0521 and 0458 respectively.

Group 809: three throw with artefact-rich spread.

A published rim sherd is of Mortlake or Fengate style (illustrated sherd 22 FSN24 from 0390). The other feature sherds, all from different contexts included examples of Ebbsfleet or Mortlake Ware and other probably Mortlake sherds.

Group 2504: spread and pit.

The three feature sherds all came from context 1416. The upper portions of two Mortlake vessels are published (illustrated sherds 14 & 15 FSN48 and 49) while the third piece was a possibly Mildenhall rim.

Group 2508: spread with burning and pits – cooking pit?

Sherds of Mortlake and Mildenhall Wares (the latter illustrated sherd 4 FSN34) came from context 1001, while both Mortlake and Mortlake/Fengate sherds (illustrated sherd 21 FSN53) were found in 1463. Other diagnostic pieces all came from different contexts and included variously a Fengate rim (illustrated sherd 23 FSN32), a Fengate base fragment (illustrated sherd 28 FSN39) and a Mortlake rim (illustrated sherd 17 FSN52).

Group 2516: oven with ?tree-throws.

A rim from a plain Neolithic bowl (illustrated sherd 2 FSN76) came from context 1150, while 3090 contained four Beaker sherds (base angle published: illustrated sherd 31 FSN77) along with eight pieces of undiagnostic Peterborough ware.

Group 2518: spread sealing occupation

Context 1778 contained diagnostic sherds of Mortlake, Fengate and Mildenhall or possibly Ebbsfleet Wares, and context 80 produced an Ebbsfleet rim and a sherd of Fengate Ware (illustrated sherd 25 FSN6).

Group 2541: possible post-hole structure interleaved with tree-throws.

Context 1973 contained two plain bowl rimsherds (one published: illustrated sherd 1 FSN63), and two different rims from Ebbsfleet Ware vessels were found in context 225. Other individual contexts produced a Mildenhall Ware rim, an Ebbsfleet rim (illustrated sherd 9 FSN15), two Mortlake/Fengate rims (one is illustrated sherd 19 FSN61), two Fengate rims (illustrated sherds 26 & 27 FSN60, FSN66), a Fengate base and other Peterborough Ware items.

Group 4501: pit and curving gully

Fengate (illustrated sherd 24 FSN10) and Mortlake/ Fengate rims were both found in context 114, and a possibly Mortlake rim in context 212 (illustrated sherd 18 FSN14).

Fragmentation and abrasion

Ann Woodward

In order to assess the integrity of the various assemblages from different types of features, clusters of features and spreads, the nature of fragmentation and degree of abrasion of sherds was studied within a series of key context groups. These mainly comprised those that had produced the largest numbers of sherds and the most well preserved diagnostic pieces which could be identified to substyle. The study was undertaken at a single time, with pottery from all the groups laid out in one room. This ensured a consistent level of record, and allowed visual comparisons between key sherds belonging to different context groups. The size of sherds was recorded as small (S: up to 15mm long), medium (M: 16 to 25mm) and large (L: over 25mm long). Three categories of abrasion were also employed as follows: F fresh surfaces and breaks, A abraded surfaces and breaks, VA one or both surfaces missing. The results are summarised in a series of tables.

Full tabulations are available in the archive, while here the results are summarised in Table 13.

The results of these studies demonstrate that the various pottery assemblages recovered from the various context groups were remarkably similar in their content. In all groups except 0803 the largest size group of sherds was the large category (occurring at 34% to 51%) while medium and small sized sherds occurred in roughly similar proportions (20% to 34% and 17% to 35% respectively). In other words the spread of sherd sizes was fairly evenly spread, but with a slight predominance of large sherds. However the overall occurrence of medium and small sherds typifies all the group assemblages which gave a general impression of having been very broken up in antiquity.

Consideration of the abrasion categories also showed that there was a fairly consistent pattern of results across the selected context groups. There were very few sherds in fresh condition (usually below 10%), and large numbers were abraded. In all cases, the ‘very abraded’ category was represented most (51% to 69%). There was however one exception to this general pattern. This was group 2516 which contained a higher proportion of fresh sherds (30%), and a lower occurrence of very abraded fragments (41%).

It is therefore possible to suggest that all the larger ceramic assemblages had been deposited in similar ways. They appear to have been the result of in situ activity, but sherds probably became broken up during occupation. If such occupation lasted a long time, or was seasonal or episodic in nature at each location, then the sherds may have been deposited over an unknown length of time.

However, in some groups one or two contexts contained more large and/or fresh sherds. Such contexts may have been less disturbed and possess greater chronological integrity. They include contexts 0005 in group 802, 0458 in

group 803, 0390 and 0391 in group 809, 1416 in group 2504, 3070 in group 2516, 0080 in group 2518 and 1870 and 1973 in group 2541.

Group	S	M	L	F	A	VA	Total Sherds
0802	16	18	25	4	25	30	59
	27%	31%	42%	7%	42%	51%	
0803	16	13	15	1	16	27	44
	36%	30%	34%	2%	36%	61%	
0809	6	11	18	-	17	18	35
	17%	31%	51%	-	495	51%	
2504	62	49	68	12	43	124	179
	35%	27%	38%	7%	24%	69%	
2508	48	49	58	-	37	118	155
	31%	32%	37%	-	24%	76%	
2509	15	22	30	-	23	44	67
	22%	33%	45%	-	34%	66%	
2516	24	27	28	24	23	32	79
	30%	34%	36%	30%	29%	41%	
2518	33	20	45	6	26	66	98
	34%	20%	46%	6%	27%	67%	
2541	48	48	71	5	54	108	167
	29%	29%	42%	3%	32%	65%	
4501	16	24	43	3	26	54	83
	19%	29%	52%	4%	31%	65%	

Table 13: the occurrence of fragmentation and abrasion categories in ten selected context groups

The pottery assemblage from Burnt Mound I (group 2550)

The occurrence of size ranges and abrasion categories for the different styles of pottery found in the various stratigraphic units of Burnt Mound I is shown in Table 14.

