THE FINDS

INTRODUCTION

by H M Bamford

Recovery of Finds

The quantity of neolithic artefacts recovered in the excavation does not seem entirely commensurate with the area examined or with the length of neolithic occupation or use of the site which other evidence suggests.

The apparent anomaly cannot be explained simply as a consequence of stripping away the ploughsoil and its residual contents by machine, although this undoubtedly removed the greater part of what originally had been on or in the prehistoric surface which ploughing had destroyed. Finds within even the larger undisturbed features were notably sparse over much of the site.

The relatively slow methods of digging and careful observation required in dealing with the difficult stratigraphy should also have ensured that, in general, the rate of recovery of stratified finds was high, although this was not checked by the sieving of any control samples. Both flint and pottery were highly visible in the predominantly yellow-brown and strong brown soils on the site, and the numbers of very small flints and crumbs of pottery recorded were reassuring.

It is possible, of course, that the excavation sample is not representative of the whole, but the probability that this is so is not great, given the proportion of the various parts of the enclosure examined in detail and the observed distribution of finds in these areas.

Stratification of Finds

The method of recording of stratified finds which was employed throughout the excavation (see Introduction p 6) enabled their distribution to be plotted accurately within the fill of individual features. Where present in any number, they were frequently clustered within clearly defined layers; a pattern which suggests that, in the larger features at least, there had been little movement or vertical mixing of items subsequent to their final deposition in antiquity.

Finds on the subsoil surface, whose position was also plotted, seem to be derived at least partly from the original prehistoric ground surface and to echo the distribution on that surface. They cannot be attributed entirely to a secondary dispersal from neolithic and other features, since distribution plots reveal quite clearly that this was normally very limited. Other reasons for this conclusion will be given in the discussion of specific classes of finds.

Distribution of Finds

The density of distribution of neolithic finds varied markedly in different parts of the site, and the pattern suggests that within the greater enclosure, the inner enclosure was the main centre of activity throughout the neolithic period. Analysis of the frequency and approximate density of artefacts stratified in the outer ditch, inner ditch and spiral extension of the inner ditch respectively provides a fairly accurate illustration of this pattern (Table 3: 1-4).

TABLE 3: Distribution of Finds Among the Neolithic Ditch Circuits (excavated segments only)

TABLE 3:1 All Worked Flints

	Outer Ditch		Inner Ditch		Spiral Arm of Inner Ditch		Total
Phases II-V	96	12.2%	187	23.7%	506	64.1%	789
Phases VI-VIII	12	1.7%	212	30.8%	465	67.5%	689
Phase Uncertain	16	5.5%	38	13.2%	235	81.3%	289
Total	124	7.0%	437	24.7%	1206	68.2%	1767

TABLE 3:2 Retouched Flint Implements

	Outer Ditch		Inner Ditch		Spiral Arm of Inner Ditch		Total
Phases II-V	7	5.8%	22	18.3%	91	75.8%	120
Phases VI-VIII	4	3.8%	33	31.1%	69	65.1%	106
Phase Uncertain	2	4.0%	6	12.0%	42	84.0%	50
Total	13	4.7%	61	22.1%	202	73.2%	276

TABLE 3:3 Pottery Sherds

	Outer Ditch		Inner Ditch		Spiral Arm of Inner Ditch		Total
Phases II-V	28	5.0%	134	23.6%	405	71.4%	567
Phases VI-VIII	5	1.2%	85	19.6%	343	79.2%	433
Phase Uncertain	1	0.5%	21	10.2%	183	89.3%	205
Total	34	2.8%	240	19.9%	931	77.3%	1205

TABLE 3:4 Number of Finds Per Cubic Metre of Excavated Fill (volume of fill is approximate)

	Outer Ditch Phases II-VIII ($100m^3$)	Inner Ditch Phases II-VIII ($190m^3$)	Spiral Arm of Inner Ditch Phases II-VIII ($80m^3$)	Interior Features (Phase VIII) ($12m^3$)
Flints	1.24	2.3	15.0	26.8
Pottery Sherds	0.3	1.3	11.6	5.8
Other Finds	0.01	0.05	0.4	—
Total	1.6	3.6	26.8	32.6

The density of finds of all types in the spiral arm of the inner ditch was nearly seventeen times greater than in the outer ditch and more than seven times greater than in the main inner ditch, while the density of finds in neolithic features within the inner enclosure was higher still. The bias was even stronger in the distribution of pottery sherds alone.

Within the inner enclosure the distribution showed significant variations which are discussed with specific reference to the worked flints in the appropriate section of this report.

THE WORKED FLINTS

by H M Bamford

Introduction

A total of 4359 worked flints and associated waste fragments were recorded from the excavation, in addition to 1006 pieces recovered from the ploughsoil before and during the machine clearance of the site. 2406 pieces were stratified in the fill of the neolithic features, 762 in other contexts, and a further 1191 were found on or just below the surface of the subsoil.

Recording

The position of every find, apart from those in the ploughsoil, was recorded as described on p 6 and each was normally bagged separately to prevent post-excavation damage. After cleaning, all pieces were examined macroscopically and under a binocular microscope at 20× magnification. Measurements were taken along the bulbar axis perpendicular to the striking platform (length), and at the widest point perpendicular to the bulbar axis (breadth) and through the point of greatest thickness. Standardised descriptions including the metrical data were then entered on record sheets (illustrated in microfiche Appendix 5:1). Such details of edge-wear as were visible at the magnification used were included in the description. All data were then transferred to computer file and subsequently sorted and tabulated with the aid of a Research Machines 380Z microcomputer.

The Raw Material

The flints are generally of fresh appearance. Approximately 1·5% exhibit some degree of cortication, but this normally amounts to no more than a slight, milky clouding or mottling of the surface. The raw material is for the most part of vitreous quality and dark grey, mid to dark grey-brown or, more rarely brown in colour. Some 10% of all pieces were flawed by granular or crystalline inclusions and 5% were of a granular mottled light grey or buff-coloured flint. The cortex, where present, is usually stained orange or yellowish brown and weathered, sometimes heavily abraded and pitted. Pebbles as well as larger nodules and fragments of nodules were exploited and the main source was almost certainly gravel deposits along the River Nene where comparable flint can still be found about a kilometre from Briar Hill. On Briar Hill itself unworked flint occurs only sparsely in the form of small, heavily corticated and rolled gravel chips in the subsoil.

Larger, specialised flint implements such as axes may have been obtained from a different source, and there is evidence that some ultimately were cannibalised. Over half of the small number of flakes bearing remnants of a ground and polished surface are of a light grey, opaque flint with fine, cherty inclusions which does not match any other flint on site. At least half are also clearly neither accidental nor simply re-chipping waste, and there is one core (F11) of very similar material which could conceivably have been reduced from an axe.

Distribution of Flints on Site

The distribution of flints found on the excavation surface was plotted manually, and the distribution of all recorded retouched pieces by means of the computer and a digital plotter (Fig 31). Both show an identical clustering of finds in two distinct areas.

(1) Above and in the ditch fills on the north side of the inner enclosures.

(2) Across the southern half of the inner enclosure extending across the inner ditch circuit.

The first of these concentrations is confined to the fill of the neolithic ditches, the surrounding surface being comparatively bare. The second has no such exclusive stratigraphic association but corresponds roughly to the distribution of neolithic features in the interior of the enclosure, the obvious inference being that the two are directly connected. As a first test of this, an attempt was made to quantify the distribution of surface finds, omitting those associated with the neolithic features. Details of this are given in microfiche (Appendix 5:3) but, briefly, the distribution mean for the excavated part of the enclosure as a whole is calculated at 10·2 flints/100m². A Poisson distribution plotted against the observed distribution indicates that the latter is unlikely to be random, while a model which assumes a mean of 17·5 flints/100m² over an area one third of the total excavated and a mean of slightly more than 6 flints/100m² over the rest matches it closely (Fig 32).

The picture is complicated, however, by the fact that one of the main clusters of post-neolithic features also lies within the area of greatest surface flint density, which is, in addition, the most fissured by periglacial gullies. Given that the original prehistoric ground surface had been disturbed by ploughing and the ploughsoil removed by machine, it is necessary to consider the possibility that the pattern is the result, not of activities connected with the original use of the site, but of differential preservation, on an otherwise denuded subsoil surface, of residual material in the fills of the post-neolithic features or in pockets of prehistoric topsoil surviving in hollows above the periglacial features. It is also possible that minor variations in the depth of the

The Distribution of Retouched Flints

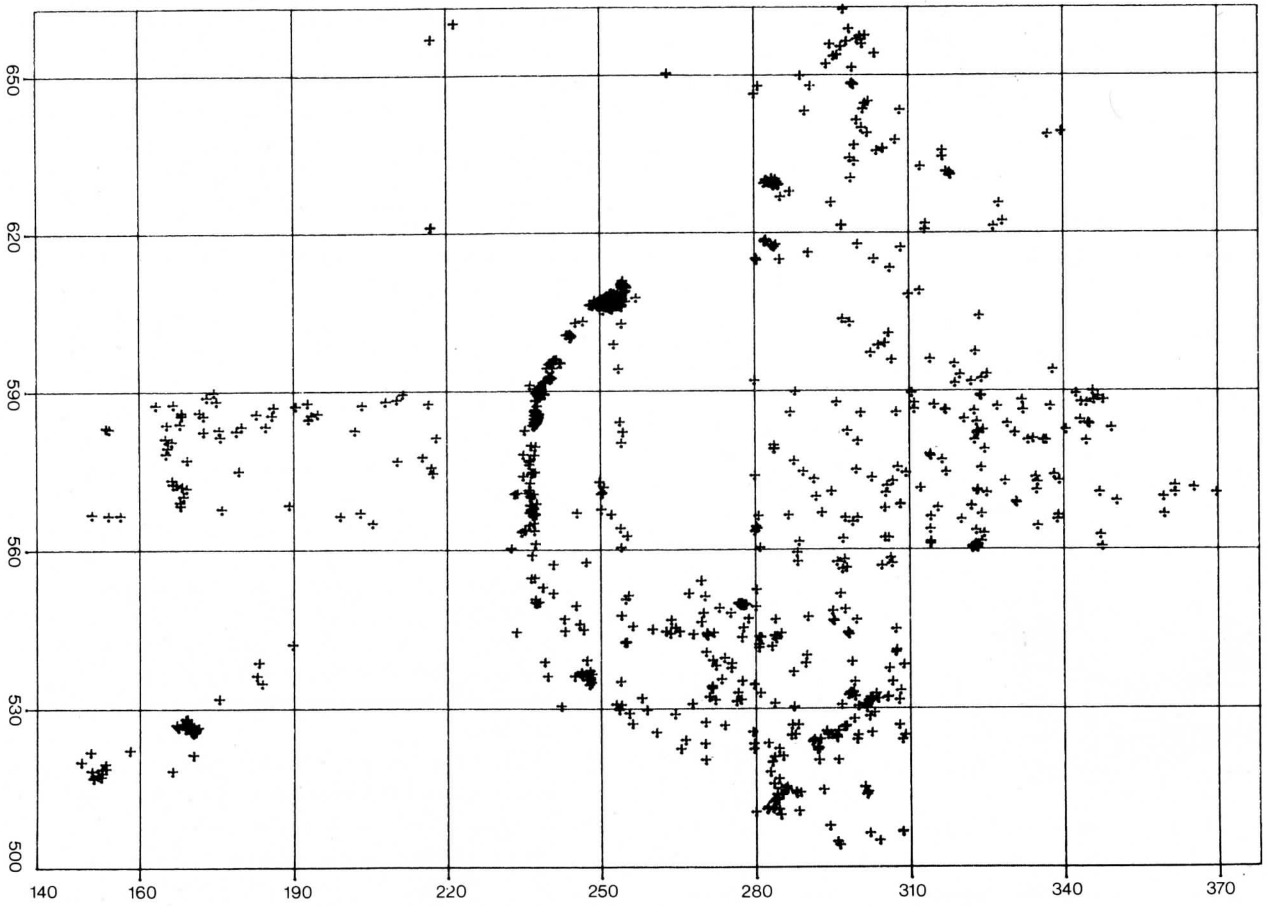


Fig 31 *Computer plot of distribution*

mechanical stripping could have resulted in an uneven recovery of finds.

Neither hypothesis stands up entirely to closer examination, and the latter can probably be dismissed altogether. The procedure for stripping and cleaning was standard throughout the course of the excavation and was monitored carefully. The pattern emerged consistently over the four separate seasons of work and does not correspond in any obvious way to purely excavational boundaries.

Differential preservation seems more likely but, if the excavation surface finds are considered alone, there is very little discernible clustering above or immediately round any particular features or groups of features other than the neolithic ditches over which it is sometimes sharply localised. At the same time, anomalies in the distribution suggest that ploughing had probably not caused any widespread secondary dispersal of artefacts at this level, such as might obliterate obvious clustering. In an area of high flint density, the marked paucity of finds from the interior of the iron age enclosure 131, for example, seems better explained by activities connected with use of that enclosure than by any later event (see p 51). Admittedly there are small concentrations near the groups of post-neolithic features on the north and west sides of the neolithic outer enclosure, but these are very restricted and the latter, at least, does not coincide at all exactly with the main cluster of iron age pits in the area, which contained relatively few flints. In fact, the mean distribution of flints within the fills of post-neolithic features grouped in different parts of the site shows a variation corresponding to that of the subsoil surface distribution.

If the distribution is not, therefore, random, and not the result of differential preservation or recovery of finds, a direct relationship to the neolithic features may be postulated.

The distributions of individual types of classified retouched implements, which support this conclusion, is discussed in the description of the retouched component.

Analysis – Objectives

The object of analysis has been to compile a series of statistical 'profiles' of discrete groups within the assemblage, comparable with each other and with data published on assemblages from other sites. As far as possible established terms and methods have been used to describe and quantify the morphological and metrical characteristics of the principal components of each group, namely cores, flakes and blades, pieces with irregular or

Worked Flints on the Subsoil Surface: Density of Distribution

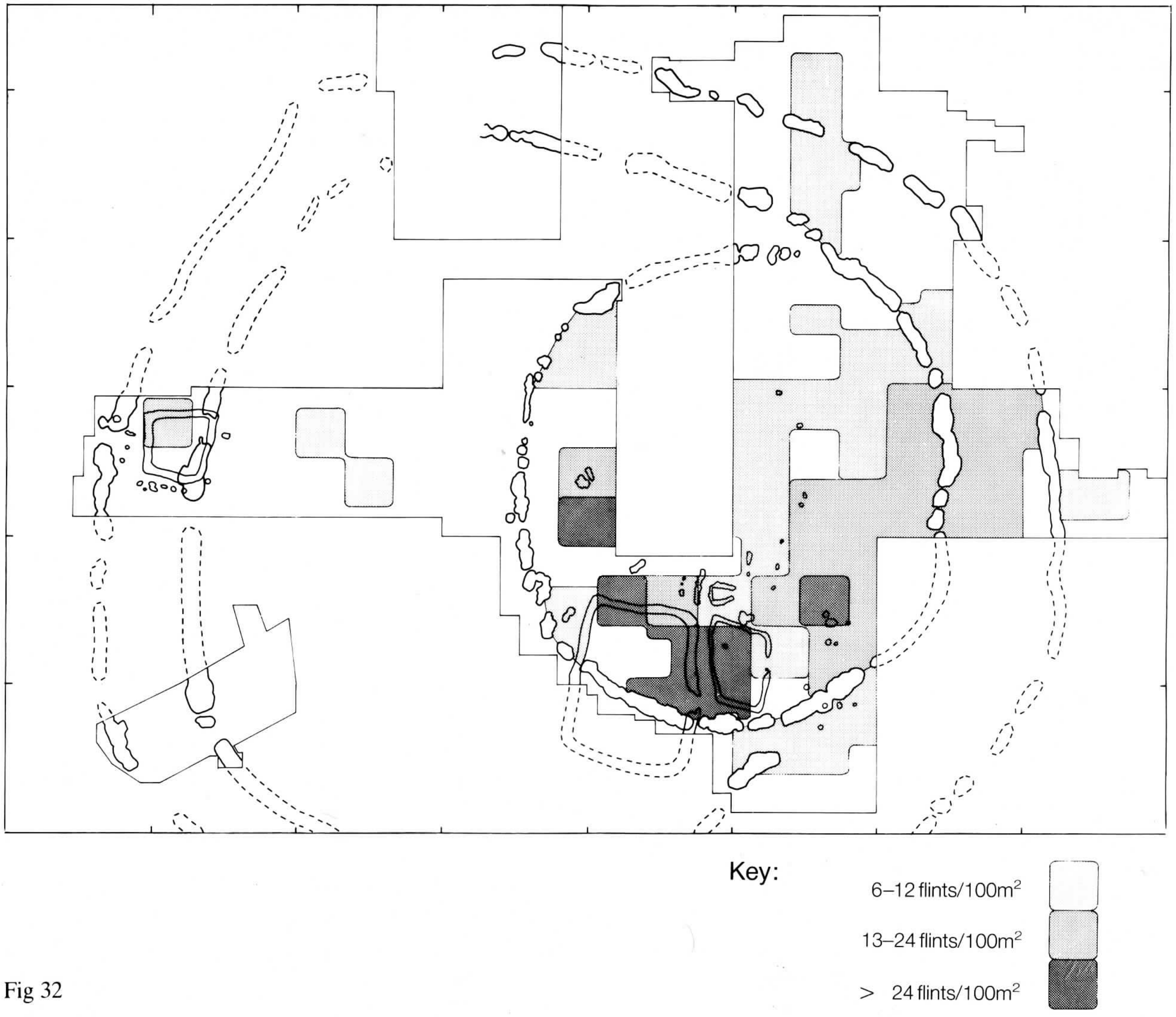


Fig 32

thermal fractures described here as 'chunks', and retouched pieces. Since the groups selected are to some extent chronologically distinct, this procedure may be expected to reveal any significant typological trends. On the other hand, the mechanics of ditch silting and repeated disturbance of fills by recutting mean that later deposits, in the ditch segments especially, must have included an increasing proportion of material residual from earlier activity on the site, and this factor has to be taken into account.

Selection

For purposes of analysis the assemblage was divided into five main groups according to stratigraphic context.

1. **Phases II-V (earlier neolithic ditches)** *c*3500bc-2700bc
   789 flints
   Further subdivision of Phases II-V was not practical because of the smallness of the resulting samples and because of uncertainties as to the precise phasing of some contexts. No finds were recorded from features ascribed to Phase I.
2. **Phases VI-VIII (neolithic ditches)** *c*2700bc-2000bc
   689 flints
   This group comprises all flints found in the latest ditch segments except those from layers which can be assigned with certainty to phase IX. It thus includes material from secondary ditch fills which must have accumulated during Phase VIII but which cannot, for the most part, be isolated with precision.
3. **Phase VIII (interior) and Phase IX.** *c*2400bc-1600bc
   603 flints
   Finds from the neolithic features within the inner enclosure and those from demonstrably later neolithic contexts above the neolithic ditches have been combined to form a sample compatible in size with the first two, although for some purposes they have been treated as two separate groups.
4. **Areas A7, B6, B7, C7 and C8. Subsoil surface.**
   600 flints
   Finds on or in the subsoil surface at the base of the ploughsoil were strictly speaking unstratified but, for the reasons noted above, it seems probable that lateral displacement at this level had been minimal. This sample from the area of greatest distribution density has been included for comparison with the later neolithic assemblage, to test the hypothesis that the two are related. It is from an area of 4380m² and amounts to slightly over 50% of all subsoil surface finds.

5 **Phase XI. Iron Age**
290 flints
It is assumed that most of the flints in iron age contexts were residual from the neolithic occupation. The total number of such finds was relatively small, but is included for purposes of comparison.

Two further groups have been listed, although not analysed in any detail. These are: flints from undated features which could be of neolithic date (69 flints) and those from neolithic ditches whose precise phasing is in doubt because of insufficient or ambiguous evidence (328 flints). Flints from Roman and later contexts have been omitted from the survey.

The quantities of flints from single features or deposits were not normally sufficiently large to warrant individual study, but a few particular associations are of interest and will be discussed separately.