Unit	Early Neo.	Diagnostic Sherds	S	M	L	F	A	VA	Total sherds
Alluvium			3	-	1	-	-	4	4
Upper mound	?1		9	12	4	-	6	19	25
Oven, trough etc.	?1		3	4	-	-	2	5	7
Lower mound			30	22	14	9	43	14	66
			46%	33%	21%	14%	65%	21%	100%
Features	2	1 Early Neo.	6	8	2	-	7	9	16
Old ground surface	8 + ?5	2 Mildenhall 5 Peterborough	36	23	9	7	48	13	68
			53%	34%	13%	10%	71%	19%	100%

Totals			87	69	30	16	106	64	186

Table 14: the occurrence of fragmentation and abrasion categories in Burnt Mound I

Dating of the Burnt Mound I sequence on ceramic grounds is very difficult, as no diagnostic sherds were present above the first two layers (old ground surface and features cutting it). The presence of significant numbers of sherds belonging to the Peterborough Ware tradition (determined on fabric; also Ebbsfleet or Mortlake sherd illustrated sherd 12 FSN68), along with several pieces belonging to earlier Neolithic traditions (bowl and Mildenhall Ware, the latter illustrated sherd 7 FSN64) suggests that the mound was established after a phase of Middle Neolithic activity in this specific location. Within these layers the occurrence of large and fresh sherds was relatively high (see Table 14).

There were also large and fresh sherds present in the lower mound. However the upper stratigraphic groupings: the oven and trough, and the burnt spread contained smaller groups of sherds and these were often very abraded. On ceramic grounds it could be argued that the pottery in the burnt layer, along with its associated features, was residual. Certainly the rim of plain bowl from the pit (FSN59) would have been. The pottery in the lower spread is probably contemporary with the formation of the layer although it equally may have derived from the pottery-rich old ground surface upon which it was built. Radiocarbon dating suggests in fact that the spread on which the burnt mound was probably contemporary with the Middle Neolithic pottery that was contained within it (OxA-15046, 3500-3340 cal BC and SUERC-7605, 3630-3360 cal BC), and the Burnt Mound proper is dated to at least one thousand years later (*start burnt mound: 2260-2140 cal BC;* 68% probability; see Scientific Dating report).

Fabrics

Ann Woodward and Adam Tinsley

The fabrics of the Peterborough Ware assemblage from Willington Quarry are mainly characterised by coarse angular inclusions of quartz and quartzite. Thus fabric types Qu1 and Qu2 comprise 91% of the sherd total. Other less common inclusions are flint, hard rock and sandstone, with some of the rock having been identified as igneous. In contrast, the fabrics of the smaller numbers of sherds of Beaker and Bronze Age date contain grog, and a little sand and shell. Petrological analysis confirmed these macroscopic identifications: quartz, quartzite, and igneous rock of at least two kinds (horneblende diorite or gabbro and granodiorite), all of which were sometimes accompanied by sandstone fragments. The same sandstone was found in association with grog in one of the Beaker samples. Chert was also indentified in one of the Peterborough Ware samples, and the Bronze Age urn sample contained a denser distribution of smaller quartz inclusions, typical of the pottery of this period. The quartz, quartzite, sandstone and chert could all have been obtained from gravel beds local to the site. Some of the igneous fragments may also have been obtained from the local gravels, but probably originated from outcrops in Charnwood Forest (Groups 6 and 7). However, the igneous inclusions in Group 8 could be horneblende diorite or gabbro, which could have come originally from a small outcrop under Swithland Reservoir.

In the immediate area, an assemblage of slightly earlier Mildenhall Ware from Hill Farm, Willington also contained large quantities of quartz and quartzite inclusions, although calcite was also present. At Lockington, Derbyshire one Neolithic sherd contained quartz, and so did Peterborough Ware sherds from Whitemoor Haye, Staffordshire, slightly further up the Trent valley. Beaker sherds from Lockington and Whitemoor Haye contained grog, similar to the Beaker fabric identified at Willington Quarry (for references see Johnson and Whitbread, this report). Macroscopic examination of material from other Peterborough Ware sites within Derbyshire and the Peak District suggests that the use of quartz and quartzite may reflect a wider regional preference for such inclusions. For example, a uniquely decorated Ebbsfleet vessel from Melbourne (Courtney 1976) and sherds from at least two vessels, one an Ebbsfleet bowl, from Upper House Farm (Hart 1985) are reportedly in a quartz fabric, as are sherds from at least two Mortlake vessels from Kenslow (Garton 1983). Sherds recovered from Fox Hole Cave are also reportedly in a composite flint and quartz fabric (Jackson 1949 and Bramwell 1971). These assemblages are relatively small but cumulative with the Willington material produce a total that represents 70% of the minimum number of vessels from Derbyshire, for which data related to fabric type was available. For neighbouring East Midlands counties the percentage is rather lower e.g. *c*.45.5% for Leicestershire, and further south shell inclusions are more common (e.g. 45.5% shell for Cambridgeshire). In the West Midlands, the few finds of Peterborough Ware do tend to include quartz fragments, as at Wasperton (Hughes and Crawford 1999, 27), and this trend is very noticeable in Wales where quartz inclusions predominate, especially in vessels belonging to the Mortlake style of Peterborough Ware (Gibson 1995, fig. 3.8).