The Assemblage

The composition of the bulked finds groups is summarised in Table 4. For comparison, Table 5 gives a simplified break-

TABLE 4: Composition of Flint Assemblage

	Classified Retouched	Misc. Retouched	Flakes & Blades – Utilised	Flakes & Blades – Other	'Chunks' Utilised	'Chunks' – Other	Core Rejuvenation Flakes – Utilised	Core Rejuvenation Flakes – Other	Cores – Retouched	Cores – Other	Hammerstones	TOTAL	Burnt Flints
Phases II-V Ditches	80 10.1%	40 5.1%	165 20.9%	417 52.8%	3 0.4%	29 3.7%	5 0.6%	7 0.9%	7 0.9%	34 4.3%	2 0.2%	789	78 9.9%
Phases VI-VIII Ditches	75 10.9%	31 4.5%	164 23.8%	347 50.4%	3 0.4%	27 3.9%	1 0.15%	4 0.6%	4 0.6%	32 4.6%	1 0.15%	689	71 10.3%
Neolithic Ditches – Phasing Uncertain	39 11.9%	18 5.5%	77 23.5%	149 45.4%	2 0.6%	17 5.2%	—	4 1.2%	3 0.9%	19 5.8%	—	328	21 6.4%
Phase VIII (Interior)	16 5.0%	8 2.5%	62 19.3%	207 64.5%	2 0.6%	14 4.4%	—	3 0.9%	1 0.3	8 2.5%	—	321	32 10.0%
Phase IX	39 13.8%	10 3.6%	71 25.2%	128 45.4%	2 0.7%	9 3.2%	1 0.3%	—	4 1.4%	18 6.4%	—	282	18 6.4%
Subsoil Surface Areas A7 B6 B7 C7 C8	103 17.1%	46 7.7%	179 29.8%	196 32.6%	6 1.0%	19 3.2%	4 0.7%	1 0.2%	9 1.5%	37 6.1%	—	600	32 5.3%
Undated Features	6 8.8%	5 7.3%	23 33.8%	32 47.1%	—	1 1.5%	—	—	—	1 1.5%	—	68	4 4.4%
Phase XI (Iron Age)	42 14.5%	9 3.1%	71 24.5%	125 43.1%	1 0.35%	17 5.9%	1 0.35%	—	3 1.0%	21 7.2%	—	290	18 6.2%
TOTAL	400 11.9%	167 5.0%	822 24.4%	1591 47.2%	19 0.6%	133 3.9%	12 0.4%	19 0.6%	31 0.9%	170 5.0%	3 0.1%	3367	293 8.7%

TABLE 5: Composition of Select Stratified Groups

	Retouched	Utilised	'Waste' Flakes	'Chunks'	Cores	TOTAL
Spiral arm of Inner Ditch – Inner Enclosure						
162 A-D/165 A-D(5)	46	58	160	14	9	287
(Phases II-V)	16.0%	20.2%	55.8%	4.9%	3.1%	
162 E,F/165 D(6-9)	33	53	119	4	7	216
(Phases VII-VIII)	15.3%	24.5%	55.1%	1.9%	3.2%	
159 A, B	7	13	29	2	6	57
(Phases V, VII?)	12.3%	22.8%	50.9%	3.5%	10.5%	
158 A, B	7	9	30	4	—	50
(Phases V, VII?)	14.0%	18.0%	60.0%	8.0%		
163 A-D	22	31	73	4	3	133
(Phases III-VII)	16.5%	23.3%	54.9%	3.0%	2.3%	
Inner Ditch, South of Main Enclosure						
129	3	11	35	8	1	58
(Phase V?)	5.2%	19.0%	60.3%	13.9%	1.7%	
124E	9	28	76	6	14	133
(Phases VII-IX)	6.8%	21.1%	57.1%	4.5%	10.5%	
248 B(3)-C	19	35	62	7	8	131
(Phases VII-IX)	14.5%	26.7%	47.3%	5.3%	6.1%	
Later Neolithic Features						
137	2	8	31	2	3	46
(Phase VIII)	4.3%	17.4%	67.4%	4.3%	6.5%	
145	10	28	120	9	3	170
(Phase VIII)	5.9%	16.5%	70.4%	5.3%	1.8%	
337 B	13	10	16	1	6	46
(Phase IX)	28.2%	21.7%	34.8%	2.2%	13.1%	

down of the largest finds groups from individual stratigraphic units or sequences.

The state of preservation of the flints is generally fairly good and those found stratified in later neolithic contexts are no more often broken or heavily damaged than those from earlier deposits.

Hammerstones

The three flint hammerstones are rounded nodules. One is complete, although most of its surface is heavily pocked and chipped, with some areas of smoothing indicative of abrasive wear. The other two are partly shattered and one, in particular, shows evidence of heavy use. (For further comments on hammerstones, see the section on Worked Stone).

Cores

(Fig 42: F1-F11)

Classification of the cores has been according to the system used first in the Hurst Fen Report (Clark et al 1960, 216).

Class A Single Platform
1. Flakes removed all round. (F1)
2. Flakes removed part way round. (F2-F4)

Class B Two platforms
1. Parallel platforms.
2. Platforms at an oblique angle to one another. (F5)
3. Platforms at right angles to one another. (F6)

Class C Three or more platforms. (F7)

Class D Keeled. Flakes struck from two directions. (F8, F9)

Class E Keeled, but with one or more platforms. (F10, F11)

Unclassifiable
1. Any irregular pieces which have been used primarily for the deliberate production of flakes.
2. Broken fragments.

The results are summarised in Table 6.

It will be seen that irregular, unclassifiable cores are the largest single component of each sample group. Most appear to be either the discarded product of an unsuccessful attempt at flaking or fragments which have split along latent fractures during working. Of the classified types, those with a single platform are slightly more numerous overall than two-platform or multi-platform varieties, and A2 cores are the most common individual class. Cores with surviving blade scars, mostly class A or B, are rare, but least so in Phases I-V. Apart from this, however, there is no marked difference between the groups from earlier and later dated contexts.

The significance of the disproportionately large number of unclassified cores is not easy to assess because of a shortage of published data which are directly comparable. In many reports only classified types are listed and, in others, irregular forms are subsumed under a general heading such as 'irregular workshop waste' (eg Storey's Bar, Fengate; Pryor 1978, 143) and are not discussed separately. Where figures are available they suggest that the incidence is widely variable, ranging from *c*6%-7% of the total cores from Broome Heath (Wainwright 1972, 48) to 76·3% at Bury Hill, West Sussex (Drewett 1981, 78). If this category is omitted from the reckoning, however, the relative values of the different classified types on Briar Hill conform fairly closely to those recorded for the majority of neolithic assemblages.

Retouched Cores

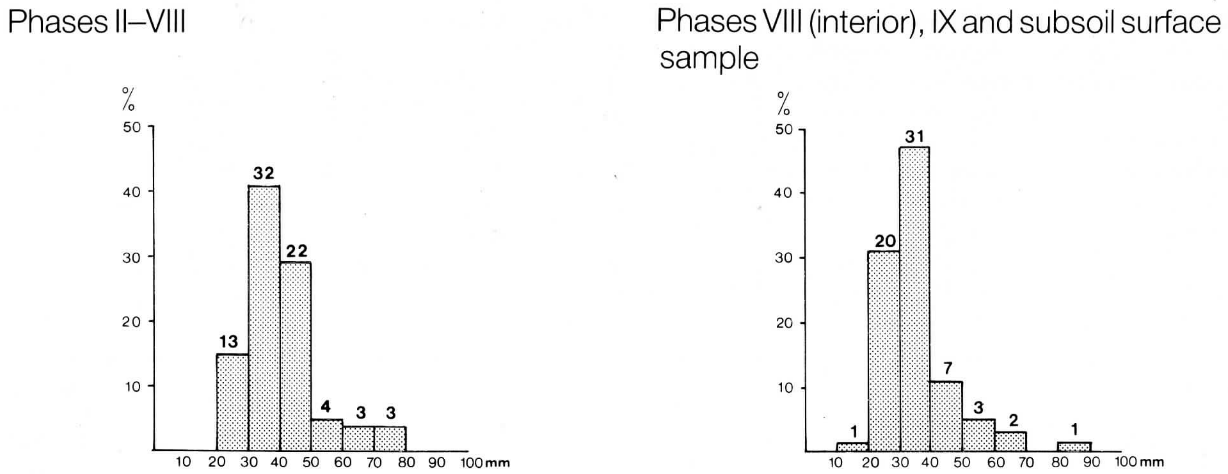
15·5% of all cores, or 30·5% of classified cores in the samples appear to have been modified for use as scrapers (eg Fig 42: F9, F10). The proportion does not vary significantly between the different groups, but seems unusually high.

Core Dimensions

All intact cores were weighed and the maximum dimension of each recorded, following the method used in analysis of flints from Grimes Graves (Saville 1981a, 7). The results are presented in the form of bar charts in Figs 33 and 34 and illustrate the small size of most cores from the site. All but

TABLE 6: Classification of Cores

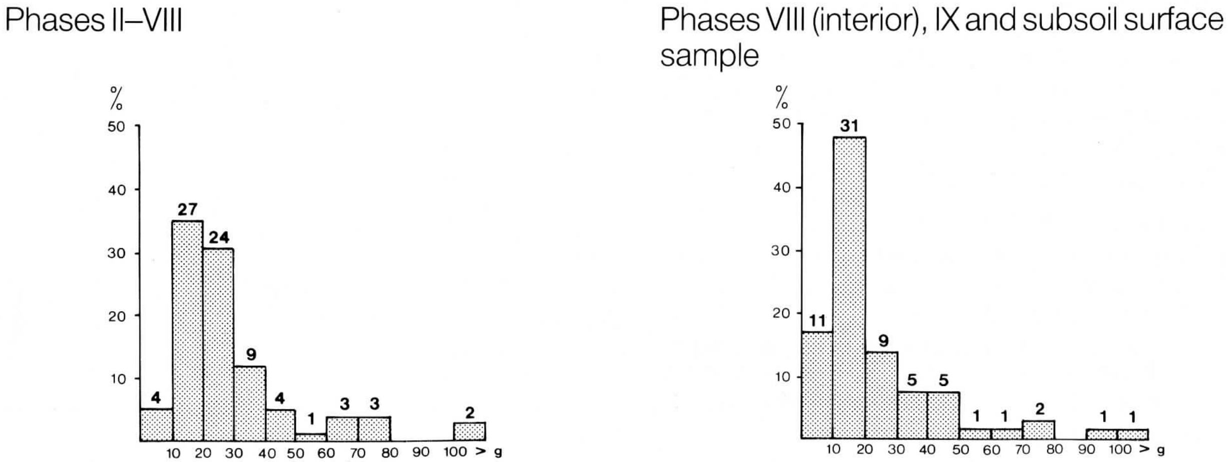
	A1	A2	B1	B2	B3	C	D	E	N/C	Broken	TOTAL	No. with Blade Scars Only	No. with Some Blade Scars
Phases II-V	3	6	—	6	2	2	3	3	8	8	41	3	5
Phases VI-VIII Ditches	1	7	1	1	3	2	1	1	15	4	36	—	2
Neolithic Ditches – Phasing Uncertain	—	4	—	—	5	2	1	1	5	4	22	1	1
TOTAL	4	17	1	7	10	6	5	5	28	16	99	4	8
	4.0%	17.2%	1.0%	7.1%	10.1%	6.1%	5.0%	5.0%	28.3%	16.2%		4.0%	8.1%
Phases VIII (Interior) and IX	1	7	1	—	3	5	1	2	8	3	31	—	2
Subsoil Surface Areas A7, B6, B7, C7, C8	1	6	1	1	6	1	2	—	21	7	46	1	2
TOTAL	2	13	2	1	9	6	3	2	29	10	77	1	4
	2.6%	16.9%	2.6%	1.3%	11.7%	7.8%	3.9%	2.6%	37.6%	13.0%		1.3%	5.2%
Phase XI (Iron Age)	—	4	2	—	2	4	2	—	6	4	24	—	3
TOTAL (All Phases)	6	34	5	8	21	16	10	7	63	30	200	5	15
	3.0%	17.0%	2.5%	4.0%	10.5%	8.0%	5.0%	4.0%	31.5%	15.0%		2.5%	7.5%



Phases II–VIII

Phases VIII (interior), IX and subsoil surface sample

Fig 33 *Maximum dimensions of cores*



Phases II–VIII

Phases VIII (interior), IX and subsoil surface sample

Fig 34 *Weights of cores*

two of the classified examples fall within the range 20mm-50mm and weigh less than 60g, while the largest specimens are all in the 'unclassifiable' category. The average weight of the combined samples is 28g, which is characteristic in flint industries of all periods in the Northampton area (eg Chalk Lane, Northampton; Bamford 1981, and Ecton; Moore and Williams 1975).

Core Reduction

Tables 7 and 8 respectively give a rough quantification of the extent of cortical surface remaining on complete cores and the number of complete cores on which there is evidence of fewer than ten removals. They give no more than a general indication of the extent of core reduction, but suggest that quite a high proportion had been worked to only a limited extent and, conversely, that no more than 27% of any single group or 18% of the bulked sample, had been flaked to the point where the entire cortical surface was removed. It is likely, therefore, that the small size of many cores is due as much to the small size of the original nodules as to exhaustive working of larger pieces, particularly in respect of the A2 and unclassified categories. Dual platform and multi-platform cores tend, by definition, to be more intensively flaked, and on 29% of Class B cores existing platforms were observed to truncate scars of earlier flaking.

Flakes and Blades

Definitions

For the purposes of this study all flakes and blades have been subdivided into two main groups: those which to the naked eye or under 20× magnification exhibit signs of edge-wear strongly indicative of their having been used as implements, and the rest, including waste and pieces on which edge damage could be either accidental or the result of use. Parallel sided flakes with a breadth:length ratio of less than 1:2 have been classed as blades (Pitts 1978, 19) and the conventional definition of a broad flake as one with a breadth:length ratio greater than 5:5 has been retained.

Sample Selection

Detailed analysis has been carried out on the flakes in four of the selected stratified groups, namely those from the neolithic ditch segments of phases II-V and VI-VIII, the combined later neolithic group from features in the interior of the enclosure and from Phase IX deposits, and the assemblage from the subsoil surface. The resultant sample sizes are roughly comparable.

TABLE 7: Cortex on Intact Cores

Cortex as % of Surface Area	Phases II-V (Ditches)	Phases VI-VIII (Ditches)	Neolithic Ditches – Phase Uncertain	Phases VIII (Interior) and IX	Subsoil Surface Areas A7, B6, B7, C7, C8	TOTAL
>50% Cortex	3	6	2	4	7	22 (15.5%)
<50% Cortex	20	21	14	15	24	94 (66.2%)
No Cortex	9	2	—	7	8	26 (18.3%)
TOTAL	32	29	16	26	39	142

TABLE 8: Removals from Intact Cores

	Phases II-V (Ditches)	Phases VI-VIII (Ditches)	Neolithic Ditches – Phase Uncertain	Phases VIII (Interior) and IX	Subsoil Surface Areas A7, B6, B7, C7, C8	TOTAL
Classified Cores						
<10 Removals	3	2	3	4	5	17 (19.3%)
>10 Removals	22	13	8	15	13	71
TOTAL	25	15	11	19	18	88
All Cores						
<10 Removals	6	10	5	9	19	49 (34.5%)
>10 Removals	26	19	11	17	20	93
TOTAL	32	29	16	26	39	142

TABLE 9: Intact Utilised Flakes and Blades: Cortex on Dorsal Face

	5%	25%	50%	75%	100%		TOTAL
Phases II-V	44 43.1%	29 28.4%	17 16.7%	7 6.9%	5 4.9%	—	102
Phases VI-VIII	42 43.3%	26 26.8%	18 18.6%	9 9.3%	1 1.0%	1 1.0%	97
Neolithic Ditches – Phase Uncertain	28 54.9%	11 21.6%	7 13.7%	2 3.9%	3 5.9%	—	51
Phases VIII (Interior) & IX	42 48.8%	26 30.2%	6 7.0%	11 12.8%	1 1.2%	—	86
Subsoil Surface Areas A7, B6, B7, C7, C8	55 48.7%	27 23.9%	21 18.6%	7 6.2%	3 2.6%	—	113
Phase XI	27 50.9%	17 32.1%	5 9.4%	3 5.7%	1 1.9%	—	53
TOTAL	238 47.4%	136 27.1%	74 14.7%	39 7.8%	14 2.8%	1 0.2%	502

TABLE 10: Intact Flakes and Blades (Excluding Utilised): Cortex on Dorsal Face

	5%	25%	50%	75%	100%		TOTAL
Phases II-V (Ditches)	101 46.4%	50 23.0%	32 14.8%	15 6.9%	10 4.6%	9 4.2%	217
Phases VI-VIII (Ditches)	76 40.2%	46 24.3%	38 20.1%	9 4.8%	11 5.8%	9 4.8%	189
Neolithic Ditches – Phase Uncertain	34 44.7%	17 22.4%	10 13.2%	7 9.2%	7 9.2%	1 1.3%	76
Phases VIII (Interior) and IX	93 50.3%	43 23.2%	20 10.8%	19 10.3%	5 2.7%	5 2.7%	185
Subsoil Surface Areas A7, B6, B7, C7, C8	44 44.9%	25 25.5%	14 14.3%	3 3.1%	6 6.1%	6 6.1%	98
Phase XI	27 43.5%	14 22.6%	10 16.1%	6 9.7%	2 3.2%	3 4.8%	62
TOTAL	375 45.3%	195 23.6%	124 15.0%	59 7.1%	41 5.0%	33 4.0%	827

Cortical Flakes

Tables 9 and 10 show the approximate extent of cortex remaining on the dorsal face of utilised flakes and blades and of the remainder respectively. As might be expected, wholly cortical or 'primary' flakes and largely cortical flakes were not normally selected for use but amount to 9% of the waste component. There is, however, no evidence of special preference for non-cortical (tertiary) flakes in the utilised fraction.

The proportion of non-cortical flakes is marginally lower than on some other sites such as Windmill Hill (52·1%; Smith 1965, 87) or Storey's Bar, Fengate (56·4%; Pryor 1978, 143) and much lower than at Grimes Graves, (53·8-70·7%; Saville 1981a, 40) but this observation, if significant, is entirely consistent with the evidently limited potential of the cores.

Core Rejuvenation and Core Trimming Flakes

Thirty one (1·3%) of all unretouched flakes in the combined assemblage are core rejuvenation or core trimming flakes, and eight retouched flakes can also be described as such.

The eight retouched pieces are all modified by minimal secondary flaking and comprise two borers, one unclassified scraper, one 'nosed' scraper, one denticulate and three miscellaneous retouched flakes.

The total is too small for any possible pattern in the spatial or chronological distribution to be apparent.

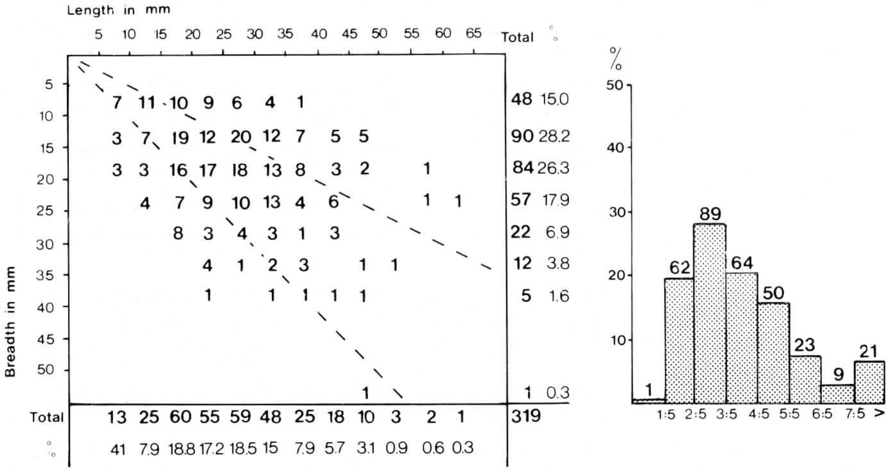
Metrical Analysis

Bivariate frequency distributions of the dimensions of intact flakes and blades are given in the tables in Figs 35 and 36. In these the upper diagonals are an approximate demarcation of blades, and the lower diagonals a demarcation of broad flakes. Bar charts illustrating breadth:length ratios according to the conventional intervals are included to facilitate comparison with other published assemblages. In these, blades are defined as having a breadth:length ratio of 2:5 or less.

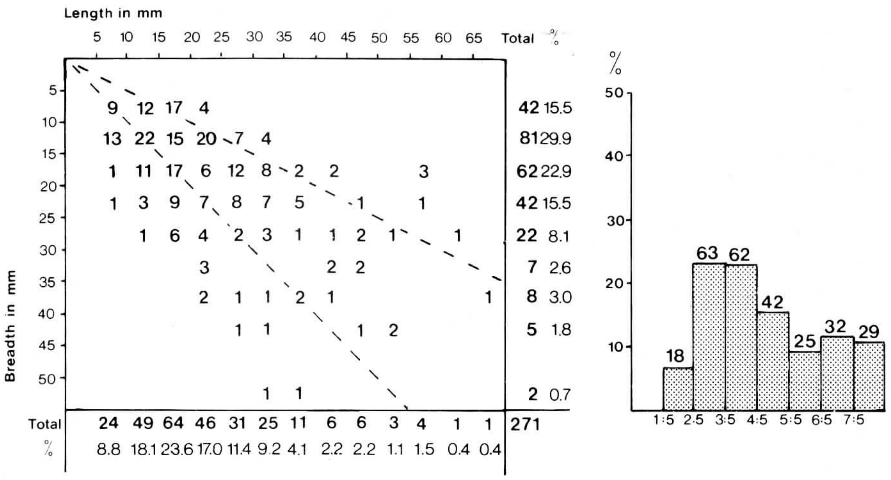
Over 50% of both utilised and other flakes and blades are between 10mm and 20mm in breadth and between 10mm and 30mm in length and rarely exceed a breadth of 40mm or a length of 50mm. This is typical of flints from sites in the Northampton area.

The distribution of dimensions in the utilised fraction differs sufficiently from that of the sample as a whole to suggest a preference for larger pieces, but it is important to note that a considerable number of very small flakes also show definite signs of use-wear.

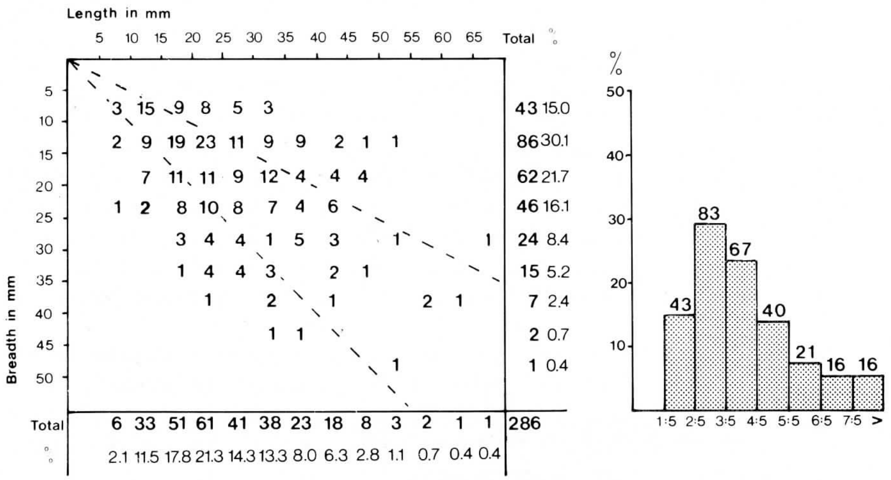
Phases II–V



Phases VIII (interior), IX



Phases VI–VIII (ditches)



Subsoil surface sample

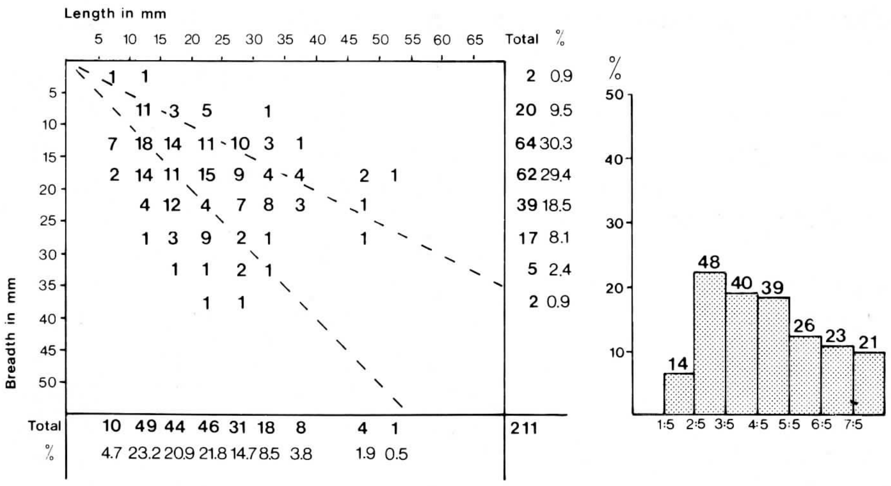
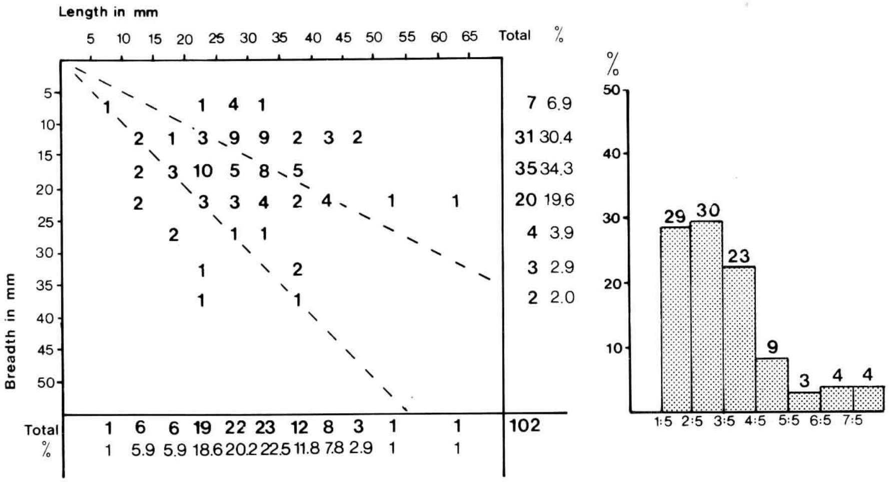
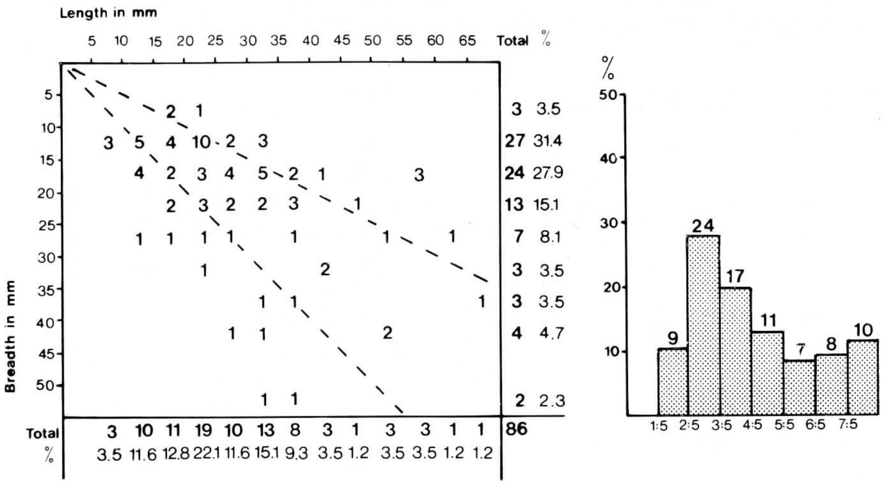


Fig 35 *Metrical analysis of flint flakes*

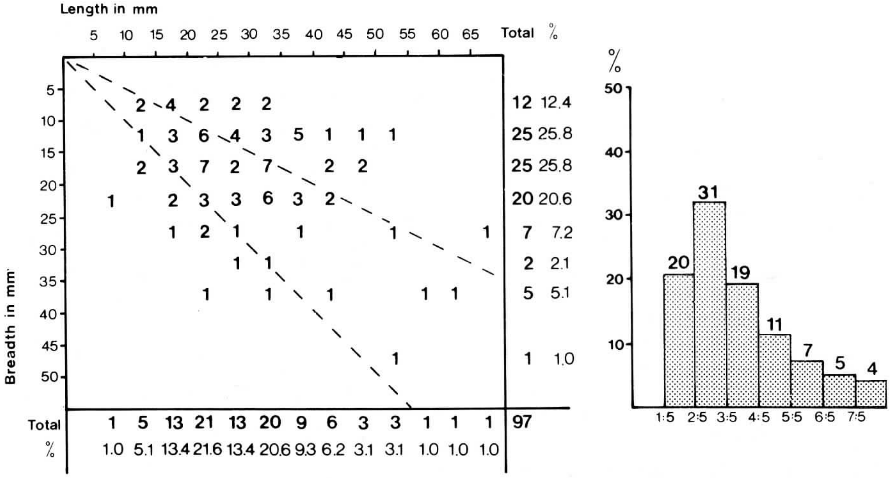
Phases II–V



Phases VIII (interior), IX



Phases VI–VIII (ditches)



Serrated flakes

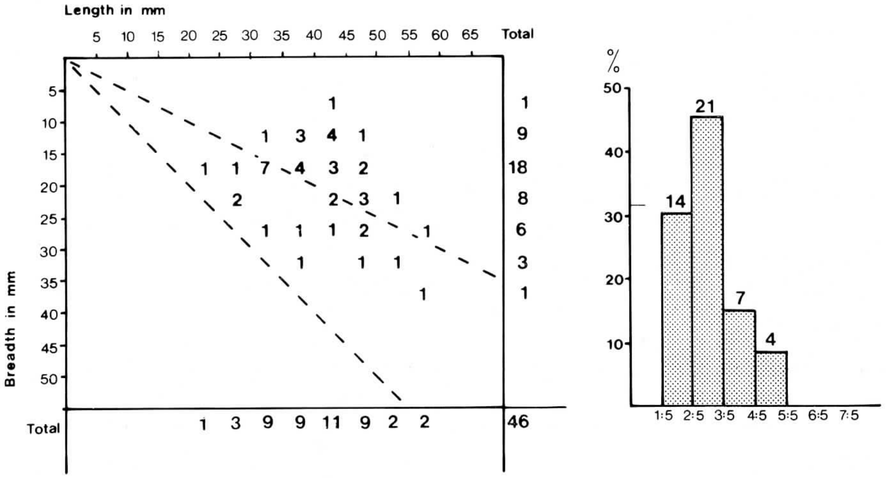


Fig 36 *Metrical analysis of utilised flint flakes*

The analysis of breadth:length ratios shows a distinct and consistent decrease in the proportion of blades present in Phases VIII/IX, accompanied by a corresponding shift towards the use of broader flakes. This shift is apparent even in subdivisions of the larger sample groups and even though the effect may be masked to some extent by the persistence of residual material. The trend is even more clear when the blade element is defined on the basis of a 1:2 breadth:length ratio. Blades then form 33·2% of the total, and 45·1% of all intact utilised pieces in phases II-V, declining to 16·2% of the total or 22·1% of utilised pieces in phases VIII/IX.

The higher incidence of broad flakes in the later neolithic sub-sample is related in part to an increase in the numbers of very small flakes, something which may be significant in itself; but even if pieces under 20mm in length are excluded from the analysis the same consistent trend is discernible, as may be seen in the bivariate distribution plots. It is of special interest, therefore, that the profile of the sample from the subsoil surface matches that of the group from later neolithic features and layers more closely than any other; in fact the decline in the proportion of blades and the corresponding increase in the proportion of broad flakes is even more pronounced in this, whether or not small flakes

TABLE 11: Retouched Implements

	Scrapers	Serrated Flakes	Saws	Denticulates	Notched Flakes	Misc. Knives	Plano-Convex Knife	Sickle?	'Laurel Leaf'	Leaf Arrowheads	Transverse Arrowheads	Triangular Arrowheads	Tanged Arrowheads	Borers/Piercers	'Spurred' Flakes	Burins	Misc. Retouched	'Fabicators'	Microliths	TOTAL Implements	Flakes from Pol. Axes
Phases II-V(Ditches)	29 24.2%	28 23.4%		1 0.8%	1 0.8%	3 2.5%		1 0.8%		3 2.5%				8 6.7%	1 0.8%	1 0.8%	40 33.4%		4 3.3%	120	3
Phases VI-VIII (Ditches)	38 35.8%	15* 14.2%	1 0.9%		6 5.7%	2 1.9%				2 1.9%		1 0.9%		9* 8.5%			31 29.2%		2 1.9%	106	3
Neolithic Ditches – Phase Uncertain	15* 26.8%	17 30.4%		1 1.8%	1 1.8%	2* 3.6%			1 1.8%	1 1.8%						1 1.8%	18 32.1%			56	
Phases VIII (Interior)& IX	25 34.2%	13 17.8%	1 1.4%	2 2.7%	3 4.1%	1 1.4%	1 1.4%				1 1.4%		1 1.4%	5 6.8%		1 1.4%	18 24.6%		1 1.4%	73	4
Subsoil Surface Areas A7, B6, B7, C7, C8	45* 30.2%	6 4.0%	2 1.3%		24* 16.1%	2 1.3%				4 2.7%	1 0.7%		2 1.3%	8 5.4%	3 2.0%	1 0.7%	46 30.9%	2 1.3%	4 2.7%	149	1
Undated Features	5																5		1	11	
Phase XI	24 46.2%	4 7.7%			3 5.8%	1 1.9%				2 3.8%	3 5.8%			4 7.7%			9 17.3%		2 3.8%	52	2
TOTAL: CLASSIFIED FORMS	181* 31.9%	83* 14.6%	4 0.7%	4 0.7%	38* 6.7%	11* 1.9%	1 0.2%	1 0.2%	1 0.2%	12 2.1%	5 0.9%	1 0.2%	3 0.5%	34* 6.0%	4 0.7%	4 0.7%	167 29.4%	2 0.4%	14 2.5%	567	13

** Implement with Dual Classification included (For this reason the sum of percentage figures for some groups is more than 100.)*

are included in the reckoning.

The analysis of flakes from iron age features (Phase XI) is included for comparison (Fig 37), on the assumption that these derive largely from material formerly on the neolithic ground surface and that the distribution in two widely separate parts of the site provides a representative sample of the original surface scatter as a whole.

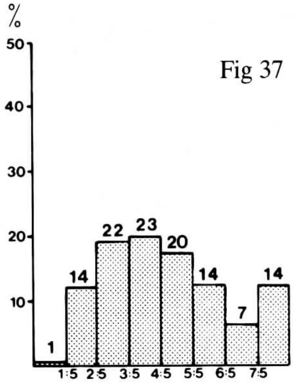


Fig 37

Metrical analysis of flint flakes from Phase IX contexts

Retouched Implements

The composition of the retouched component of the assemblage is given in Table 11. Scrapers are the most numerous class overall, although serrated flakes are equally common in the earlier phases. Other types tend to be numerically insignificant, but some are of interest because of a restricted spatial or chronological distribution. The incidence of implement types in separate ditch lengths on the north west side of the inner enclosure, where finds were most numerous, is shown in Table 12.

Scrapers

The incidence of scrapers, listed according to type, is presented in Table 13. The classification used is purely descriptive and a modification of that first used on the Hurst Fen assemblage (Clark et al 1960, 217), drawing also on more recent reports (eg Manby 1974: Saville 1981a).

End Scrapers
(Fig 42: F12-F23)
Flakes with convex scraper edge worked on one, usually the distal end.

This is by far the commonest variety, as it is on all neolithic sites in England, and the proportion remains at a roughly constant level in all phases. Most are worked on short flakes, many of them cortical, but a few are on elongated flakes or large blades (F18, F22).

Extended end ('Horseshoe') scrapers
(Fig 43: F24-F29)
Flakes with a scraper edge worked around one end and along the greater part of both sides; generally symmetrical in form; sometimes classed with end scrapers.

These constitute the second most frequently occurring type on the site. They appear to be proportionately more numerous in the earlier phase, but since the total number is not large this does not necessarily demonstrate a significant trend.

Double End Scrapers
(Fig 43: F30)
Flakes with separate scraper edges worked on the distal and bulbar ends.

Of the four examples in the sample studied, two are on blades.

Disc Scrapers
(Fig 43: F31-F33)
Flakes with a scraper edge worked around the entire circumference.

One of these (F31) may be a modified disc core, since there is multi-directional flaking on both faces.

TABLE 12: Incidence of Retouched Implement Types in Ditch Segments NW of Inner Enclosure

	Scrapers	Serrated Flakes	Denticulates	Knives	Laurel Leaf	Arrowheads (Leaf)	Piercers	Burins	Misc. Retouched	Microliths	TOTAL
162A-D/165A-D(5) (Phases II-V)	9	14	—	2	—	2	2	1	13	3	46
162E, F/165D(6-9) (Phases VII-VIII)	10	8	—	1	—	—	4	—	10	—	33
160, 161 (Phase V)	—	1	—	—	—	—	1	—	4	—	6
159A & B (Phases V, VII?)	4	1	—	—	—	—	1	—	—	1	7
158A & B (Phases V, VII?)	—	3	1	—	—	1	—	—	2	—	7
163A-D (Phases III-VII)	3	6	—	—	—	1	3	1	8	—	22
166A-D/177 (Phases III-VII)	1	6	—	1	1	—	3	—	8	—	20
TOTAL	27 19.2%	39 27.2%	1 0.7%	4 2.8%	1 0.7%	4 2.8%	14 9.9%	2 1.4%	45 31.9%	4 2.8%	141

Side/End Scrapers
(Fig 43: F34-F38)
Flakes with a scraper edge worked around one end and down one side.

Like the extended end variety, these are sometimes classed with end scrapers. Those from Briar Hill tend to be similar in the range of size and shape to the more regular forms of end scraper, and have the same general chronological and spatial distribution. One (F37) is worked on a flake from a polished implement.

Side Scrapers
(Fig 43: F39, F40)
Flakes with a scraper edge worked on one side only. They are usually somewhat irregular in shape.

A total of eighteen was recorded from the whole site including the thirteen in the selected groups. The distribution is confined almost entirely to the southern half of the enclosure, in the general area of the later neolithic features (Fig 39). None was stratified in a context known to belong to the earlier phases of the site: the five specimens associated with neolithic ditches were either in phase IX deposits or from the uppermost level of infills which cannot certainly be dated earlier than phase VIII. Their occurrence on other sites suggests that, even if not exclusive to later neolithic contexts, the type is at any rate absolutely rare except in such contexts. At Broome Heath side scrapers constituted between 3% and 7% of all scrapers and were not found in the earliest layers (Wainwright 1972, 52ff). At Windmill Hill only 7% of scrapers in the lower ditch fills were of this kind (Smith 1965, 95) and at Hurst Fen only 3% of the total

TABLE 13: Classified Scrapers

	End	Extended End	Double End	Disc	Side/End	Side	Double Side	'Nosed'	'Hollow'	Denticulate	Unclassified Flake	Broken Flake	On Chunk	TOTAL
Phase II-V (Ditches)	11	4	2	2	4	—	—	1	—	—	5	—	—	29
Phases VI-VIII (Ditches)	13	6	—	2	4	—	—	1	—	—	4	5	3	38
Neolithic Ditches – Phase Uncertain	3	2	—	—	—	3	—	1	—	—	1	2	3	15
TOTAL from Neolithic Ditches	27 32.9%	12 14.6%	2 2.4%	4 4.9%	8 9.8%	3 3.7%	—	3 3.7%	—	—	10 12.2%	7 8.5%	6 7.8	82
Phases VIII (Interior)& IX	8	4	1	1	3	2	—	—	1	1	2	1	1	25
Subsoil Surface Areas A7, B6, B7, C7, C8	13	1	1	1	2	3	—	2	2	1	5	11	3	45
TOTAL Later Neolithic and Subsoil Surface	21 30.0%	5 7.1%	2 2.9%	2 2.9%	5 7.1%	5 7.1%	—	2 2.9%	3 4.3%	2 2.9%	7 10.0%	12 17.1%	4 5.7%	70
Phase XI	8	1		1	3	2	1	1	—	1	1	2	3	24
TOTAL All Phases	56 31.8%	18 10.2%	4 2.3%	7 4.0%	16 9.1%	10 5.7%	1 0.6%	6 8.4%	3 1.7%	3 1.7%	18 10.2%	21 11.9%	13 7.4%	176

(Clark et al 1960, 217). The type is equally rare in some later neolithic contexts, as Saville has pointed out (1981a, 58). On the other hand, at the later neolithic sites of Durrington Walls and Mount Pleasant 23% and 20% of the respective totals were side scrapers (Wainright and Longworth 1971, 164. Wainwright 1979, 145ff).

This trend appears to be contradicted by figures published for an earlier neolithic site at Bury Hill, Sussex, where the numbers of side and end scrapers are given as equal (Drewett 1981, 78). These are the only two classifications used, however, and the definitions of the terms are not made entirely clear.

Double Side Scraper

Flakes with a separate scraper edge worked on each side.

Only one of these was recorded.

Nosed Scrapers

(Fig 43: F41, F42)

A narrow, bluntly pointed form of end scraper.

One of the four implements so classified is worked on the end of a knife (F42).

Hollow Scrapers

(Fig 43: F43)

Flakes with a broad, concave scraping edge.

Of the three in the sample, none is from a context earlier than phase VIII.

Denticulate Scrapers

(Fig 43: F44)

Pieces with a coarsely indented scraping edge fashioned by the removal of a series of deep flakes.

None of the three examples in the groups studied is from an earlier neolithic deposit. The type was noted at Grimes Graves where it appeared to have specifically bronze age affinities (Saville 1981a, 21).

Unclassified Flake Scrapers

(Fig 43: F45, F46)

Irregular flake scrapers, usually with minimal retouch. Saville draws attention to these in the Grimes Graves assemblage, terming them 'perfunctory scrapers' (ibid 57). On Briar Hill they were relatively numerous.

Broken Flake Scrapers

Flake scrapers too fragmentary for accurate classification.

Scrapers on Chunks

Scrapers worked on irregular, non-bulbar pieces including thermal blanks.

Scrapers – Metrical Analysis

An analysis of length, breadth, thickness and the breadth:length ratio of intact scrapers, expressed in the form of bar charts, is presented in Fig 38. The samples are too small to establish any definite trends as between the earlier and later stratified groups, but it may be noted that the proportion of scrapers on blades and on flakes with a breadth:length ratio of 3:5 or less is smaller in the later group which also includes only three specimens with a breadth in excess of 40mm or a length in excess of 50mm.

Similar analyses have demonstrated a marked trend towards smaller scrapers in later neolithic/early bronze age industries associated specifically with Beaker or Beaker-derived pottery (Clark et al 1960, 219: Wainwright 1972, 61f.) but this does not seem to be true of later neolithic industries in general. At the West Kennet later neolithic occupation site, for example, the mean dimensions of scrapers were not noticeably smaller than in the earlier neolithic levels at Windmill Hill, nearby (Smith ibid).