Further south, Peterborough Ware assemblages are dominated by fabrics containing crushed flint. Flint accounts for 98% of the inclusions relating to such finds from the Middle and Lower Thames, although 21% of vessels from Yarnton, Oxon (Upper Thames) contained quartz inclusions. In Wessex, flint again was most commonly employed, although there is slightly more shell than flint in the Fengate Ware vessels examined by Cleal (1995,

fig. 16.2). Angular quartz and sandstone inclusions were also sometimes present, reaching 6% in the Mortlake style vessels studied by Cleal.

It has been argued that the deliberate selection of quartz as inclusions for Peterborough Ware pottery was related to its symbolic importance. Quartz boulders were often incorporated into early prehistoric monuments, and the bright colour and luminescence of the quartz may have imbued this material with magical and powerful qualities (e.g. Gibson 1995, 29). The contrast between the white inclusions and the dark matrix of the pottery fabrics was undoubtedly intentional. Flint inclusions also stand out strongly from background fabrics, although the magical properties of flint are less obvious.

The major use of quartz and quartzite in the Peterborough Ware fabrics at Willington Quarry may imply that the assemblage belongs to a widespread potting tradition that extends from the Welsh coast to its most easterly expression in Derbyshire and Leicestershire. It is tempting to suggest that such a tradition was maintained within a series of social networks, perhaps even familial ties. The deep roots of such a tradition may be evidenced by the high occurrence of quartz inclusions in the large assemblage of Mildenhall Ware from Hill Farm, Willington, belonging to a slightly earlier stage within the Neolithic period.

The identification of igneous inclusions within some of the Middle Neolithic pottery from Willington Quarry is of particular importance. Inclusions from the sources of granodiorite in Charnwood Forest are now well known within assemblages of Iron Age and Late Bronze Age pottery, and have now been identified in some of the Early to Middle Bronze Age urns from Eye Kettleby, Leics. (Knight, Marsden and Carney 2003, 117-9). However this is the first instance of granodiorite inclusions having been found in pottery of Neolithic date. But it is not the first recorded occurrence of igneous inclusions in Peterborough Ware pottery. At The Breiddin, granitic inclusions were derived from a non-local North Wales source (Gibson 1995, 29), while at Meole Brace, Shropshire at least two of the Mortlake style vessels contained deliberately added granite and rhyolite as well as quartz. The granite and rhyolite had probably been obtained from erratics in the local Boulder Clays (Williams in Hughes and Woodward 1995, 14-15).

Form and decoration: earlier Neolithic, Beaker and Early Bronze Age

Ann Woodward

Early Neolithic bowl

Two diagnostic rims come from an open bowl and a closed, probably carinated vessel, while a plain wall sherd carries part of a plain raised lug (illustrated sherds 1-3). Simple rims from plain open or carinated bowls with out-flaring rims are typical of the Early Neolithic bowl tradition. Similar pottery has been found previously at Willington (Manby 1979, 146 and fig.58, 1-21). Such pottery is relatively rare in the Trent valley or the Peak District, the few locations having been listed by Manby (*ibid*). One substantial profile was recovered from Aston barrow 1, Aston-on-Trent (Reaney 1968, fig.6) and similar sherds derive from Swarkestone barrow 4 (ApSimon 1960, fig.9).

Mildenhall Ware

The rims found at Willington Quarry are characterised by relatively simple expanded, and usually everted, rims (illustrated sherds 4-7). The vessels represented are mainly plain, but the incised herringbone design on the top of one rim, and the row of small indentations are typical of the tradition. Mildenhall Ware was not represented in the assemblage recovered from the Wheeler excavation programme at Willington, but it was the main style of pottery found in the pit groups at Hill Farm, Willington (Woodward and Hancocks forthcoming). Further afield large assemblages of Mildenhall Ware occur at Briar Hill, Northamptonshire (Bamford 1985), Etton, Cambridgeshire (Pryor 1998) and Hurst Fen, Suffolk (Clark *et al* 1960).

Beaker

Diagnostic fragments from Willington include a rim and base sherds from one vessel, and pieces of base angle from two further vessels (illustrated sherds 29-31). Due to the small size of the sherds, attribution to particular Beaker styles is very difficult. However, the simple decoration, comprising horizontal rows of cord or comb impressions only, may suggest that these vessels belonged to the earlier stages of Beaker development. They may therefore have been similar to the primary Beaker found in Aston barrow 1 (Reaney 1968, fig.4a). The Beaker sherds with more complex decoration, found previously at Willington (Manby 1979, figs.65-6) and at Swarkestone barrow 4 (ApSimon 1960, fig.9) may have derived from Beakers belonging to more developed (but not necessarily later) styles.

Urn

The plain rim sherd from an urn-sized vessel (illustrated sherd 32) possesses a distinct internal bevel. This feature, together with the fabric containing dense quartz inclusions may indicate that this piece came from a Biconical Urn of the later Early Bronze Age period. However, this rim form does also occur during the Late Bronze Age.

Peterborough Ware

Adam Tinsley

Before discussing the wider affinities of the Willington assemblage it must be stressed that the following comparisons are based upon the authors direct experience of Peterborough Ware material, which while fairly extensive, mainly relate to assemblages from central and eastern England (Fig. 9). This situation does not render such comparisons invalid but it will unfortunately result in suitable comparative material from western England being largely overlooked. This point may carry some significance in the light of the discussion of Peterborough Ware and may warrant further investigation in order to situate the assemblage more securely and to examine any associated patterning in the distribution and form of the material.

The following discussion will focus upon aspects of form and decoration within the Willington assemblage and will attempt to situate the various typological subgroups definable within the assemblage in relation to comparable material locally and on a regional basis. Other salient and distinguishing features of the assemblage such as the fabric composition of the group are discussed. Key diagnostic material will be dealt with on an individual sherd basis within the wider umbrella of the various subgroup headings.

In general terms the Willington pottery offers one of the largest assemblages recovered from Derbyshire and the surrounding area. Indeed Willington differs from normal Peterborough Ware assemblages throughout the country, which for the most part consist of a small number of sherds. With this said it does not approach the larger deposits of sites mainly located in southern and central England such as West Kennet, Wiltshire (Thurnham 1861; Piggott 1962), Caesar's Camp, Surrey (Grimes 1960b) and the as yet unpublished sites of Yarnton, Oxfordshire, the Royal Medical College, Surrey and the Imperial College Sports Ground, Surrey, to name but a few. Nor does it offer the quality of material evident among such assemblages, the Willington group being highly fragmented, with much denuded material, a limited number of diagnostic sherds and a small number of partial vessel profiles. In some cases the fragmentary nature of the material can render it difficult to assign a subgroup assignation with confidence. However, at Willington it has been possible to identify material belonging to all three subgroups: Ebbsfleet, Mortlake and Fengate Ware. This occurrence is notable as the subgroups more commonly occur in a dual combination, usually though not always either Ebbsfleet and Mortlake or Mortlake and Fengate, or more frequently still in isolation. Willington is therefore part of a select group of sites that present a rare opportunity to examine all three subgroups in close association.

Among the geographically immediate sites of Derbyshire only Aston Hill includes material identified from all three subgroups and this relies upon a somewhat equivocal identification of a Fengate rim (May 1971, 33, fig. 2.4). The composition of the Potlock Cursus assemblage and other potentially important sites from the area are unfortunately unknown to the author and must await publication. Outside Derbyshire other tripartite assemblages are more numerous and include material from West Kennet long barrow, Wiltshire (Piggott 1962), Windmill Hill, Wiltshire (Smith 1965), the site of Baston Manor, Kent, (Philp 1973) as well as material recovered from the River Thames at Mortlake, although this may be questionable and the association entirely fortuitous for obvious reasons (Lawrence 1929; Cotton 2004). A further group of sites are currently under analysis and include material recovered by both Wessex Archaeology and Oxford Archaeology from among several sites in Berkshire and Surrey close to the Stanwell Cursus. They include the sites of Beddington, the Imperial College Sports Ground, The Royal Medical College and a group of isolated sites located as part of the Maidenhead flood relief scheme.

Elsewhere the apparent separation of the various subgroups has been taken to indicate distinctions in the ways in which they were used or at least deposited (Thomas 1999). However, these distinctions have not been explained satisfactorily and are not fully understood. Sites such as Willington therefore present a contrast with the established pattern of recovery but also an opportunity to examine the contextual relationship between the various subgroups. This opportunity is enhanced by the suite of radiocarbon dates available at Willington and is made all the more relevant given the possible issues raised by a review of the subject by Gibson and Kinnes (1997).

Ebbsfleet Ware.

The examples of Ebbsfleet Ware from Willington, identified in Fig. 1, are fairly typical of the subgroup. Illustrated sherds 10 and 11 are particularly diagnostic and bear comparison in form with published material from Ebbsfleet, Kent (Burchell *et al.* 1939), the River Thames at Mortlake and Hammersmith (Lawrence 1929 and unpublished material), Windmill Hill, Wiltshire (Smith 1965), West Kennet, Wiltshire (Piggott 1962) and Mixnam's Pit, Surrey (Grimes 1960a) to name but a few sites. The use of whipped cord on both sherds and in particular the herringbone pattern upon sherd 11, is not uncommon and was noted as a possible characteristic of chronologically late Ebbsfleet Ware by Smith (Smith 1974). Again such features can be seen on Ebbsfleet Ware

material from Mortlake (Lawrence 1929, 83) and at sites such as Green Howe, North Yorkshire (Wood 1971, 9 fig. 4) Thornton-le-dale, East Yorkshire (Manby 1956, 4, fig. 1), West Kennet, Wiltshire (Piggott 1962, 37, fig. 11), Windmill Hill, Wiltshire (Smith 1965, 75-6, figs. 31 and 32,) and Drayton Cursus, Oxfordshire (Barclay *et al.* 2003, 64, fig.4.22.8,).

Illustrated sherd 8 lacks somewhat the classic S-shaped profile of Ebbsfleet Ware as suggested in the profile of illustrated sherds 10 and 11 but can still be easily accommodated within the subgroup. The lack of decoration in this instance is notable, compared to the rest of the assemblage, yet Ebbsfleet vessels do tend to be decorated in a relatively spartan manner and plain examples are not entirely uncommon. Undecorated examples can be found among material from Ebbsfleet, Kent (Burchell *et al.* 1939, 419, fig. 8), Stonea, Cambridgeshire (Cleal 1986) and a site at Browick Road, Wymondham, Norfolk (Percival unpublished).

The small size of illustrated sherd 12 makes it difficult to compare directly with material elsewhere. It is probably from the rim of an Ebbsfleet vessel similar to examples cited above but could also be from the tip of a Fengate collar.

Mortlake Ware.

The Mortlake component of the assemblage contains some of the more complete profiles available from Willington. Among them are fairly typical examples of the subgroup as well as one or two examples that are more difficult to place.