The scrapers from Briar Hill are anomalous in that the majority of them, even from earlier contexts, are comparatively small, with mean dimensions no larger than in most published Beaker assemblages. The closest parallels are from sites in the Northampton area such as Brixworth (Martin and Hall 1980, 10) or Duston (RCHM Northamptonshire Vol 5, forthcoming).

Serrated Flakes

(Fig 43: F47-F53)

Flakes with a finely serrated edge produced by deliberate retouch are the second most common implement type on the site and, as has been noted already, are particularly numerous in Phases II-V. The groups studied include all but four of the total number found, of which over 83% were stratified in neolithic features. The spatial distribution (Fig 40) is strongly biased towards the ditch segments on the north west side of the inner enclosure where in some contexts they outnumbered scrapers (Table 12). Metrical analysis (Fig 36) shows that blades or blade-like flakes were preferred for their manufacture, as was demonstrated also at Windmill Hill (Smith 1965, 90f).

These implements are by no means exclusively an earlier neolithic type (cf Manby 1974, 90) but, even though the incidence varies greatly and on some sites such as Broome Heath and Carn Brea they were absent almost entirely (Wainwright 1972, 68; Saville 1981b, 102f), they do seem generally to be more common in earlier assemblages. At Windmill Hill (Smith 1965, 91), Whitehawk (Curwen 1954, 81) and Hurst Fen (Clark et al 1960, 214), for example, they were more numerous than scrapers.

Saws

(Fig 44: F54)

Saws are defined by Smith (1965, 108) as flakes more coarsely denticulated than serrated flakes, with teeth 3-5mm apart. She and Clark (1933, 274) regard them as a later neolithic type, and neither of the two stratified examples from Briar Hill is demonstrably earlier than Phase VIII.

Denticulates

(Fig 44: F55)

These are pieces with edges even more coarsely denticulated or notched than saws. Functionally they are assumed to relate to notched flakes (Wainwright & Longworth 1971, 176) although some could equally have been used for piercing skins or leather. They seem usually to be associated with later neolithic industries and, of the four found on Briar Hill, the two from contexts earlier than phase VIII are atypical.

Notched Implements

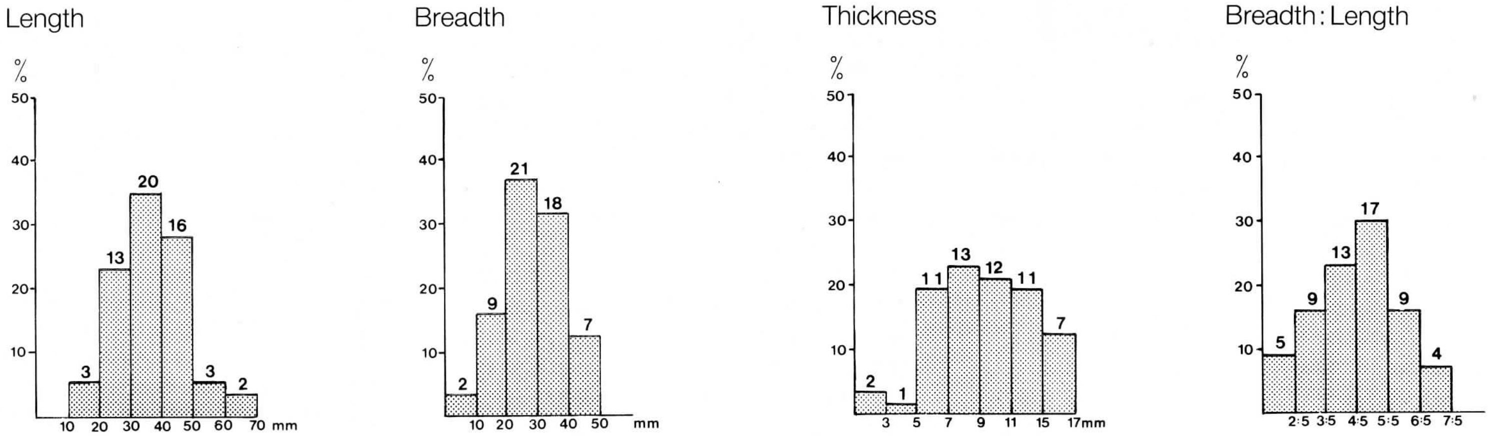
(Fig 44: F56-F61)

These are defined as flakes with one or more pronounced semi-circular or crescentic notches made by abrupt retouch involving the deliberate detachment of several small flakes from the edge. They were presumably used in the fashion of spoke-shaves. The type appears to be most common in, but not exclusive to, later neolithic contexts (eg Arreton Down, Alexander and Ozanne P C and A 1960, 294; West Kennet, Smith 1965, 237f). On Briar Hill their distribution was restricted very largely to the south eastern part of the enclosure, 73% of those in the group studied being from the subsoil surface in that area or in the fill of later neolithic features (Fig 41). Only one was stratified in a context earlier than phase VII, and this was in the secondary infill of 149C, immediately behind the upper edge of a phase VII recut (147C) where it could easily have been intrusive.

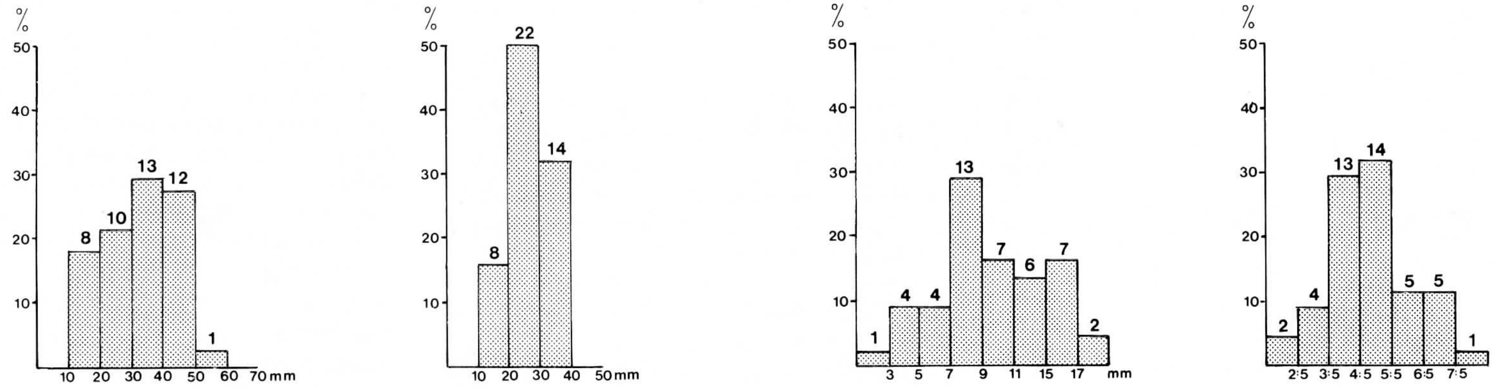
Knives

(Fig 44: F62-67)

Many of the implements described as knives exhibit minimal retouch and are not susceptible to more precise classification. One (F66) is blunted along the right edge and, on the left shows heavy, regular microflaking of a kind consistent with use for cutting. Others have flat, scalar retouch on part of the cutting edge and, frequently, similar signs of use-wear (F65, F67).



Neolithic Ditches: Phases II–VIII



Phases VIII (interior), IX and subsoil surface sample

Fig 38 *Metrical analysis of scrapers*

Forms with more extensive secondary working include one with blunted back and flat, invasive retouch on a corticated blank (F64), and at least one plano-convex knife (F62). There is a possible second example of the latter type in the dual-function or re-worked implement F42. None of these more elaborate pieces is from an earlier neolithic context and one (F62) was stratified with Beaker sherds.

Sickle?

(Fig 44: F68)

A calcined fragment of an implement with bifacial pressure flaking could be part of a small single-piece sickle blade or perhaps from a large leaf-shaped projectile point.

Laurel Leaf

(Fig 44: F69)

Only one bifacially worked 'laurel leaf' was found and the edge-wear on this suggests use as a knife rather than as a projectile point.

Leaf Arrowheads

(Fig 44: F70-76)

In addition to the twelve complete and fragmentary leaf arrowheads in the main sample another six were found, including two (F75, F76) excavated together in 122 during the trial trenching of 1973, and what appears to be an unfinished specimen from the subsoil surface in area D7 (F70).

They range in length from 18mm to 42mm and include both squat and slender forms and double and single points – types 3B, 3C and 4A-C in Green's classification (1980, 21). Kite-shaped and ogival forms were not present.

Transverse Arrowheads

(Fig 44: F77-F81)

A single very small *petit-tranchet* arrowhead (F80) may be mesolithic.

The four chisel arrowheads comprise two examples of characteristic later neolithic type, struck from prepared cores (F77, F79) and two rather more crudely made specimens. The first-mentioned was stratified in a later neolithic pit (317B) and the remainder were from iron age features and the subsoil surface in Area A7. The type has predominantly later neolithic asssociations (Wainwright & Longworth 1971, 259) although the simpler forms are known on sites as early as 2600 bc (Green 1980, 111).

Triangular Arrowheads

(Fig 44: F82)

A broken triangular (or possibly hollow-based) arrowhead was found in the upper fill of a final recut ditch segment (26C(2)) and may thus be assigned to Phase VIII or IX. Known dates associated with the type elsewhere are of the second millennium bc (Green 1980, 142).

Tanged Arrowheads

(Fig 44: 83-84)

Three tanged arrowheads of Green's Sutton 'a' type (1980, 117) were recorded in the southern part of the inner enclosure. Two were from the subsoil surface (F83) and the third, very small one from the fill of the foundation slot of the 'Grooved ware' structure 145. A fourth, which has vestigial barbs, (F84) is of particular interest because of its association with the cremation burial 240 and with a C14 date of 1750 bc±150. The date cannot be accepted as absolutely certain but both it and the association are compatible with the known life-span of the type. According to Green, these are the predominant Beaker/early bronze age type in the Midlands (ibid 119, Fig 49).

Borers/Piercers

(Fig 45: F85-F90)

According to the definitions used in the Hurst Fen report (Clark et al 1960, 223), thirteen of the thirty one borers may be termed 'awls', which is to say, the point is formed by the removal of secondary flakes from more than one direction (eg F90). The remainder, which have flakes removed from one direction only, are to be classed as 'piercers' (eg F88). On the majority of both types the retouch is minimal, serving merely to enhance an existing point or projection (F89) and the point itself is generally short. One (F86) is worked on the bulbar end of a serrated flake. There is a single example (F90) of the more elaborately retouched form which seems to belong, typically, to later neolithic industries (Smith 1965, 108). It is, appropriately, from a phase IX context.

'Spurred' Implements

(Fig 45: F91-F93)

'Spurred' implements, as a variant form of borer, were first defined by Smith (1965, 105) in the analysis of later neolithic flints from Windmill Hill and West Kennet. Three of the sub-type with a short point defined by two notches were found on the subsoil surface on the south side of the Briar Hill enclosure (F91, F92). A fourth, of the variety with a projection on a scraper-like edge (F93), was found with earlier neolithic bowl pottery in a context stratigraphically no later than phase V. This last association is anomalous in that all other reported examples have been from later neolithic sites (Healy 1980).

'Fabricators'

(Fig 45: F94, F95)

Two 'fabricators' were found on the subsoil surface. One (F95) is bifacially worked and of bi-convex section, the other (F94) of plano-convex section.

Microliths

(Fig 45: F96-F105)

Eighteen microliths were found in all, only fourteen of which fall within the samples selected for study. Since to some extent they constitute a discrete element within the assemblage and are presumably residual in neolithic contexts, the entire group is described below, following the terminology employed by Saville in his discussion of the mesolithic assemblage from Honey Hill, Elkington, Northamptonshire (Saville 1981c, 2).

Type	No.	Ill.
Obliquely blunted points (plain)	1	F96
Obliquely blunted points with ancillary retouch	1	F97
Edge-blunted points with ancillary retouch	3	F98 F99
Edge-blunted point (broken)	1	F100
Edge-blunted blade	1	F101
Geometric triangles	3	F102
Tanged blade	1	F103
Miscellaneous	7	F104 F105

The microliths are closely comparable in range and type to microliths from Chalk Lane, Northampton, 2km from Briar Hill (Bamford 1981) and from Duston, 1·5km distant (RCHM forthcoming). Edge-blunted and obliquely blunted forms are predominant in earlier mesolithic industries in Britain (Mellars 1974), but some of the pieces here, including the small point (F98) and the geometric triangles (F102) are forms more typical of the later part of the mesolithic period. Two pieces (eg F104) exhibit moderately heavy abrasion on the edge or point, in a fashion which indicates possible re-use.

Burins

(Fig 45: F106, F107)

Four burins or burin-like pieces were recorded. Burin spalls have been detached from the bulbar end of three of them and from the distal end of the other. Two show use wear on the burin point (eg F106). Burins are more common in mesolithic industries but also occur in unambiguous neolithic associations (eg Hurst Fen. Clark et al 1960, 223 Fig 16).

Miscellaneous Retouched

(Fig 45: F108-F115)

This heading covers all implements which bear some evidence of secondary flaking yet cannot readily be grouped according to standard morphological or functional characteristics. They constitute up to a third of all retouched pieces throughout the neolithic occupation of the site.

Some may be compared with the less specific types, variously described, which recur in neolithic assemblages. A few, for example, are of the type termed 'cutting flakes' by Saville (1981a, 10; Figs 86, 87). They are relatively large, sharp-edged flakes, modified by limited retouch and with moderate to heavy edge-wear consistent with use for cutting (eg F109, F110). Comparable but smaller flakes (eg F115) may have been mounted in composite tools. Others are thin flakes and blades with edges blunted by small, even retouch (eg F108, F112) as noted at Hurst Fen and Broome Heath (Wainwright 1972, 56f, 68) and Carn Brea (Saville 1981b, 140). Other flakes have similarly regular but flatter flaking (eg F111, F114).

On many pieces the secondary flaking is minimal and may involve no more than the removal of a small irregularity or projection (F113). In such instances the distinction between deliberate retouch and incidental flaking or heavy use-damage is not always clear-cut (Keeley 1980, 26f). Size and uniformity of flake scars and the location of the flaking is considered by some to be a fairly reliable guide in deciding the question (Tringham et al 1974, 181), although potential areas of ambiguity have to be acknowledged. Nevertheless, there is a possibility that the number of pieces included here in this category is an over-estimate.

Fragments of Polished Implements

There are thirteen flakes in the combined sample which retain part of a ground and polished surface on the dorsal face. At least three of them have a thickness and curvature of profile which suggests that they came from flint axes, although no complete examples of the type were found on the site. Some of these flakes have been utilised, and two (F37, F111) have been retouched. None is from a context earlier than Phase V.

Utilization of Implements

(The methods used in identifying and analysing use-wear on the Briar Hill flints are described in microfiche Appendix 5:4).

Use Wear on Un-Retouched Flakes and Blades

Between 21% and 32% of unretouched flakes and blades, or 24% of the entire sample studied, have been classed as utilised on the evidence of edge-wear. These figures must, however, be regarded as approximations at best and are almost certainly an under-estimate. The low magnifications used in the examination of the flakes can reveal or clarify certain types of edge damage including microflaking and the more developed forms of polish and abrasive wear, but recent experimental work has shown that much higher magnifications and more elaborate equipment may be needed to detect the full range of microscopic surface alterations which enable exact identification of utilised pieces and interpretation of both the mode of use and the material on which it was used (Keeley and Newcomer 1977; Keeley 1980). It has seemed advisable here, therefore, to err on the side of caution when attempting to distinguish between use-wear and other forms of damage, and it must be assumed that the select sample of utilised flakes is biased by the exclusion of pieces whose function did not tend to the formation of obvious wear patterns.

Use-Wear on Retouched Implements

The difficulty of identifying edge-damage which is the result of use is compounded when the edge in question has been retouched, but some types of polish are unmistakable.

Types of Use-Wear

The major types of use-wear identified and their incidence and interpretation may be summarised as follows.

Gloss

– On Unretouched flakes and blades

Traces of a distinctive, highly reflective polish were observed on approximately 11% of all unretouched utilised flakes and blades, although this was often barely visible except under magnification.

A total of twenty two utilised flakes and blades exhibit a band of bright, smooth lustre *c* 0·25mm deep along one, or more rarely both faces of the working edge. Experiments in replicating edge-wear on flint flakes have demonstrated that different types of bright polish, readily distinguishable at high magnifications, form as a result of cutting grasses and cereals and of working wood (Curwen 1930, 1935; Keeley 1980, 35f, Pl 18-27, 60f, Pl 54-56).

At the low magnifications used here identification may not be as certain, but the appearance and the distribution of the polish on these pieces is consistent with use on wood, as is the microflaking (see below) which frequently accompanies it. Cereal polish tends to be brighter, more extensive and to have a more 'fluid' appearance (Keeley ibid, 61) and there is only one possible example of this from Briar Hill.

On other specimens a similarly high gloss is present in the form of spots or microscopic speckles on one surface, usually but not always near the utilised edge. Occasionally it takes the form of striae parallel, oblique or perpendicular to the edge. Where it is not associated with the edge it might be explicable as the result of friction on a wooden mounting or haft, or of accidental abrasion against some other silicaceous material (Keeley ibid, 28). Certainly not all of it is necessarily the direct result of utilisation.

– On Retouched Implements

Traces, at least, of the bright lustre described above were observed on the edge of 35·8% of serrated flakes and blades in the samples, and a slightly duller sheen on 2·5%. This was confined invariably to a very narrow band on the teeth of the implement and was often accompanied by microflaking on part of the edge. The conclusion is that these, like the unretouched flakes with similar wear were probably used in wood-working.

The specific association of this type of polish with such implements has been noted many times. 35% of specimens found at Whitehawk and 37% of those from the Trundle displayed it (Curwen 1954, 81, 86f) and at Windmill Hill the proportion was 75% (Smith 1965, 91).

Abrasion

– On Flakes and Blades

Another easily recognized form of wear, often clearly visible to the naked eye, consists of the matt polish and rounding of the edge by abrasion. On approximately 20% of all utilised flakes this was present to a microscopic degree. A further 7-8% were moderately or heavily worn, sometimes to such an extent that the edge was completely blunted. A point of particular interest is that the spatial distribution of flakes exhibiting this type of polish shows a noticeable concentration in two particular contexts. A remarkable 21% of all flakes with moderately to heavily abraded edges came from in and around a single deposit, 248B(3), and the majority of those from stratified deposits are dated to Phase VII or later. The incidence of flakes with edges only slightly abraded, on the other hand, was above average in ditch segments 165C and 165D (Phases IV/V) in which they formed 31% of the utilised fraction.

In a different category are the 5% of utilised flakes which show moderate or heavy abrasion on the bulbar end only, sometimes accompanied by signs of crushing or bruising. These were more numerous in earlier neolithic deposits, and more than half of the total was found in the ditch segments on the north side of the enclosure between features 35 and 163.

– On Retouched Implements

Nearly 15% of scrapers in the groups studied and 23% of those stratified in phase VII/VIII contexts had edges smoothed and rounded to a marked extent. These include five of the nine examples from 248B(3) and 248C(5). Three core scrapers show similar wear.

Five serrated flakes show moderate to heavy abrasion of the non-serrated edge and on another the serrated edge is almost obliterated by it. It occurs also on four of the saws and denticulates, on three flake knives and the point of one borer, on the single laurel leaf from the site, on a burin (F107) and on a microlithic backed point. Both fabricators exhibited similar wear, heavy on both ends and the lateral edges of F95, and to a lesser degree on the ventral face at one end of F94. Among the flints likewise abraded but not included in the main samples were three more borers and another microlithic obliquely blunted point.

Smoothing of the bulbar end was seen on two serrated flakes and a borer.

Ethnographic parallels and experiment show that such attrition is characteristically produced by working dry hides or leather. Similar wear has been noted on Eskimo scrapers used for this purpose (Hayden 1979), and Keeley (1980, 49ff, P14, 39, 40; Keeley and Newcomer 1977, 42) has replicated the effect in experiments involving cutting, scraping and piercing such material. The presence of this type of wear on microlithic points suggest a possible use (or re-use) as piercing implements on hides. Abrasive wear on 'fabricators' has been noted frequently, and, in this case appears identical in kind with that on the flakes and scrapers.

Less easy to explain are the flakes and implements with abrasion of the bulbar end. It seems most likely that the wear in these cases is connected with a method of mounting or holding the flints for use.

Microflaking

– On Flakes and Blades

The majority of flakes bore some edge damage, much of which was random and irregular and clearly accidental in origin. Only patterns of regular microflaking affecting all or a substantial part of an edge were judged to be strongly indicative of use (cf Tringham et al 1974). All flakes classified as utilised, except those whose edges were abraded completely smooth, showed such signs, sometimes accompanied by a barely discernible degree of polish. It has been shown experimentally that the form and size of incidental microscars differ according to the hardness of the material being worked, subject to variables such as the thickness and angle of the flake edge as well as the mode of use. Thus the cutting or scraping of soft materials such as skin or meat results mainly in small or microscopic scars, usually scalar in form, whereas the working of harder materials grading from soft woods to bone and antler tends to produce more extensive damage including larger microscars 2mm or more in width, an increasing proportion of which will be step scars (ie with an abrupt termination) (ibid; Keeley 1980). All types were observed. A rough quantification of their incidence in a select sample of the large stratified groups (microfiche Appendix 5:5) reveals one or two possibly significant variations, notably a percentage of pieces with large step scars in 165C and 165D which is much higher than the mean (27% against 14%).