Illustrated sherds 13 and 15, Fig. 2, are typical of Mortlake Ware, demonstrating a developed shoulder, a relatively deep cavetto neck and a thickened, externally projecting rim with a slight internal lip. Comparisons can be drawn directly with examples from Ecton, Northamptonshire (Moore and Williams 1975) and Craike Hill, East Yorkshire (Manby 1958) as well as unpublished material from Staines Road Farm, Shepperton, Surrey (Jones in prep), Beddington, Surrey, and other sites. They also bear comparison with sherds from Staines causewayed enclosure, Surrey, although in this instance the material is missing the shoulder profile and has been identified as Ebbsfleet Ware (Robertson-Mackay 1987, 175 and 176, fig. 52).

Illustrated sherd 14 could also equally stand such comparisons. Ebbsfleet vessels tend to be of larger proportions than the diameter suggested for the vessel represented (which is comparable with those diameters developed for illustrated sherds 13 and 15), and a Mortlake assignation would be acceptable for this sherd. However the simplicity of the rim and the greater width of the neck are more indicative of Ebbsfleet Ware. Having said this, the apparent relatively sharp return of the shoulder angle could push the pendulum in the opposite direction. Most Ebbsfleet vessels produce a softer more rounded S-shaped profile with relatively weak shoulders, although an example from the Drayton Cursus, Oxfordshire, can show how futile such generalisations can be (Barclay *et al.* 2003, 57, fig. 4.16.3).

The near vertical profile of illustrated sherd 16 is suggestive of a jar or tub like form and rules out an Ebbsfleet assignation. However, the same vertical profile, with a simple near vertical rim projecting from a weak shoulder, is not easily accommodated within Smiths original typology for Mortlake or Fengate Ware either (Smith 1956). This does not mean that the vessel is unique and several similar examples can be found within assemblages from Sawdon Moor, East Yorkshire (Brewster *et al.* 1995, 160, fig. 53.2,), Maidenhead, Berkshire (unpublished) and Little Cressingham, Norfolk (Lawson *et al*. 1986), although this last sherd has a pointed rather than flattened rim top. Further examples include a large profile from Wollaston, Northamptonshire (Gibson 1996), although in this instance the shoulder is more developed, and a vessel from Skendleby Longbarrow, Lincolnshire (Evans and Simpson 1991, 33, fig. 26.3), although here the flat rim top projects both externally and internally creating a t-shaped rim. In both these last instances, the vessels have been identified as Mortlake Ware and it is in this category that such material may more readily be incorporated. The vertical nature and flat rim top of illustrated sherd 17 may suggest a similar vessel to that above, although in this case, the lack of any further shoulder profile can not rule out an Ebbsfleet assignation, compare with an example from Carnaby Top Site 1, East Yorkshire (Manby 1975, 36, fig. 8.15).

The decoration of incised herringbone patterns evident on the internal surface and flat rim top of illustrated sherd 18 is common among the Peterborough Ware tradition. It is slightly more difficult, however, to find any direct parallels for the form of this sherd. While the short, flat topped rim and internal pinched ridge do not find direct comparisons, the sherd appears to come from a relatively small, unelaborate vessel and, as such, may more easily be accommodated within the Mortlake subgroup. Mortlake Ware in this respect tends to show a greater bias towards vessels of lower internal capacities than the other Peterborough Ware forms. Examples of similar small bowls include material from Garton Slack Barrow 112, East Yorkshire, although this lacks the flat rim top and internal ridge and is described by Manby as a Rudston Style vessel (Manby 1988 Appendix C., 81). Other examples include a vessel from Risby Warren, Lincolnshire (Riley 1957, 45, fig. 3.4) and, perhaps more closely, unpublished sherds with flat rim tops from Garrowby Wold Barrow 68, East Yokshire, as well as Maidenhead, Berkshire, and Imperial College Sports Ground, Surrey.

Mortlake/Fengate Ware

Material featured in Fig. 3 is slightly more problematic when assigning subgroup categories, but for the most part can find numerous parallels elsewhere. Illustrated sherd 19 appears to be relatively straightforward, in that the hammer-shaped rim profile is highly indicative of Mortlake Ware with numerous parallels at Caesar's Camp, Surrey (Grimes 1960b), West Kennet, Wiltshire (Piggott 1962) and Maidenhead, Berkshire (unpublished). It also finds further comparisons in terms of the hammer profile combined with pinched internal ridges with specific examples, P6 and P7, from West Kennet, Wiltshire, and an example of a Mortlake bowl inverted within a pit at Cippenham, Berkshire (Ford and Pine 2003). Alternatively the absence of a shoulder angle, while probably the result of breakage patterns and not an entirely unknown feature within the Mortlake subgroup, may rather be indicative of a Fengate vessel comparable to, for example, one from Briar Hill, Northamptonshire (Bamford 1985, 117, fig. 56 NP85). Grey areas do exist between stereotypical examples of any subgroup, for example, the Cippenham vessel appears to combine a Mortlake rim with a possible conical body, typically a feature of Fengate Ware, and one could not rule out such a combination in this case.

Illustrated sherds 20 and 21 also enter a grey area between Mortlake Ware and Fengate Ware. The projected profile of illustrated sherd 20 is most probably indicative of a Mortlake vessel similar to an example from Ampleforth, Yorkshire (Wilmot 1938) as well as similar, as yet unpublished, examples from the Imperial College Sports Ground, Surrey, among other sites (Wessex Archaeology). However, the incompleteness of this profile warns against making such assumptions and the sherd may easily have come from a Fengate collar. The decoration, which appears to be in the form of incised infilled triangles, is certainly more in keeping with a Fengate assignation. Examples of such a motif include material from Astrop, Northamptonshire (Leeds 1912), Briar Hill, Northamptonshire (Bamford 1985), Fornham St Genevieve, Suffolk, Creeting St Mary, also Suffolk, Baston Manor, Kent (Philp 1973) as well as the Wiltshire sites of Windmill Hill (Smith 1965) and West Kennet (Piggott 1962). I am only aware of a single instance where such a motif occurs on a Mortlake vessel and this is from Yarnton, Oxfordshire (unpublished), where the motif is executed in short lengths of twisted cord.

The profile of illustrated sherd 21 is more complete and with the triangular shape, external lip and internal ridging can find several parallels. Unfortunately, such parallels are indicative of both Mortlake and Fengate Wares. One comparison is with the restored vessel from Stanton Harcourt, Oxfordshire (Leeds 1940, 7, fig. 2), which, while not a classic Fengate form, could easily fall into this category. A similar sherd from Craike Hill, East Yorkshire (Manby 1958, 228, fig. 4.5), on the other hand, demonstrates a much more substantial and heavily angled shoulder and is indicative of a Mortlake vessel. While a Mortlake vessel is more likely, the decoration of this sherd is in keeping with illustrated sherd 20 and a Fengate motif. A greater profile in both cases would be necessary to substantiate either case.

Illustrated sherd 22 appears to be from near the base of conical or tub-like vessel and consequently could easily derive from a Fengate vessel or possibly from the lower portion of a vessel similar to that indicated by illustrated sherd 16. As such, it could be classed as Mortlake or Fengate, the decoration of whipped cord maggots at home with either.

Fengate Ware.

Fig. 4 contains some of the more unusual sherds in the Willington assemblage, although most seem at home in the Fengate Ware sub category. While the profile of illustrated sherd 23 is somewhat equivocal due to the speculative reconstruction of the neck and shoulder, it does find a close parallel with an unpublished reconstructed profile developed by Isobel Smith from material recovered at Lion Point, Essex (Smith 1956). With the Essex example, the t-shaped rim prompted identification as Mortlake Ware, although the profile also indicates a long, conical body with a flat base and more suggestive of Fengate Ware or, in this instance, perhaps a Mortlake/Fengate composite vessel.

The decorative scheme visible across the external rim or collar of curving arcs or 'swags' is highly interesting on a number of levels. The motif is relatively uncommon among Peterborough Wares but does occur on a number of examples covering the length and breadth of the traditions distribution. Similar motifs in twisted cord are evident at a number of sites including Ford in Northumbria (Longworth 1969; Kinnes and Longworth 1985), Arreton Down, Isle of Wight (Alexander *et al.*1960, Fig.7), King's Stanley, Gloucestershire (Gibson 2005;Evans 2006) and possibly Baston Manor, Kent (Philp 1973, fig.6.9), although the latter may more easily be described as infilled triangles. Crudely incised swags occur on a vessel interior from Caesar's Camp, Surrey (Grimes 1960b, fig.75), and sherds from Etton Causewayed Enclosure, Cambridgeshire (Pryor 1998, fig. 204). Swags and swag-like motifs executed in end on end finger nail decoration occur on two unusual vessels from Carnaby Top site 19, East Yorkshire (Manby 1975, fig. 13.4 and 5, illustrated as two vessels but probably one in the same, and fig. 13.10), a sherd from the Springfield Cursus, Essex (Buckley *et al.* 2001, fig. 21.72), and possibly on material from Fengate, Cambridgeshire, although the quality of the illustrations in this last instance is somewhat poor and the material has since been lost (Leeds 1922, fig. 8 and 9). Swags executed in bird bone have also been reported from a vessel in the Bagshot long barrow ditch, Surrey (Keiller and Piggott 1939), and Piggott noted similar examples from Barnham, Suffolk, and Cassington, Oxfordshire. In the case of the latter two examples the relevant material could not be found during examination of the assemblages and it may be that the various sherds have been lost. A final

example has been described by Gibson in relation to a uniquely decorated vessel soon to be published as part of an assemblage from Salford, Bedfordshire (Dawson forthcoming noted in Gibson 2005). Of all the examples quoted above, about half represent Mortlake Ware, the remaining Fengate Ware. As such, the decoration can offer little help in assigning a subgroup definition to the Willington material. However, what may be more interesting is that, as Gibson notes (ibid), swag motifs are a feature of Grooved Ware decoration and as such may be indicative of the transference of traits from one tradition to the other. This need not pre-suppose the presence of Grooved Ware in the area during the time of occupation at Willington but rather reflect a more general chronological overlap at a national scale.

Illustrated sherd 24 is perhaps more strongly indicative of the Fengate Ware subgroup than illustrated sherd 23 above. However, the knife like profile of the wide collar is quite difficult to parallel elsewhere. Collars of a similar size and shape, but demonstrating a greater curvature of the internal surface, occur at Cassington, Oxfordshire (Leeds 1940, Plate 1.A), Carnaby Top Site 19, East Yorkshire (Manby 1975 fig. 13.3, 49) and the rather curious reconstructed vessel from Icklingham, Suffolk (Piggott 1954 Plate X, 311). The flat internal surface of the Willington vessel is suggestive of a vertical sided cylindrical form rather than the typical Fengate truncated cone. It is perhaps within examples of such cylindrical jar forms that we may draw a better comparison for this sherd. In this respect, the Icklingham vessel as well as other unpublished material from the same site offer some indication of the potential form of illustrated sherd 23, as do perhaps sherds from the Thames at Mortlake (see Cotton 2004, 130, fig. 15.2).