Individual Finds Groups

Finds groups from individual contexts which are of intrinsic interest are detailed below.

51B (Phase VII)

1. Forty seven thin flakes were found tightly packed together in a pocket in the fill. Forty four of them were of identical brown translucent flint with a thick, orange-stained cortex, as were two more found close by. Several of them fit together and two fit on to a core found 30cm away. Thirty one are complete.

They range from 15mm-40mm in length and from 5mm-30mm in breadth with a peak between 20mm-30mm length and 5mm-20mm breadth.

Breadth/Length Analysis of Intact Flakes

1:5-2:5	9
2:5-3:5	11
3:5-4:5	6
4:5-5:5	2
>5:5	3
	31

If blades are defined as having a breadth:length ratio of 1:2, fourteen are blades or blade-like in proportion. Eight are non-cortical and on twenty one the cortex covers less than 50% of the dorsal face. There are no wholly cortical (primary) flakes.

They include:

One serrated blade (F48 – possibly not from the core).

Two flakes and one small blade with minimal retouch and use-wear.

Nineteen flakes and blades with edge-wear indicative of use.

The circumstances of the find suggest that most if not all of the pieces were confined originally in a bag or container and the presence of the serrated blade and a number of utilised and probably utilised flakes suggest interpretation as a basic 'tool kit', on the lines of a similar cache found at High Peak in Devon (Pollard 1966, 50).

2. In the same fill layer but more dispersed there were four large, non-bulbar fragments which fit together to form half of a small nodule. The largest has been trimmed steeply at one end subsequent to the detachment of the other pieces. A second exhibits very heavy abrasive wear on one edge which has been notched subsequently in denticulate fashion, perhaps accidentally.

77C (Phase IV?)

Nine flakes of a distinctive, light grey-brown granular flint were found close together in the secondary, rubbly fill of the ditch segment. Six of these fit together, and all have evidently been struck from a single fractured and weathered nodule. The flakes are comparatively large. All but one are greater than 45mm in length (max 56mm) and 20mm in breadth (max 55mm). One exhibits microscopic edge damage indicative of use.

124E (1) and (6). (Phase VII)

Twenty one flakes and a core, all of identical grey-brown translucent flint with abraded cortex, were distributed over an area at least 2·7m × 1·0m. (This certainly extended into the unexcavated middle 'box' on the south side of the ditch segment). One of the flakes fits to the core and two other pairs of flakes fit together. The intact flakes range in length between 13mm and 37mm and in breadth between 7mm and 27mm with a peak between 10mm-30mm length and 20mm-30mm breadth.

Breadth:Length Ratios of Intact Flakes

1:5-2:5	1
2:5-3:5	2
3:5-4:5	5
4:5-5:5	6
>5:5	3
	17

Five of the flakes are non-cortical, on eight the cortex covers less than 50% of the dorsal face, and one is wholly cortical. Two exhibit possible use-wear on the edge.

This group probably represents flint working debris, perhaps from a chipping floor near the ditch.

248B(3), (Phase VIII)

This group consists of seventy five flints from a single deposit which extended across the secondary infill of the ditch recut to the southern lip of the final recut segment 248C. There is an associated C14 date of 2130 bc±70 (HAR 4066).

Scrapers	6	3 show moderate or heavy abrasive wear on the edge
Serrated flakes	2	
Borer	1	
Misc retouch	2	
Utilised flakes	19	11 show moderate or heavy abrasive wear on the edge
Other flakes	36	
Chunks	5	
Cores	4	

248C (5-8) (Phase VIII/IX)

A similar group to the above consists of forty nine flints from deposits stratigraphically equated with or later than 248B(3).

Scrapers	3	2 show moderate or heavy abrasive wear on the edge
Serrated flakes	2	1 shows moderate or heavy abrasive wear on the edge
Borer	1	
Misc Retouched	1	
Utilised flakes	14	2 show moderate or heavy abrasive wear on the edge
Other flakes	23	
Chunks	1	
Cores	4	

The very high proportion of flakes and implements with a similar form of wear on the edges is strongly suggestive of specialised activity, in this case the preparation and working of hides.

28C(5) (Phase IV)

An end scraper, extended end scraper and disc scraper (F12, F24, F32) were found together as a group in the upper secondary infill of the recut inner ditch segment. The three are of similar size and shape and are carefully made specimens of their respective types.

Discussion

The Assemblage and the Occupation of the Site

The Assemblage of artefactual flint from Briar Hill has, of course, to be studied in relation to occupation of the site over a long chronological span. It cannot be regarded as homogenous except in a very loose sense.

The total is readily sub-divided according to stratigraphic context and chronological phase, but the datum for analysis of the subdivisions has to be the earliest identifiable and presumptively least mixed body of material, which is from ditch segments of Phases II-V, predating the final recutting and with a *terminus ante quem* of *c*2600bc.

The discovery of microliths on the site suggests a mesolithic presence predating the neolithic enclosure. It is unlikely, however, that the residue of mesolithic worked flint within the later assemblages is sufficiently large to influence their general character. The number of purely mesolithic types is relatively small and cores which might belong to a mesolithic industry (eg F5) are extremely rare. A comparison between the metrical and morphological analyses of cores, flakes and blades in the earlier neolithic sample and in the predominantly mesolithic assemblage from Chalk Lane, Northampton respectively (Bamford 1981), discovers only the most general points of similarity.

The presence of a significant post-neolithic flint industry is equally unlikely. The only evidence found for use of the site between 1500 bc and the latter half of the first millennium bc was in the form of bronze age cremations, and purely funerary practices are unlikely to have resulted in any sizeable accumulation of domestic artefacts.

It is probably safe, therefore, to proceed on the assumption that the bulk of flints from Briar Hill are the product of neolithic occupation.

Intra-site Comparisons

In some respects all the five main groups selected for detailed examination are very similar. The distribution of sizes in flakes, cores and implements, including scrapers, remains the same throughout the neolithic period. The general composition also shows little variation. The numbers of retouched pieces, flakes and cores relative to one another are fairly constant except in the subsoil surface sample, in which retouched pieces are more numerous, and in the sample from later neolithic features in the interior (Phase VIII) considered on its own, in which they are much less so. It may thus be concluded that what ever the relationship between these two last-mentioned groups, the one does not derive directly from the other.

In other ways, despite the cumulative presence of earlier material which might be expected to mask the salient characteristics of a later industry, the differences between the bulked finds from earlier contexts and those stratified in later neolithic features are quite sharply defined.

These differences are most clearly stated in the statistical analysis of the breadth:length ratios of intact flakes and blades; the decline in the proportion of blades present in the later group (Phases VIII/IX) and the increase in the relative numbers of broad flakes is unmistakeable. Given this trend, the pronounced similarity between the profile of the sample of flakes from the subsoil surface in the southern half of the inner enclosure and that of the later neolithic group appears significant. By contrast the comparative, if small sample of presumptively residual flints from iron age contexts, which had an overlapping but much less restricted spatial distribution, has produced a flattened, minimally skewed curve indicative of a randomly mixed composition.

The earlier and later neolithic groups may also be distinguished on the basis of the chronological and spatial distribution of certain types of implement. The proportionally greater numbers of serrated flakes in contexts of phase V and earlier, and their distribution biased towards the north side of the inner enclosure looks particularly significant in this regard (Fig 40).

All the stratified finds of such specifically later neolithic types as transverse and tanged arrowheads, saws and the one plano-convex knife are from appropriately late deposits, and the incidence of notched flakes is consonant with the predominantly later neolithic associations of the type elsewhere.

What is even more interesting is the spatial distribution of these types and the probably later neolithic side-scrapers, which is restricted very largely to the south eastern half of the inner enclosure, centred on Area B7 (Figs 39, 41).

This obvious pattern, added to the evidence of the statistical profile of the flakes and blades from the same area, points strongly to one conclusion. The greater density of finds on the subsoil surface of the south eastern part of the neolithic enclosure is, like the coincident cluster of neolithic features, to be associated with occupation of the site in the later part of the third millennium.

Inter Site Comparisons:

General Comments

The observed character of the earlier and later neolithic assemblages may be evaluated more fully within a frame of reference provided by comparanda from other sites, but the simple matching of statistics can be a misleading exercise, as

The Distribution of Side Scrapers

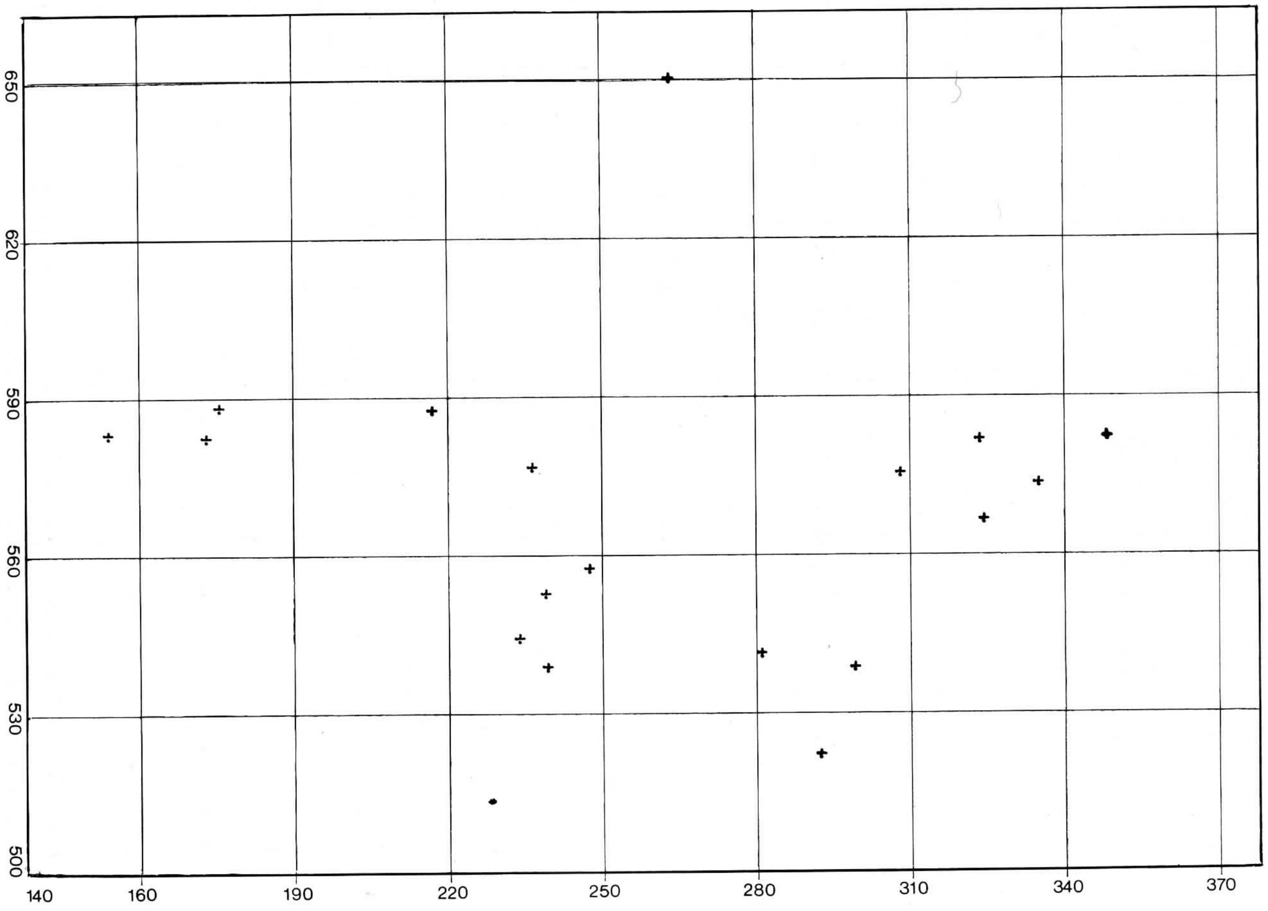


Fig 39 *Computer plot of distribution*

Saville has pointed out (1981a, 42ff). Detailed figures for a number of sites have been collated and are available for reference elsewhere (ibid 42; Healey & Robertson-Mackay 1983) but they need to be used and interpreted with caution.

It is axiomatic that a major factor governing the artefactual record on any site is the nature of the prehistoric occupation; to this could be added the length of occupation and whether it was continuous, intermittent or occasional. The degrees of certainty with which any of these matters can be determined vary widely on different sites. Other circumstances which may qualify the results include those which have affected the survival and recovery of artefacts; disturbance of the site by ploughing, for example, or the method of excavation, especially if this has included the stripping of ploughsoil by machine. The proportion of the whole site excavated or sampled and the volume of stratified deposits have also to be considered.

Finally, there is the question of the statistics themselves. Even a cursory survey of the published reports will show that the form in which the figures are presented is sometimes incompatible or else simply misleading (cf Farley 1979). The sample base and method may differ also, and other variables may be introduced as a consequence of the subjective element in the classificatory systems used. Furthermore, the standard systems of measurement employed may be too insensitive to fulfil the purpose intended (Healey & Robertson-Mackay 1983, 22).

The Metrical and Statistical Evidence

In one respect, the results of the metrical analysis fit a known pattern. The trend towards the production of shorter, broader flakes in later neolithic and early bronze age industries which is demonstrated in the Briar Hill assemblages has been observed repeatedly in Britain, although seldom, if ever, so clearly in the context of a single site. A statistical evaluation of the phenomenon by Pitts (1978) has shown it to be significant.

A closer comparison of breadth:length analyses seems to show that the broad statistical trend masks a considerable fluctuation in the exact proportions of blades to flakes present in the earlier to middle neolithic industries on different sites. Thus, the figure of 19·7% for blades with a breadth:length ratio of 2:5 or less in Briar Hill Phases II-V resembles figures from Bury Hill, Sussex (21%: Drewett 1981, 80) and High Peak, Devon (16·4%: Pollard 1966, 48f), but is higher than that for Carn Brea (6·1%: Saville 1981b, 116), and far lower than the proportion at Hembury (40%: Healey & Robertson-Mackay 1983, 22). Yet, according to the evidence of radiocarbon determinations, all these sites probably date to some time within the period of the earlier occupation of Briar Hill, up to and including the final recutting of the ditch (Phase VII). How this variation should be interpreted is uncertain, although quality of raw material may well have something to do with it. Gravel or surface flint which has been subject to thermal and other stresses is less tractable or predictable in working than mined flint, for example. It is obvious, at least, that the absolute ratio of blades to flakes is not, in itself, a chronological index.

The size of the broad-flake element in the later neolithic assemblages looks to be rather more constant. In Briar Hill Phases VIII/IX the figure (31·7%) matches those for West Kennet (29·7%: Smith 1965, 89f), Grimes Graves (27%-30%: Saville 1981a, 43) or Fengate (26·8%: Pryor 1978, 143), although it is somewhat higher than those published for Durrington Walls and Mount Pleasant (19%-21%: Wainwright & Longworth 1971, 162f; Wainwright 1979, 142, 152). Saville has concluded from his study of the Grimes Graves industry that broad flakes were an intentional, rather than incidental product of later neolithic and early bronze age technology. This is presumably true also of the later neolithic flint working on Briar Hill, although here it is less easy to demonstrate because of the relatively large proportion of small flakes which would naturally tend to have a fairly high breadth:length ratio. There is also no concomitant increase in the number of the multi-platform cores which are particularly suited to manufacture of broad flakes and which predominate on some later neolithic sites (eg West Kennet, Smith 1965, 236).

The absolute size of flakes and cores has never been shown to have any universal chronological or cultural significance and is more likely to have been controlled by resources available. Such is the probable explanation of the fact that on Briar Hill, as on other sites in the Northampton area, large flakes are very rare. The proportion of intact flakes and blades in excess of 40mm long, not more than 12% of the total, is very small indeed by comparison with assemblages from sites on or near the chalk in East Anglia and Southern England, where the corresponding value can be as high as 50%. Equivalent figures for sites on gravel in South Eastern England seem to be intermediate as, for example, 24% at Orsett (Bonsall 1978, 259), or 18% at Staines (Healey & Robertson-Mackay 1983, 9).

The high percentage on Briar Hill of small flakes under 20mm long, especially in later neolithic contexts, is also

The Distribution of Serrated Flakes

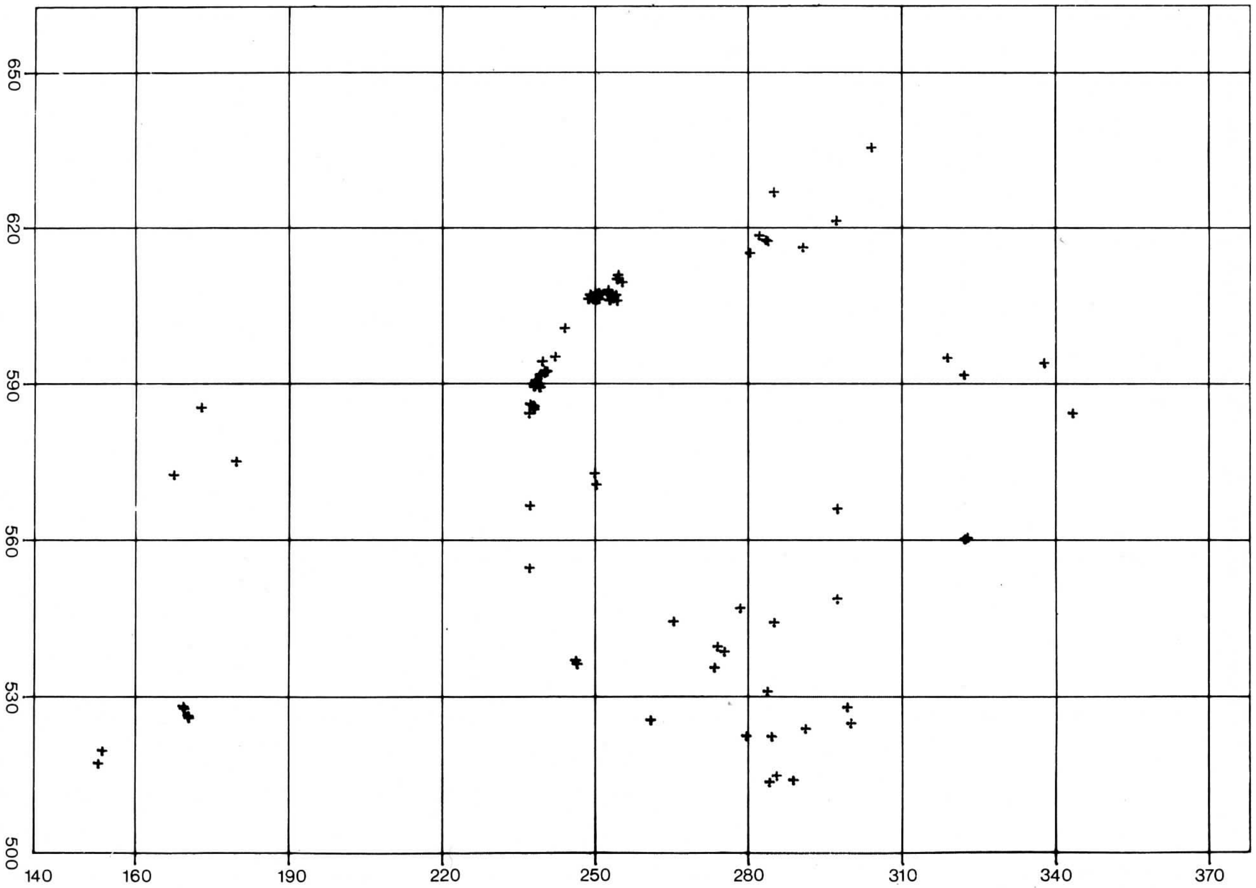


Fig 40 *Computer plot of distribution*

The Distribution of Notched Flakes

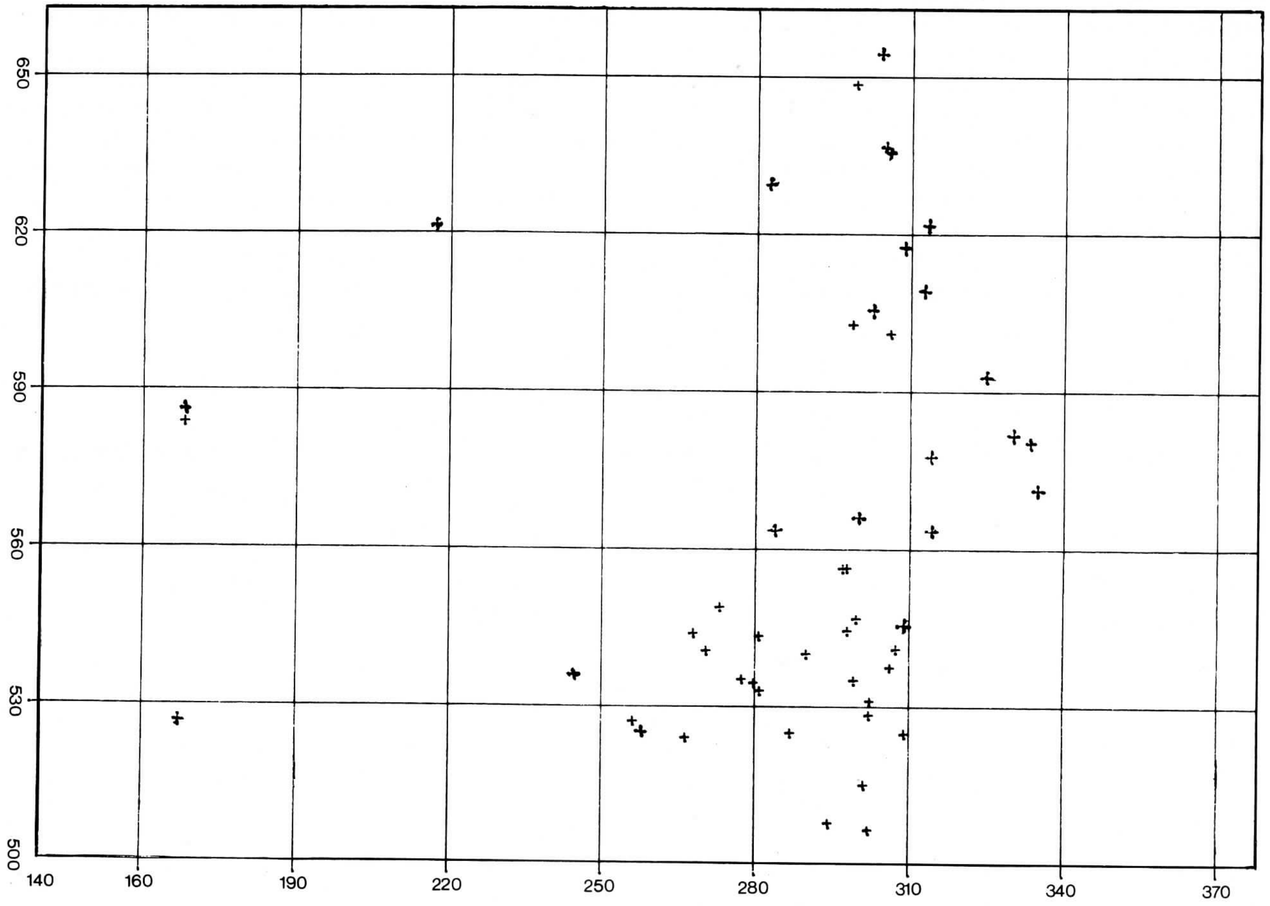


Fig 41 *Computer plot of distribution*

interesting. As Saville has pointed out (1981a, 42), however, it may not be so unusual as some of the published statistics suggest: flakes under 10mm are explicitly omitted from the Windmill Hill figures, for example (Smith 1965, 86). It is in fact exceeded in the assemblage from Carn Brea, which has some points of similarity with that of Briar Hill, and is matched in the very different context of chipping floors at Grimes Graves (Saville 1981b, 113f and 1981a, 28ff). On both these sites it is primarily the result of *in situ* knapping. At Carn Brea it is also attributed in part to the size of the raw material, a factor which was probably even more influential on Briar Hill where use was undoubtedly made of some of these small pieces.