The form of illustrated sherd 25 is rather curious and, unfortunately, too little of the vessel is represented to provide any clear cut parallels. The sharp external angle of the rim and the flat internal rim edge do find a match with an unpublished sherd from Normanby Park, Lincolnshire (Riley 1973). Here the sherd has fractured just below the external rim angle and is therefore missing any internal ridges as is evident in the Willington example, should they have ever existed. The sharp angle of the external rim edge and the shallow width of the external surface are perhaps more indicative of a Mortlake rim rather than a Fengate collar but it would be difficult to say more without further sections of the vessel.

The final sherd to warrant comment is illustrated sherd 27 (Fig. 4). Here, only the upper portions of the vessel rim are present and comparisons with both Mortlake and Fengate vessels are possible. However, the possible presence of an infilled triangle motif on the rim exterior together with the sharp angle of the body or neck are perhaps more indicative of the latter. In this respect, the sherd may be compared to a simple, conical profile from Sawdon Moor, East Yorkshire (Brewster *et al.*1995, 159, fig. 52.3) and several almost identical vessels from Yarnton, Oxfordshire (unpublished). While these vessels do not conform to the scheme of large developed collars more typical of Fengate vessels (Smith 1956), they do appear to represent a more simplistic, perhaps more utilitarian facet of the subgroup.

Conclusion

While the Willington assemblage is highly fragmented and contains much denuded material it has been possible to pick out a range of diagnostic sherds that indicate the presence of all three subgroups of the Peterborough Ware tradition. In terms of composition the Willington assemblage is therefore distinguished in local as well as inter regional terms, the various subgroups tending to occur in pairs or more often in isolation. In this respect it is unusual to recover Ebbsfleet Ware and Fengate Ware together unless accompanied by Mortlake Ware also. This separation was previously explained in partly chronological terms as a consequence of a sequence of evolution from Ebbsfleet through Mortlake to Fengate (Smith 1956). However, the review of radiocarbon dates associated with Peterborough Ware by Gibson and Kinnes (1997) and the dating programme of this project (Marshall *et al.* this volume) has cast some doubt upon this sequence and may indicate that the separation of the subgroups is rather conditional upon different spheres of use and deposition. The assemblage at Willington therefore offers a contrast with perceived patterns of deposition and the opportunity to study the contextual as well as possible chronological relationships of the various subgroups. The various subgroups appear to be equally well represented at the site, although sherds belonging to the Mortlake subgroup offer a better and more complete indication of the original vessel profiles. This may relate to possible differences in the nature or position of deposition but may equally simply reflect a greater robustness of Mortlake vessels along the rim and shoulder compared to their subgroup counterparts. In all cases examples of each subgroup include a range of fairly typical forms for which parallels are relatively easy to pinpoint and can be drawn from a wide geographical area. The same may be said of the range of decorative elements displayed by the assemblage. Collectively the range of forms and decoration at Willington testify to the consistent nature of Peterborough Ware adoption across the range of its distribution. However, it has been difficult to find direct parallels for a number of individual vessels, for example, illustrated sherds 18, 24 and 25. In these instances a more general set of attributes have been highlighted linking the sherds to comparative material elsewhere. This may indicate a degree of localised or even regional diversification in form although any such suggestion must be extremely tentative, due in large part to the fact that much of the immediate comparable material from Derbyshire has been unavailable for examination as a result of the temporary closure of the main repository, in this case Sheffield City Museum. Elsewhere, a degree of diversification can be

witnessed on a site by site and regional basis and has prompted the identification of regional groups either in purely stylistic terms, for example, Wales (Gibson 1995), or in relation to apparent differences in form, for example, East Yorkshire (Manby 1975). Whether or not the Willington material is indicative of such patterns must await further examination of comparative material and for the time being cannot be advocated.

A connection with Grooved Ware stylistic elements is suggested by the presence of swag motifs upon several rim sherds tentatively identified as Fengate Ware. It is suggested that the direct chronological and geographical overlap of stylistic elements is not necessary in order for there to have been a degree of influence established between the two traditions. Alternatively, the presence of certain stylistic elements within two distinct ceramic forms may instead be entirely fortuitous.

Fig. 9: Peterborough Ware sites mentioned in comparative study

Dating

Ann Woodward

Peterborough Ware

The results of the radiocarbon dating programme undertaken at Willington, and comparisons with other reliable dates for Peterborough Ware from around the country, suggest that the tradition was current for about five or six hundred years, between *3510-3360 cal BC (68% probability: start Peterborough Ware)* and *2970-2890 cal BC (68% probability: end Peterborough Ware)*(Marshall *et al*, this report). This is a considerably shorter span that that indicated by Gibson and Kinnes in 1997 (c. 3400-2500 cal BC), although it started at roughly the same time.

The new programme has confirmed the primacy of the Ebbsfleet style. Previous discussions and analyses of the tradition, starting with the seminal analysis of morphological and decorative changes provided by Smith (1956) have suggested that the Fengate style started later than Mortlake. Although based on only a few radiocarbon determinations, Gibson and Kinnes were able to point out that the Fengate style appeared to start just as early as Mortlake (Gibson and Kinnes 1997, 70). This pattern has been confirmed by the new radiocarbon programme (Marshall et al, this report), while the current available suite of dates indicates that the Fengate style may indeed have started before the Mortlake style.

The group of radiocarbon dates from Willington provide an important contribution to the corpus of such dates nationwide. Previous dates for Peterborough Ware from the East Midlands are few; the most important examples being those for Ebbsfleet styles vessels from Etton, Cambridgeshire (GrA-29353) and Raunds, Northamptonshire (OxA-7944) (Marshall et al forthcoming). At Willington the span of occupation associated with Peterborough Ware is considerably shorter than the span of Peterborough Ware nationwide. Also the Willington span appears to occupy the earlier part of the nationwide occurrence. The relative abundance of diagnostic Fengate and Mortlake-Fengate sherds at Willington may strengthen the ideas that the Fengate style appeared early, and it may be that a later 'Mortlake only' phase is not discernible at Willington, as occupation had ceased before that typological stage was reached.

Gibson and Kinnes concluded that the 'internal stylistic sequence (of Peterborough Ware) is a matter of typological perception and cannot be supported by associations, stratigraphy or C14' (Gibson and Kinnes 1997, 70). After a further decade of excavation and radiocarbon dates, this conclusion still stands. Indeed, it may be that the perceived development from Mortlake to Fengate styles will need to be reversed. However it is desirable that this process should be checked by a larger number of relevant dates in the future.

Mildenhall Ware

Available radiocarbon dates from sites such as Briar Hill (Northamptonshire), Broome Heath (Norfolk) and Etton (Cambridgeshire) indicate that the Mildenhall tradition was current during the middle quarters of the fourth millennium BC (Pryor 1998, 352). Unfortunately a series of thermoluminescence dates from sherds of Mildenhall Ware at Hill Farm, Willington (Barnett in prep) were anomalous, falling between 2500 and 1500 BC i.e. within the Late Neolithic and Early Bronze Age periods.

Beaker

Although the Beaker fragments could not be assigned to specific Beaker types, the incidence of very simple motifs may suggests that the vessels represented derived from early within the Beaker sequence, probably between c. 2500 and 2000 cal BC.

EBA Biconical Urn

The rim sherd from an urn, which probably belonged to the Biconical or Cordoned series of later Early Bronze Age urns. Such urns occur between c.1500 and1300 cal BC, and the Willington sherd may have been contemporary with the decorated Cordoned Urn from Willington (Manby 1979, fig.64) and with the later plain Cordoned Urns at cemeteries like Eye Kettleby, Leics (Marsden and Woodward fc) or Eaglestone Flat, Derbys (Barnatt 1994, fig. 1 and Table 2).

Lipid analysis and vessel function

Ann Woodward

A total of 50 pottery samples from Peterborough Ware, taken from the upper portions of diagnostic vessels, were submitted for lipid analysis (see Graham et al, this report). They were also selected in order that all areas of the site were represented. The aim was to investigate the incidence of lipids relating to dairy products, adipose fats from different groups of domestic animal, and traces of plant and insect waxes. Chemical traces suitable for these analyses were identified in 14 (28%) of the samples. This result was rather lower than that obtained for six other Neolithic assemblages recently studied, where lipids were found in 43% of the 438 samples analysed (Copley et al 2005).

Of the 14 samples where positive results were obtained, two were sherds of Mortlake style, one of Fengate style and the rest could only be identified generally as Peterborough Ware. Eleven of the results indicated the former presence of dairy products, one the presence of ruminant adipose fat (i.e. from meat) and two contained traces from mixed ruminant and porcine adipose fat. These results indicate that the consumption of dairy products was common and that the meat from ruminants (cattle, sheep or goat) and pigs was also being cooked in the vessels concerned. One Mortlake sherd and one of Fengate style both contained evidence from dairy products, and a second Fengate sherd was shown to contain ruminant adipose fat. In addition, two of the samples, one of Fengate style and one generalised Peterborough Ware sherd, contained traces of plant wax or of insect wax, such as beeswax. Samples producing positive results were located in all areas of the site, and evidence of dairy products and animal fats were found in both the southern and the northern sectors of the site.

Analysis also showed that thirteen of the sherds had been exposed to extreme heating (>300degreesC). Whether this heating had occurred during or after use however could not be ascertained.

A study of 438 sherds from six Neolithic sites in southern England produced some interesting comparative results (Copley et al, 2005). Of the sites studied, five had produced assemblages belonging to the earlier Neolithic bowl traditions and only one of the sites included assemblages of Middle and Late Neolithic date. From this site, Yarnton Flood Plain (Oxfordshire) sherds belonging to the Peterborough Ware (Middle Neolithic) and Grooved Ware (Late Neolithic) traditions were analysed, and also some samples from Beaker sherds dating from the Late Neolithic to Early Bronze Age periods. The results for Peterborough Ware samples from Yarnton can be compared with those from Willington. At Yarnton, 8 of the 21 samples of Peterborough Ware contained lipids Copley et al 2005, Appendix and fig.3, right). These were shown to represent dairy fats (four instances), mixed ruminant and porcine adipose fats (three instances), plant lipids (two instances) and ruminant adipose fat (one instance). These results compare well with those from Willington which have been summarised above.

A previous analysis of lipids from sherds of Peterborough Ware and Grooved Ware from the site of Upper Ninepence, Walton (Powys) had shown that Grooved Ware contained porcine fats and the Peterborough Ware mainly ruminant fats (Dudd et al 1999). However, for Yarnton it could be shown that there was no direct association between vessel tradition and broad ruminant or porcine groupings (Copley et 2005, fig.4, lower right and fig.5). Both Peterborough Ware and Grooved Ware contained evidence from dairying, ruminant animal fats and porcine fats, and the Peterborough Ware results from Willington also fit well into this more generalised picture.