Scarcity of large flakes tends to be associated with a corresponding scarcity of large cores, and core size certainly seems to be related broadly to quality and, even more importantly, to availability of suitable raw material. The small average size and weight of cores from Briar Hill and from sites in the Northampton area as a whole is typical of the Midlands where flint locally obtainable in the drift and gravels is generally of inferior quality (Saville 1973, 10f; 1979, 143). A superficially similar predominance of small cores and small flakes has been noted at Carn Brea, where much of the flint used is of good quality. This, however, had to be imported from a considerable distance, and its consequent value, it is suggested, led to it being exploited to the maximum (Saville 1981b, 108). On sites on gravels in South Eastern England the size of cores as well as flakes tends to be larger, but only perhaps because of the abundance of material immediately to hand (cf Healey & Robertson-Mackay 1983, 3).

The number of cores from Briar Hill relative to the total quantity of worked flint is another feature of the assemblage which requires comment since it, too, is a possible index of the quality of raw material being exploited. The ratio of cores to unretouched flakes and blades is in the order of 1:24 in the neolithic ditches, although lower in the subsoil surface sample, and much higher in the later neolithic features of the interior considered on their own. The ratio to intact flakes and blades only, is, of course, higher still, around 1:10, except in the subsoil surface sample where it is nearer 1:5.

These figures are very much at the upper end of the widely variable range seen in flint industries throughout Britain as a whole, but not particularly extraordinary when compared with those for assemblages from other sites in the immediately surrounding area. In the chiefly mesolithic assemblage from Chalk Lane, for example, the ratio is 1:12 (Bamford 1981); at the later neolithic site at Ecton it is 1:30 (Moore and Williams 1975, 19), and in the mixed surface collection from Brixworth, 1:24 (Martin & Hall 1980, 9). On Briar Hill, at least, the coincidence of a fairly large proportion of cores with few removal scars and/or retaining extensive areas of cortex suggest that the core:flake ratio may be, in part, a measure of the product of the cores being worked. A similar coincidence has been noted at Staines (Healey & Robertson-Mackay 1983, 4, 11).

The Size of the Assemblage

When we turn to consideration of the Briar Hill assemblage as a whole, the first point to note is how small it appears in relation to the large proportion of the site excavated or sampled and by contrast with the volume of finds from most excavations of major neolithic occupation sites and of causewayed camps in particular. Table 14 provides a very crude index of this contrast in the form of estimates of the numbers of flints recovered from various sites in relation to the surface areas excavated.

None of these sites is identical in all respects to any of the others, and when evaluating the raw statistics certain facts in particular have to be borne in mind. Figures from limited excavations such as Orsett appear suspect for comparative purposes when it is remembered that the density of finds on Briar Hill was very variable locally, and 20% of the total came from a mere seven stratigraphic units comprising the ditches/pits of the ditch circuit on the north west side of the enclosure, no more than 23m in total length and 0·60m deep on average.

Among the sites investigated on a large scale only Broome Heath can be shown to approach Briar Hill in the date range of its occupation and even so the circumstances are not directly comparable. On Briar Hill a proportion of the finds was undoubtedly lost when the topsoil was removed by machine. At Broome Heath the recorded numbers of finds are, in their order of magnitude, probably representative of the original density of distribution since the topsoil, stripped by machine, is stated to have been virtually sterile (Wainwright 1972). This was also the case of Fengate, another large site (Pryor 1978, 167). There, however, occupation was not only shorter in duration but manifestly different in character, and the volume of stratified deposits much smaller. (The writer is not convinced by

TABLE 14: Comparative Flint Density on Neolithic Sites in Relation to Surface Area

SITE	DESCRIPTION	CIRCUMSTANCES	APPROX. AREA OF EXCAVATION	DENSITY OF WORKED FLINT	RETOUCHED FLINTS AS % OF TOTAL
Briar Hill	Causewayed enclosure	Site Ploughed Ploughsoil machine stripped	c 14,500m²	30 flints/100m²	7.5%-25% (mean c 17%)
Orsett	Causewayed enclosure	Site Ploughed Ploughsoil machine stripped	c 1,450m²	100 flints/100m²	5.4% (all contexts)
Offham	Causewayed enclosure	Site Ploughed Ploughsoil machine stripped	c 3,500m²	195 flints/100m²	0.3%
Abingdon (1963)	Causewayed enclosure	Site Ploughed Trenches machine cut to subsoil	c 600m²	200 flints/100m²	8.6%
Carn Brea (Neo enclosure only)	Walled Hill-Top Enclosure	Site not ploughed. Eroded Dug by hand.	c 875m²	2834 flints/ 100m²	5.9%-13.9% (mean c 7.5%)
Hurst Fen (1st season only)	Domestic Occupation	Site not ploughed Dug by hand.	c 334m²	4900 flints/ 100m²	c 4.8%
Broome Heath	Enclosure	Site not ploughed. Topsoil machine stripped	c 14,000m²	160 flints/100m²	c 4.8%
Fengate Storey's Bar	Field system and domestic occupation	Site Ploughed. (Archaeological levels not disturbed) Topsoil machine stripped	c 18,000m²	c 18 flints/100m²	c 5.5%

the arguments for neolithic origins of the ring ditch at Fengate, or for the continuity of settlement, as opposed to land use, which this would imply. – *pace* Pryor 1978).

On Briar Hill a speculative estimate of the numbers of flints lost in the ploughsoil is in the order of 8-11 times those found on the subsoil surface (see microfiche Appendix 5:3). This figure added to the total of stratified finds would give an original mean density of 100-140 flints/100m^2, still well below the figure for Broome Heath, for example, and insignificant beside Hurst Fen or Carn Brea.

The Quality of the Assemblage

A qualitative rather than quantitative comparison between these different assemblages shows them in somewhat altered perspective. On Briar Hill, 16·9% of all worked flints had been retouched, which seems an unusually high proportion. Even if the 'miscellaneous' category is excluded, classified forms alone account for 11·9% of the combined total. In all but two of the individual sample groups the value is little different, with retouched implements forming between 15% and 18% of the whole. In contrast, only 7·5% of all flints stratified in later neolithic (Phase VIII) features within the enclosure are retouched, but this comparatively low figure is balanced by the 24·8% of retouched pieces in the presumptively contemporary sample from the subsoil surface in the same area. This discrepancy may reflect a specific pattern of discard rather than a change of use or manufacturing custom.

On the other sites mentioned, the proportion of retouched pieces varies from 0·3% at Offham, through *c* 5% at Broome Heath, Orsett, Hurst Fen and Fengate, to *c* 9% at Abingdon; the mean is around 6%. At Carn Brea the figure for individual sites E and J is as high as 13%, but the mean for the neolithic enclosure as a whole is no more than 7·5%.

To put it another way, the mean density of retouched pieces on Briar Hill, at 3-4 flints/100m^2 is considerably greater than at Fengate (1 flint/100m^2) and not very far short of the density at Orsett (5-6 flints/100m^2). It would probably be at least equivalent to Broome Heath (7-8 flints/100m^2) if allowance were made for the portion lost in the plough soil on Briar Hill. It would, nevertheless, still be much lower than the figures for Hurst Fen, Carn Brea (211 flints/100m), or even Abingdon (17 flints/100m^2).

The Retouched Implements

The retouched component on Briar Hill is not unusual in kind; there are several points of resemblance, for example, with the assemblage from Windmill Hill. There is, however, no overriding common pattern in the incidence of tool types on causewayed camps in particular, and between neolithic sites in general there is considerable variation in the range of implements found and their proportionate representation. This is undoubtedly a reflection of different kinds of activity.

Scrapers are frequently the commonest types, sometimes overwhelmingly so, as at Broome Heath but, as has been stated already, a high ratio of serrated flakes is not unusual on earlier neolithic sites. Leaf arrowheads are generally as rare as or rarer than on Briar Hill, but there is a striking exception at Carn Brea where, within the neolithic enclosure itself, they constituted 35·7% of all retouched pieces (Saville 1981b, 106). They have also been found in large numbers at Crickley Hill (Dixon 1981) and were comparatively common at Hembury (*c* 9% of retouched pieces: Liddell 1935, 162).

One class of implement notable for its absence on Briar hill is the sickle flint. This heading embraces the square-trimmed flakes so termed by Smith (1965, 97) which occur at Windmill Hill, and blunted back knives with bifacial retouch which were found in the upper levels of the same site, at West Kennet and at Hurst Fen (Clark et al 1960, 224). At Windmill Hill both types exhibited the type of polish associated with use for cutting grasses or cereals, and the fact that this type of wear is virtually absent among the Briar Hill flints has already been mentioned.

The introduction of new tool types such as notched flakes in the later neolithic industry and the decline in importance of the serrated flakes may indicate a shift of emphasis in domestic and/or manufacturing activity on the site. The same interpretation could be put on the perceptible increase in the number of tools exhibiting heavy abrasive wear indicative of working hides, but as this is very pronounced in only one context (248B(3)) it may not be of general importance.

The Utilised Flints

It is difficult to assess the significance of the large utilised fraction among flakes from Briar Hill because of the scarcity, to date, of comparative data from other British neolithic sites. A detailed analysis of edge-wear, based on microscopic examination, has been published on flints from Storey's Bar, Fengate (Voytek 1978), but elsewhere the identification of 'utilised' flakes has most often been based on macroscopic examination, using a variety of differing criteria.

The very similar results obtained independently from the studies of the Briar Hill and Fengate assemblages suggest, nevertheless, that a much higher proportion of flakes than has generally been recognised may regularly have been used as implements. It is an interesting point that on Briar Hill up to 21% of small and very small pieces showed unmistakable signs of use-wear, and here the observation made by David Clarke (1978, 11) with regard to the possible mounting of microliths in composite knives, sickles and grater-boards may be relevant. Smith (1965, 87) notes that many of the cores from Windmill Hill had been worked to a point where they were producing only very small flakes. She offers no explanation, but it would be reasonable to infer that small flakes were in fact required for use.

Interpretation of Evidence

Any explanation of the high ratio of retouched and utilised pieces to waste in the Briar Hill assemblage is necessarily somewhat speculative. On available evidence it could be interpreted in at least two different ways: either the industry was geared to the necessity of making fullest possible use of what were clearly limited resources, or flint working was not a frequent or important activity on the site, whether because it was inappropriate, or because it was impractical. It is unlikely to be simply an accident of excavation sampling, since it is a feature not just of the earlier but of the combined later neolithic groups, the distribution of which seems to have been largely encompassed within the excavated area.

The evidence for flint working within the enclosure is problematic, although the absence of surviving chipping floors is, in itself, of little significance because the surface on which they might have occurred has been destroyed. It has been suggested already that one relatively high concentration of waste flint in the fill of ditch segment 124E may have derived from such a floor, although it hardly looks like the produce of a large-scale knapping session. A similar explanation may be advanced for the large number of waste flakes from the later neolithic feature 145.

It is necessary to postulate flint working on or near the site to explain the waste material, including cores, which was found, as well as odd items such as the unfinished arrowhead (F68), but some of the waste should not, perhaps, be taken at face value. The cache of secondary and tertiary flakes, implements and a core found in ditch segment 53B is almost certainly a selected group, probably carried as a basic 'tool kit', yet it included not only the remnant of the core from which most of the flakes were struck, but a good many flakes which might seem at first sight too small and thin to be of much practical use. Some of the other examples of groups of conjoining flakes also include heavily utilised or retouched pieces.

One way of reconciling all these elements – the small size of the assemblage as a whole, especially relative to the length of use of the site, the high proportion of retouched implements, and the comparative shortage of waste – would be to postulate the transport to the site of some, if not the major part of the flint in the form of ready-manufactured implements, selected blanks struck at the 'quarry' site, and already partially reduced cores. Since the source was probably not far distant from the site, this procedure would seem to have practical advantages. Whether or not it might also have implications concerning the status and mode of use of the enclosure remains to be considered.

LIST OF ILLUSTRATED WORKED FLINTS

Ill. No.	**Description**	**Context**	**Phase**
F1	Core. Class A1. Flake scars	152B(7)	V?
F2	Core. Class A2. Flake scars	51B(3)	VII/VIII
F3	Core. Class A2. Flake scars	C7 surface	—
F4	Core. Class A2. Blade and flake scars: retouched (not shown)	177(2)	V?
F5	Core. Class B2. Blade scars	14B(3)	IV?
F6	Core. Class B3. Flake scars	165D(9)	VII/VIII
F7	Core. Class C. Blade and flake scars	B6 surface	—
F8	Core. Class D. Flake scars. Utilised	124A(3)	II
F9	Core. Class D. Blade and flake scars: retouched	166D(2)	VII?
F10	Core. Class E. Flake scars: retouched	165D(2)	V
F11	Core. Class E. Flake scars	165D(5)	V
F12	End scraper	28C(5)	IV
F13	End scraper	39C	V?
F14	End scraper	51B(3)	VII/VIII
F15	End scraper	143	VIII
F16	End scraper	123C(5)	VII/VIII
F17	End scraper	165D(5)	V
F18	End scraper	165D(5)	V
F19	End scraper	165D(5)	V
F20	End scraper	165D(1)	V
F21	End scraper	180(7)	VII/VIII?
F22	End scraper	163C(3)	V
F23	End scraper	194	XI
F24	Extended end scraper	28C(5)	IV
F25	Extended end scraper	149C(4)	V
F26	Extended end scraper	146B(4)	V
F27	Extended end scraper	124E(6)	VII/VIII
F28	Extended end scraper	124U/S	—
F29	Extended end scraper	248B(3)	VIII
F30	Double end scraper	163C(3)	V
F31	Disc scraper	25B(3)	III
F32	Disc scraper	28C(5)	IV
F33	Disc scraper	124E(4)	VII
F34	Side/end scraper	59	—
F35	Side/end scraper	147C(3)	VII/VIII
F36	Side/end scraper	124E(8)	IX
F37	Side/end scraper (flake from polished implement)	165D(5)	V
F38	Side/end scraper	162F(3)	VII/VIII
F39	Side scraper	B7 surface	—
F40	Side scraper	169C(2)	VII?
F41	'Nosed' scraper	344	XI

F42	'Nosed' scraper/knife	180(9)	VII/VIII?
F43	'Hollow' scraper	C7 surface	—
F44	Denticulated scraper	361	—
F45	Unclassified scraper	A7 surface	—
F46	Unclassified scraper	145	VIII
F47	Serrated flake	40(3)	V?
F48	Serrated blade	51B(3)	VII
F49	Serrated blade	158B(3)	VII?
F50	Serrated flake	165D(5)	V
F51	Serrated blade	163A(2)	III
F52	Serrated flake	166B(4)	6194
F53	Serrated flake	248B(3)	VIII
F54	Saw	B7 surface	—
F55	Denticulate	124E(7)	IX
F56	Notched blade	C8 surface	—
F57	Notched blade	B7 surface	—
F58	Notched flake	B6 surface	—
F59	Notched flake	149C(3)	V
F60	Notched flake	A7 surface	—
F61	Notched flake	147C(3)	VII
F62	Plano-convex knife	25E(4)	IX
F63	Knife	337B(2)	IX
F64	Knife	B7 surface	—
F65	Knife	165D(5)	V
F66	Knife	166B(4)	IV?
F67	Knife	173(3)	VII
F68	?Sickle fragment (burnt)	165C(3)	IV
F69	'Laurel leaf'	166D(3)	VII?
F70	Leaf arrowhead — ?Unfinished	D7 surface	—
F71	Leaf arrowhead — single point	49	XI?
F72	Leaf arrowhead — single point	131	XI
F73	Leaf arrowhead — single point	A6 surface	—
F74	Leaf arrowhead — single point (broken)	162D(4)	V
F75	Leaf arrowhead — double point	122B(2)	V?
F76	Leaf arrowhead — double point	122B(2)	V?
F77	Transverse arrowhead — 'chisel' (broken)	337A(1)	IX
F78	Transverse arrowhead — 'chisel'	A7 surface	—
F79	Transverse arrowhead — 'chisel' (broken)	131	XI
F80	Transverse arrowhead — petit-tranchet	131	XI
F81	Transverse arrowhead — 'chisel'	221	XI
F82	Triangular (?) arrowhead	26C(2)	VII
F83	Tanged arrowhead	A7 surface	—
F84	Tanged arrowhead (burnt)	240	X
F85	Borer — Awl	131	XI
F86	Borer — Awl/serrated flake	162E(7)	VI/VII
F87	Borer — Piercer	165D(9)	VII/VIII
F88	Borer — Piercer	166A(1)	III?

F89	Borer — Awl (broken)	166A(2)	III?
F90	Borer — Awl	248C(6)	IX
F91	'Spurred' implement	C8 surface	—
F92	'Spurred' implement	B6 surface	—
F93	'Spurred' implement	159A(1)	V?
F94	'Fabricator'	C7 surface	—
F95	'Fabricator'	B7 surface	—
F96	Microlith — obliquely blunted point	B7 ploughsoil	—
F97	Microlith — obliquely blunted point with ancillary retouch	C7 surface	—
F98	Microlith — edge blunted point with ancillary retouch	15	—
F99	Microlith — edge blunted point with ancillary retouch	A2 surface	—
F100	Microlith — edge blunted point (broken)	C5 surface	—
F101	Microlith — edge blunted blade	131	XI
F102	Microlith — isosceles triangle	145	VIII
F103	Microlith — tanged	171C(3)	VII/VIII
F104	Microlith — miscellaneous	76	XII
F105	Microlith — miscellaneous	159A	V?
F106	Burin	B7 surface	—
F107	Burin	165D(4)	V
F108	Miscellaneous — abrupt edge retouch	337B(3)	IX
F109	Miscellaneous — flat edge retouch	165D(5)	V
F110	Miscellaneous — abrupt edge retouch (broken)	111(5)	VII/VIII
F111	Miscellaneous — abrupt edge retouch (flake from polished implement)	165D(5)	V
F112	Miscellaneous — abrupt edge retouch (broken)	160(7)	V?
F113	Miscellaneous — abrupt edge retouch	166B(3)	IV?
F114	Miscellaneous — flat edge retouch	174(5)	VII/VIII
F115	Miscellaneous — abrupt retouch	199D(3)	VII/VIII

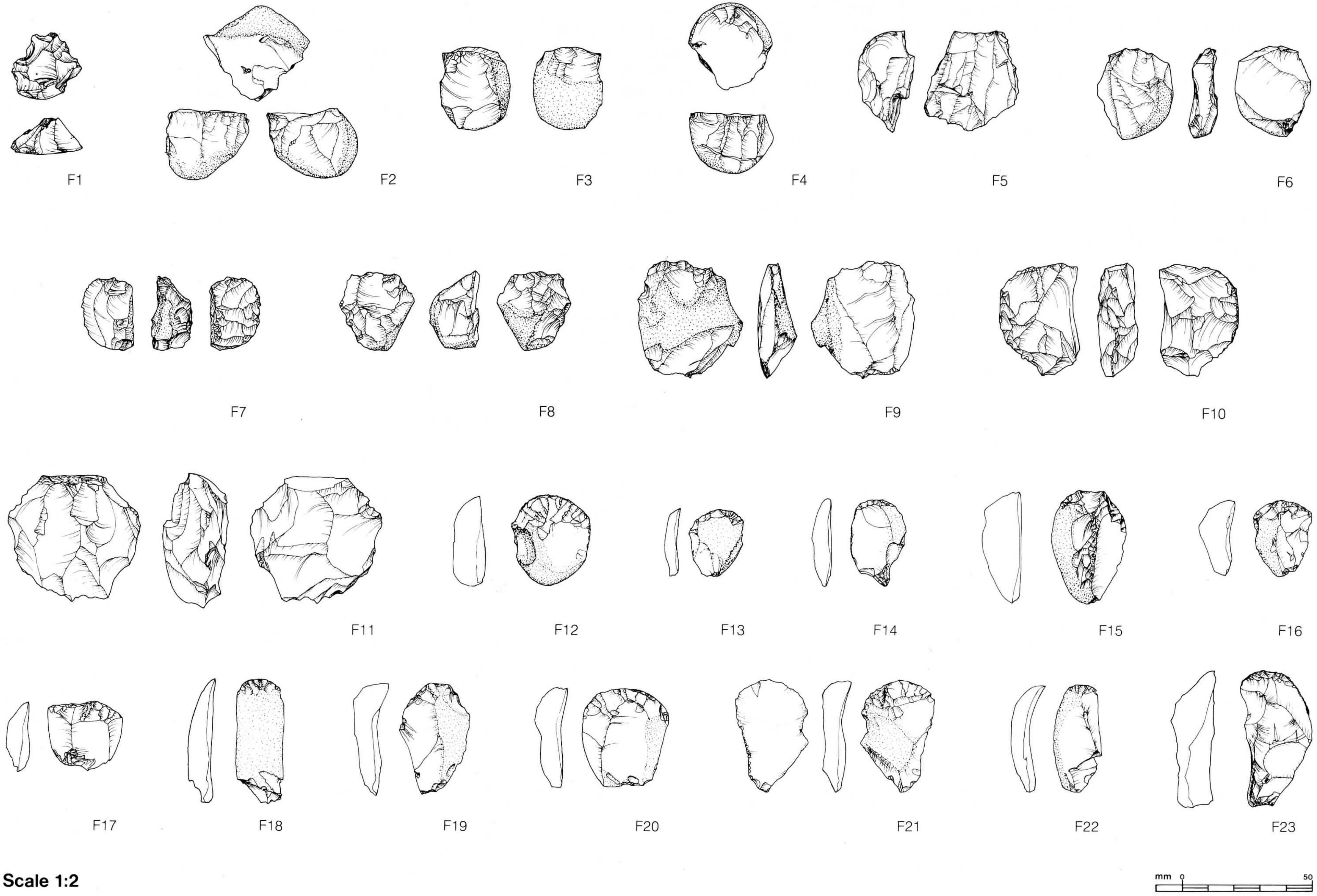


Fig 42 *Flint implements:* F1-F23

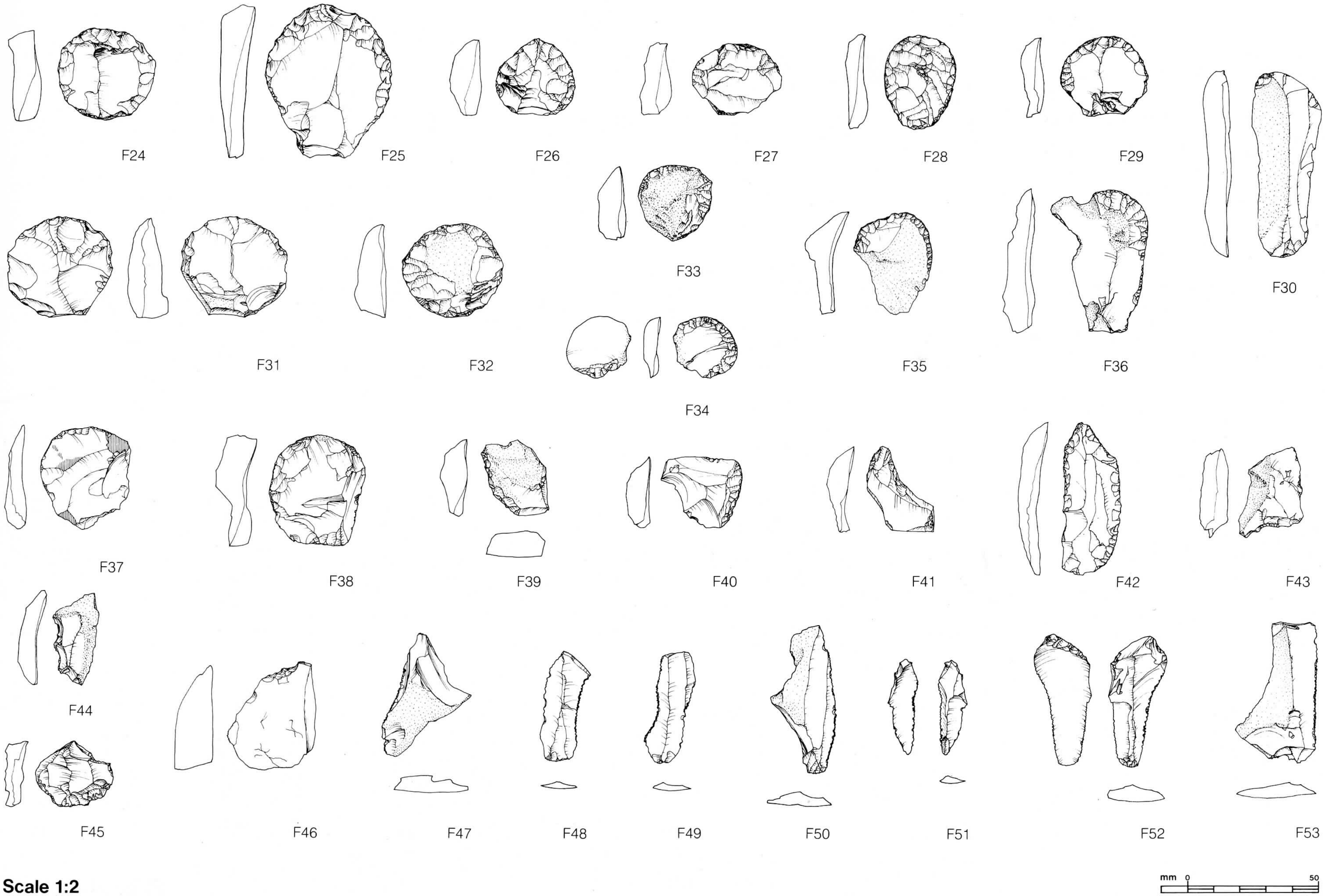
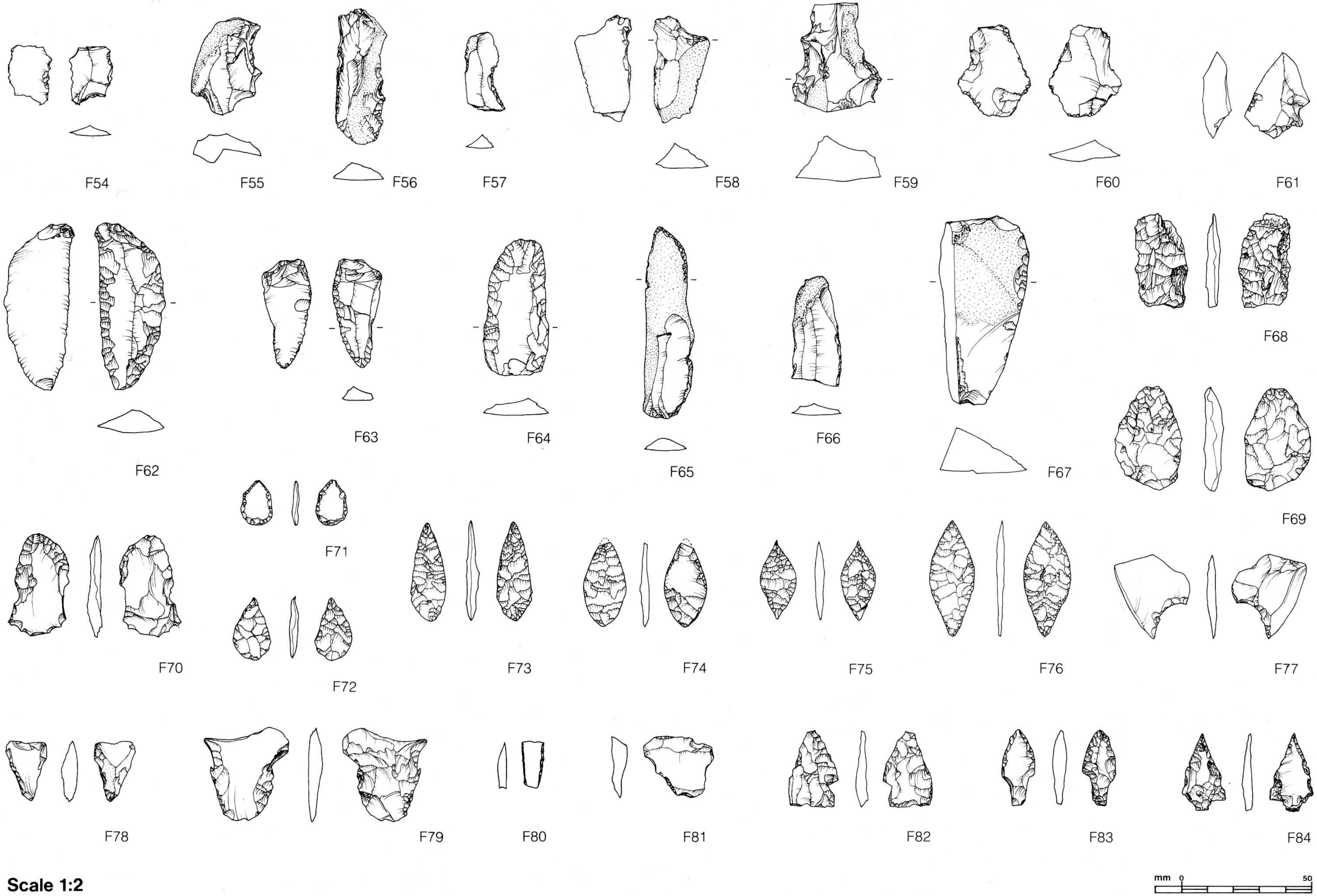


Fig 43 *Flint implements:* F24-F53



Scale 1:2

Fig 44 *Flint implements:* F54-F84

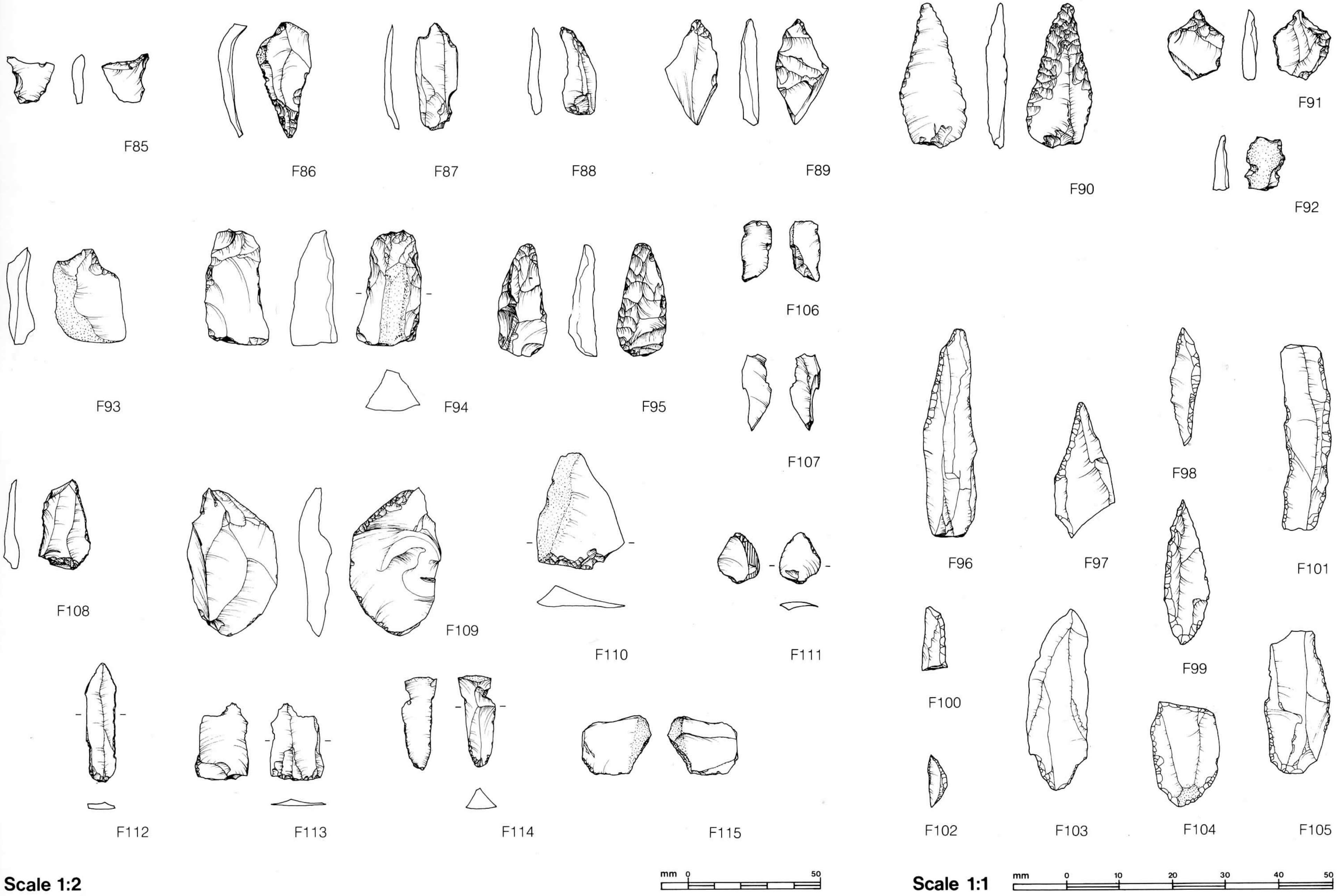


Fig 45 *Flint implements:* F85-F115

THE WORKED STONE

by H M Bamford

The neolithic artefacts of stone other than flint comprise seventeen flakes and fragments of implements made of igneous rock of non-local origin, thirty two assorted implements made of sedimentary rock which is of non-local origin but which could have been obtained from local Drift deposits, and three utilised quartzite pebbles.

A list of illustrated pieces is given below and a full descriptive catalogue is included in microfiche Appendix 6.

Implements of Igneous Rock

Most of the fragments found are small flakes, one of which has been reworked, and eleven of them retain part of a polished surface or surfaces. One is from a perforated implement, five have characteristics which identify them as being from axes and the rest may reasonably be presumed to be from axes. All the pieces have been examined and identified petrologically by Dr W A Cummins of the University of Nottingham and ten of them have been thin-sectioned. All are of grouped stone from recognised sources, namely Groups I, VI, VII and XX.

Group 1

Greenstone. Source Cornwall.

Fig 46:S1

The sole example of this group was a large flake from the lateral edge of an axe of thick, rounded section. The surface has been pecked and ground smooth but is not polished.

Group VI

Epidotized tuff. Source Great Langdale, Cumbria.

Fig 46:S2, S3, S4, S5

The fourteen flakes in this group are for the most part very small, but on eight of them there is at least some trace of a high polished surface. One (S4) is from the rounded lateral edge of a thin axe of elliptical section, and another (S2) displays part of the sharply defined edge-facet which is typical of many axes of this group. The most unusual piece is a flake (S3) which has been chipped and partly reground to make a miniature axe-like implement, possibly a chisel if it is intended to be functional at all.

Group VII

Augite-granophyre. Source Craig Lwyd, Gwynedd.

Fig 46:S6

The single Group VII fragment is the largest found on the site. It is the butt end of an axe, incompletely ground and polished, and some attempt seems to have been made to use it as a core for flake production.

Group XX

Epidotized ashy grit. Source Charnwood, Leics.

Fig 46:S7

The Group XX fragment is from a hammer with countersunk perforation or central depression. The surviving surface is ground smooth, but the edge is heavily and uniformly pocked by use. It is possible that it has been fashioned from what was originally an axe.

Distribution

All but two of these pieces were found immediately around or within the inner enclosure, either in the fill of neolithic ditch segments on the north side, or in post-neolithic features. The exceptions came from features which cut the outer ditch segment 78 and the western inner ditch segment 200D respectively. The largest group of stratigraphically linked finds consists of six flakes, including the reworked piece S3, which are from successive recuts of 162 and 165, dated from Phase V and later. All are of Group VI and could quite possibly have come from the same implement.

The general distribution of the fragments by stratigraphic phase is summarised in Table 15.

Despite the two pieces stratified formally in deposits of Phase IV, it is not certain that any need be dated earlier than Phase V. One of the two is an exceedingly small chip from 152A(1) which could have slipped through loose rubble layers higher in the sequence; the other, from 162C, was in a layer closely underlying a phase V recut.

Discussion

Among Group VI fragments the two which include portions of a lateral edge are clearly from different axes. As for the rest, it is at least possible that all came from the same two implements.

The dominance of Group VI on the site nevertheless reflects the dominance of Group VI among the petrologically identified stone implements in the Midlands and much of Eastern England. The other groups represented are those which might be expected, given the relative frequency and known distribution patterns in Britain (Cummins 1979; 1980). Northampton is within the general distribution area of Group 1 and on the eastern fringes of the densest distribution of Group VII. The distribution of Group XX implements tends to be more local, but the source in Charnwood Forest is less than 65km from Briar Hill and finds also occur with relative frequency in Norfolk and Cambridgeshire, to the east.

The contexts of the various fragments suggests dates consistent with what is known or can be inferred elsewhere. The Group VII and Group XX specimens were both found in the latest surviving fill layers in final ditch recuts, datable to Phase IX and Phase VIII/IX respectively. They cannot therefore be shown to be earlier than *c* 2000 bc. The Group I fragment comes from the surface of a ditch segment (354) which was cleaned but not excavated and is likely to be similarly late in date. Smith (1979) has shown that Group VII axes were probably in general use from *c* 2700 bc into the second millennium bc, that the associations of Group I

TABLE 15: Distribution of Grouped Stone Implements by Phase

	Phase IV	V	VII/VIII	IX	Post Neo.	Total
Group I			1?			1
Group VI	2	1	6		5	14
Group VII				1		1
Group XX			1			1
Total	2	1	8	1	5	17

axes outside Cornwall itself are generally later neolithic and that the period of currency of Group XX implements is likely to have been limited and also late.

The widespread dissemination of Group VI axes in Britain seems to have begun around 3000 bc and none of the contexts in which the Group VI fragments occur is likely to be any earlier than this, certainly not if the Phase IV associations are regarded as dubious.

Implements of Sedimentary and Miscellaneous Rocks

The implements in this category may be classified according to apparent function as mortars or grinding slabs, rubbing stones, grindstones for shaping, sharpening or polishing other implements, and pounders or hammers.

The Raw Material

The stone used is almost all of two types, each evidently selected for different purposes according to its properties. Identification of the raw material is by Dr D Sutherland.

(a) A slightly calcareous, ferruginous sandstone of the kind which underlies the site and could have been obtained during the digging of the deeper ditch segments. This contains angular grains which make it a good abrasive and, while the surface can be smoothed, it does not take a polish. It tends to fissure in rectilinear slabs. The grinding/sharpening stones are made of this, and all of the mortars and grinding slabs except for two untypical specimens.

(b) Denser, pale, medium grained to coarse sandstones with sparse cement. These are of triassic or, more rarely, carboniferous origin but are to be found as pebbles and boulders in local Drift deposits. They will take a polish and were evidently preferred for use as rubbing stones and pounders.

(c) Occasionally quartzite pebbles, also from local Drift deposits, were employed unmodified as pestles, pounders or hammers.

Mortars and Grinding Slabs

Fig 47: S8-S12

Portions of at least ten mortars or grinding slabs were found. None of the eight examples made from ferruginous sandstone is undamaged, although three are sufficiently complete for the original dimensions to be estimated.

The stone seems usually to have been split and trimmed roughly into rectangular or rectilinear slabs (eg S11) and the upper surface prepared by pecking and grinding. The grinding areas are hollowed to some extent, the depth of the concavity varying from 3mm to 15mm, and are smoothed. Several show unidirectional or predominantly unidirectional striations.

S12 is one of two burnt fragments which, although found in different contexts, are probably from a single utensil. This has been classed as a grinding slab, although there are several untypical features and it probably had a specialised use, different from the rest. It is made of the denser, pale sandstone and had two opposed, highly polished and slightly concave surfaces. The remaining specimen is an unmodified, bun-shaped small boulder of coarse sandstone, the flat surface of which is slightly smoothed by wear. The size and weight preclude its use as a rubbing stone.

Rubbing Stones

Fig 49: S16-S18, S20

There are six complete and fragmentary rubbing stones of various types. The largest and most elaborate of these (S16) appears to be half of an oval slab, probably manufactured from a split boulder. Both the upper and lower surfaces, which are slightly convex, have been carefully dressed by the techniques of pecking and grinding and are partly polished. The natural bevel of the side-edges seems to have been enhanced slightly by grinding.

Three others have been similarly dressed and smoothed on the lower face only, although the upper faces have been roughly modified by chipping. On two of these (S17, S18) the more prominent portions of the upper surface have been rubbed smooth by friction, presumably as a result of long and heavy use, and there are traces of similar wear on the third (S20). Two others are large, unmodified pebbles, one of them broken but both showing evidence of smoothing and even polishing on part of one face.

Grinding and Polishing Stones

Fig 48: S13, S14, S15, Fig 49, S19

Four pieces of ferruginous sandstone have been used for shaping or sharpening axes and other implements.

Two (S13, S15) are unmistakeably grinding slabs for stone or flint axes, and a third fragment (microfiche Appendix 6:2), on which are parts of two parallel, intersecting shallow grooves, resembles artefacts from Hurst Fen and Abingdon which have been similarly identified (Clark et al 1960, 227; Leeds 1927, 448). Doubts have, however, been expressed about the latter example (Avery 1982, 42). On S13, on the opposite face to the gently concave groove made by the broad face of an axe-blade, are a series of much narrower, deeper grooves with an angular V profile. Similar grooves on a re-used mortar fragment (S14) have a rounded profile, undercut in one instance, and both are likely to have been the result of shaping or smoothing pins of bone, antler or even hardwood.

A fifth item (S19), also of ferruginous sandstone, is somewhat different. It is smaller than the others, of a size to fit comfortably within the palm of the hand. It has been carefully shaped and is sub-rectangular with facetted edges. One face is ground flat with oblique striations. There form and the striations suggest a whetstone although it was clearly stratified in a neolithic context (166 B(4)).

Pounders and Hammerstones

Fig 50:S22, S23

Eight natural pebbles of varying size from 220g to 1150g in weight, and four fragments of such pebbles may be described as pounders, although they display at least two different types of wear. Three are of quartzite and derive from the Bunter pebble beds and the remainder are of the pale sandstones.

On all of them a part of the surface has been chipped and pocked by percussive use, sometimes extensively so, but at least five also exhibit a crushing and smoothing of the damaged area which is more consistent with a grinding or pestle-type action. These include two small, elongated quartzite pebbles, one of which is broken (S22), and three larger, rounded pebbles (eg S23). None of the implements of either group is too large to have been used in one hand.

Miscellaneous

Two additional objects of ferruginous sandstone are a rough, flat discoid 72mm in diameter, and a small sphere 38mm in diameter.

The surface of the disc, which was found in the fill of neolithic inner ditch segment 129, appears to be slightly abraded but shows no definite marks of manufacture or use. The sphere, which was found on the subsoil surface in area B7, is certainly an artefact and recalls the balls carved of chalk from Windmill Hill, and other neolithic sites in Southern England (Smith 1965, 132). There is, however, no proof that it is of neolithic date.

Distribution

On Briar Hill mortars and grinding slabs, rubbing stones, grindstones and pounders had a virtually identical distribution and were in several instances found associated in the same context. The majority were from ditch segments around the northern half of the inner enclosure, but there was also an outlying group of such finds in 199D and 200D, on the west side of the outer enclosure. Unfortunately, not all of these were recognised immediately in the ironstone rubble of the fill of 200 and so the exact position of the finds in the ditch was not recorded in all cases). The dating of those stratified in neolithic contexts ranges from Phase IV to Phase IX (see Table 16).

The process by which they arrived in the ditch segments is uncertain, but since many are damaged or broken and several show signs of burning, it seems probably that they had been discarded.

Discussion

To the extent that they are implements or utensils employed variously for grinding or crushing different substances or materials, it may be said that all the items described above are related by function. The precise use of each is not necessarily easy to determine, however.

The mortars seem on the whole to conform to the 'saucer' type most usually found on neolithic sites although one fragment (microfiche Appendix 6:2), whose surface is hollowed only slightly and in one direction, might be from a true saddle quern.

It seems generally to be assumed, tacitly or otherwise, that all such utensils were intended primarily for the grinding of corn, but it could be argued that the small size of the grinding area on many would render them very inefficient if not wholly inadequate for such a purpose. The Briar Hill examples look, in fact, to be more suited to the processing of softer food stuffs or of other material entirely; as an example, the miniature grinding hollow of S9 could have been used for the preparation of pigments.

Another point worth noting is that the larger rubbing stones could not have been used on any of the mortars: they are too broad and the convexity of their lower surface is too slight to fit the grinding hollows of the latter. Some of the 'pounders', on the other hand, fit very well and are abraded in a manner which is at least consistent with such a use.

The manufactured rubbing stones, like the mortars, resemble those found on other sites. S16 is unusual, if not unique, in being so carefully shaped and finished, but other stones dressed on both upper and lower face were recorded at Hurst Fen (Clark et al 1960, 227).

Axe grinding or polishing stones are not common but have been found on several neolithic sites including Hurst Fen, Broome Heath (Wainwright 1972, 69) and Carn Brea (Smith 1981, 159) as well as Abingdon. The examples from Briar Hill are well smoothed and the ferruginous sandstone of which they are made would be suited to grinding and rough polishing. They attest the maintenance and thus, indirectly, the use of axes on or around the site, but it seems unlikely that the axes, all probably of imported material, were manufactured here.

TABLE 16: Distribution of Mortars, Rubbing Stones etc. by Phase

	Phase IV	V	VII/VIII	Neo (U/S)	IX	Post-Neo	Total
Mortars	1	3	2	4			10
Grind-stones			2	2			4
Rubbing stones	1?	3	2	2		1	9
Hone	1						1
Pounders/ Hammers	1	3	1	3	1	2	11
Total	4	9	7	11	1	3	35

Puddingstone Quern

Fig 50:S21

A fragment, constituting about a quarter of the upper stone of a rotary quern made of Hertfordshire puddingstone (conglomerate), was found in the fill of the Saxon sunken featured building 29.

The stone which shows traces of having been burnt, is of domed ('beehive') shape with a flat lower surface. The fragment includes only a very small part of the central feed pipe, which seems to have been approximately 20mm in diameter.

This is an example of a recognized type of iron age quern whose main distribution seems to be in Eastern England and especially in East Anglia (Curwen 1941; Philips 1950). At least two similar specimens are recorded among the extraordinarily large number of querns found in Hunsbury Hill Fort, the majority of which were evidently made of millstone grit and of a form, termed the 'Hunsbury' type, which is similar to the puddingstone querns (ibid George 1917, 38).

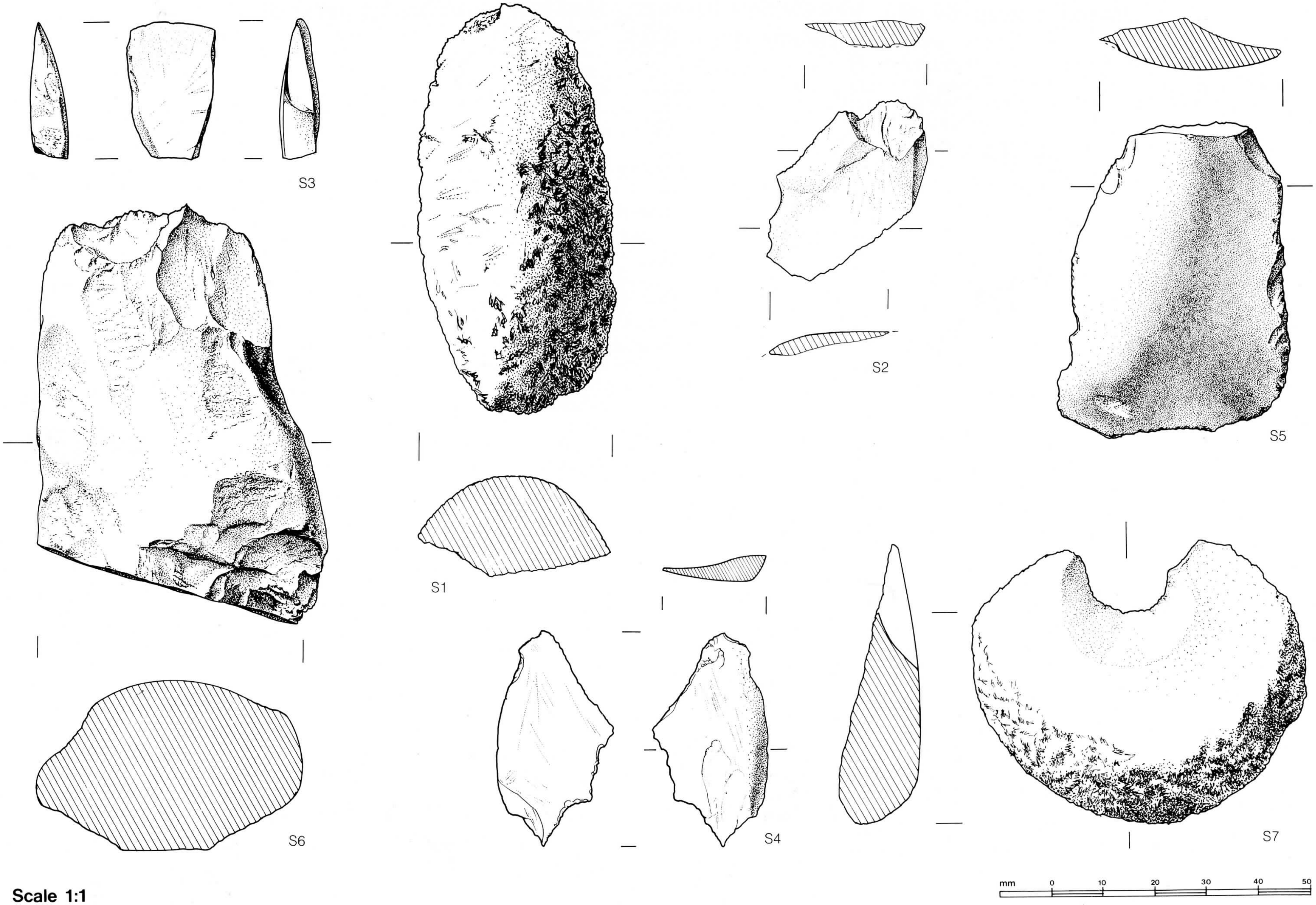
Abbreviated List of Illustrated Worked Stone Implements (A complete list is provided in Microfiche Appendix 6)

Implements of Igneous Rock

Ill. No.	Gr.	Description	Context	Phase	Petr. No.
S1	I	Axe fragment	354 surface		Np102
S2	VI	Axe fragment	344	XII/XI?	Np104
S3	VI	Flake from polished implement reworked to form chisel-like implement	165C(8)	V/VII	NS
S4	VI	Axe fragment	131	XI	NS
S5	VI	Fragment of polished axe	76	XII	Np106
S6	VII	Butt end of axe	149C(5)	IX	Np101
S7	XX	Fragment of hammer with countersunk perforation or hollow	147C(5)	VIII?	Np103

Implements of Sedimentary and Miscellaneous Rocks

Ill. No.	Description	Context	Phase
S8	Shallow mortar/grinding slab: broken? Ferruginous sandstone	28 U/S	—
S9	Small mortar: possibly broken. Ferruginous sandstone	169B(3)	V
S10	Shallow mortar/grinding slab: broken. Ferruginous sandstone	169B(3)	V
S11	Shallow mortar/grinding slab. Ferruginous sandstone	199D(1)	VII
S12	2 fragments double-sided grinding slab. Medium grain pale sandstone	34A(3) 165D(9)	IV? VII/VIII
S13	Grindstone for polishing axes and ? pins: broken. Ferruginous sandstone	35U/S	VII?
S14	Shallow mortar/grinding slab, re-used for grinding and polishing pins: broken. Ferruginous sandstone	199D(1)	VII
S15	Grindstone for polishing axes. Ferruginous sandstone	247C(2)	VII
S16	Large oval rubbing stone, dressed and ground on both faces: broken. Medium grain pale sandstone.	160 (7)	V?
S17	Rubbing stone: broken. Pale coarse sandstone	161 (3)	V?
S18	Large rubbing stone. Medium grain pale sandstone	166B(4)	IV?
S19	Small hone (?). Ferruginous sandstone	166B(4)	IV?
S20	Pounder. Coarse pale sandstone	167D(1)	VII?
S21	Fragment of upper stone of rotary quern. Hertfordshire puddingstone	29	XIII
S22	Elongated pebble used as small pestle: broken. Bunter quartzite	337B	IX
S23	Pebble used as pounder/hammer. Fine-grained brown sandstone	159A(2)	V



Scale 1:1

Fig 46 *Worked stone: axe fragments* S1-S7

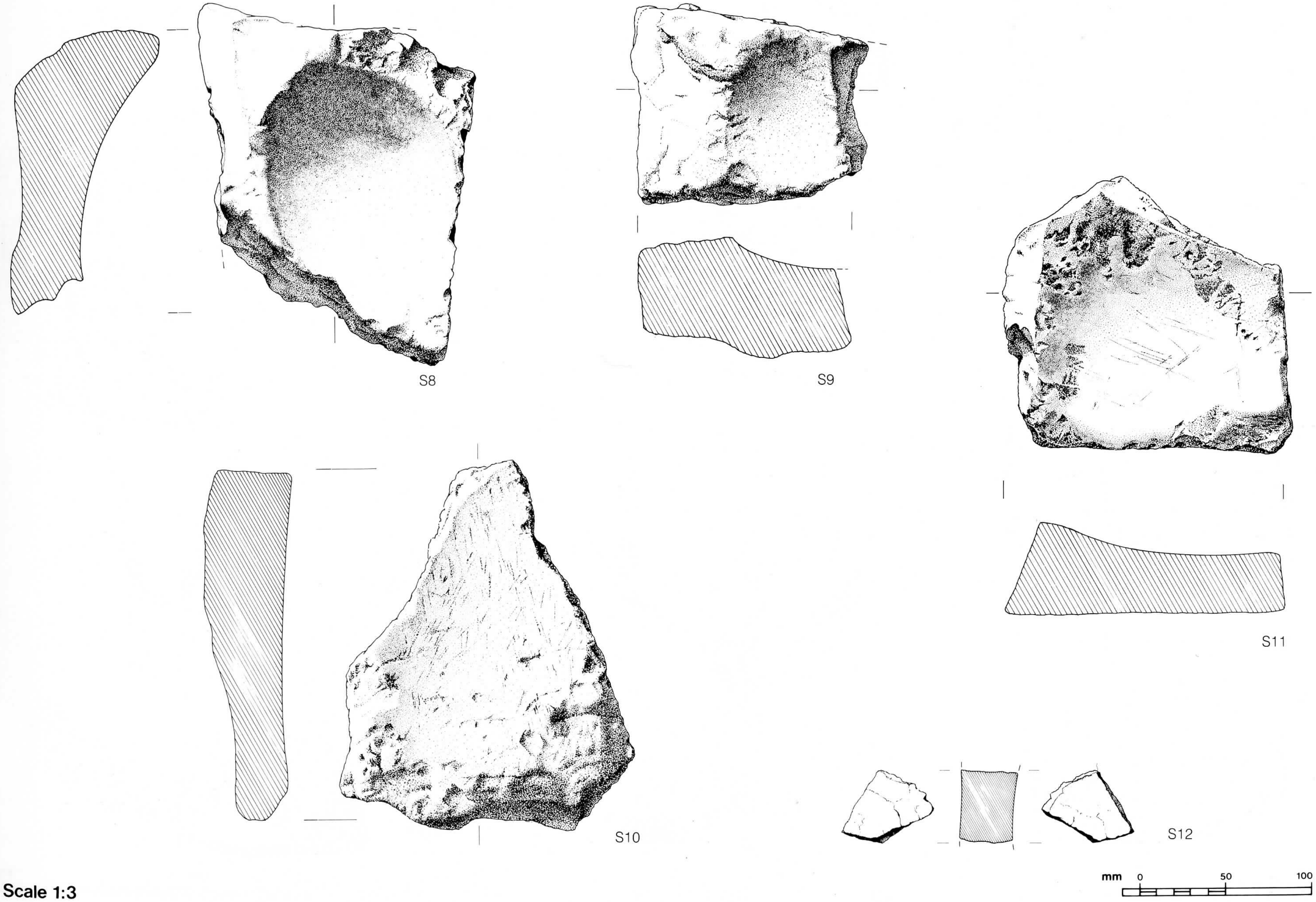
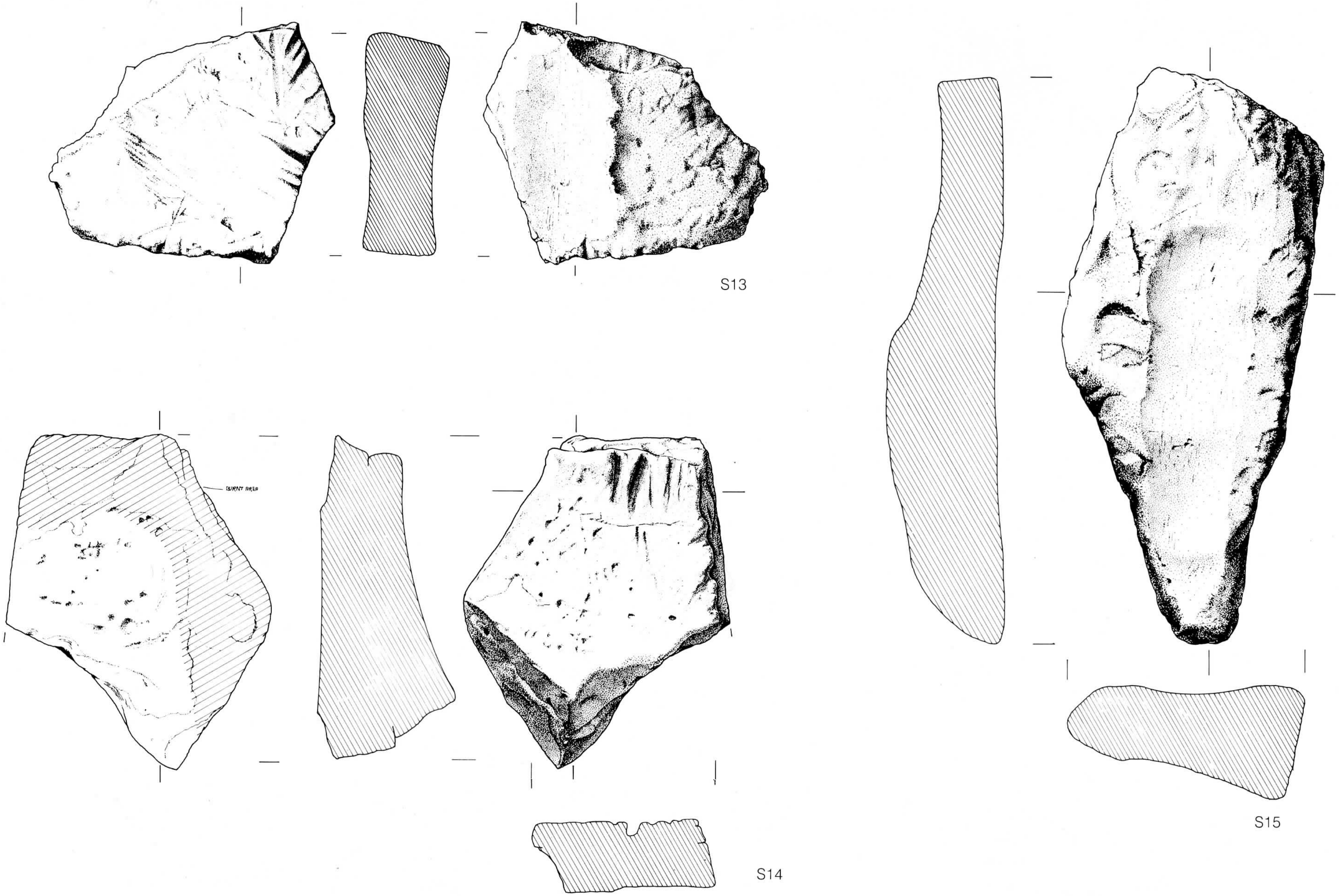


Fig 47 *Worked stone:* S8-S12



Scale 1:3

mm 0 50 100

Fig 48 *Worked stone:* S13-S15

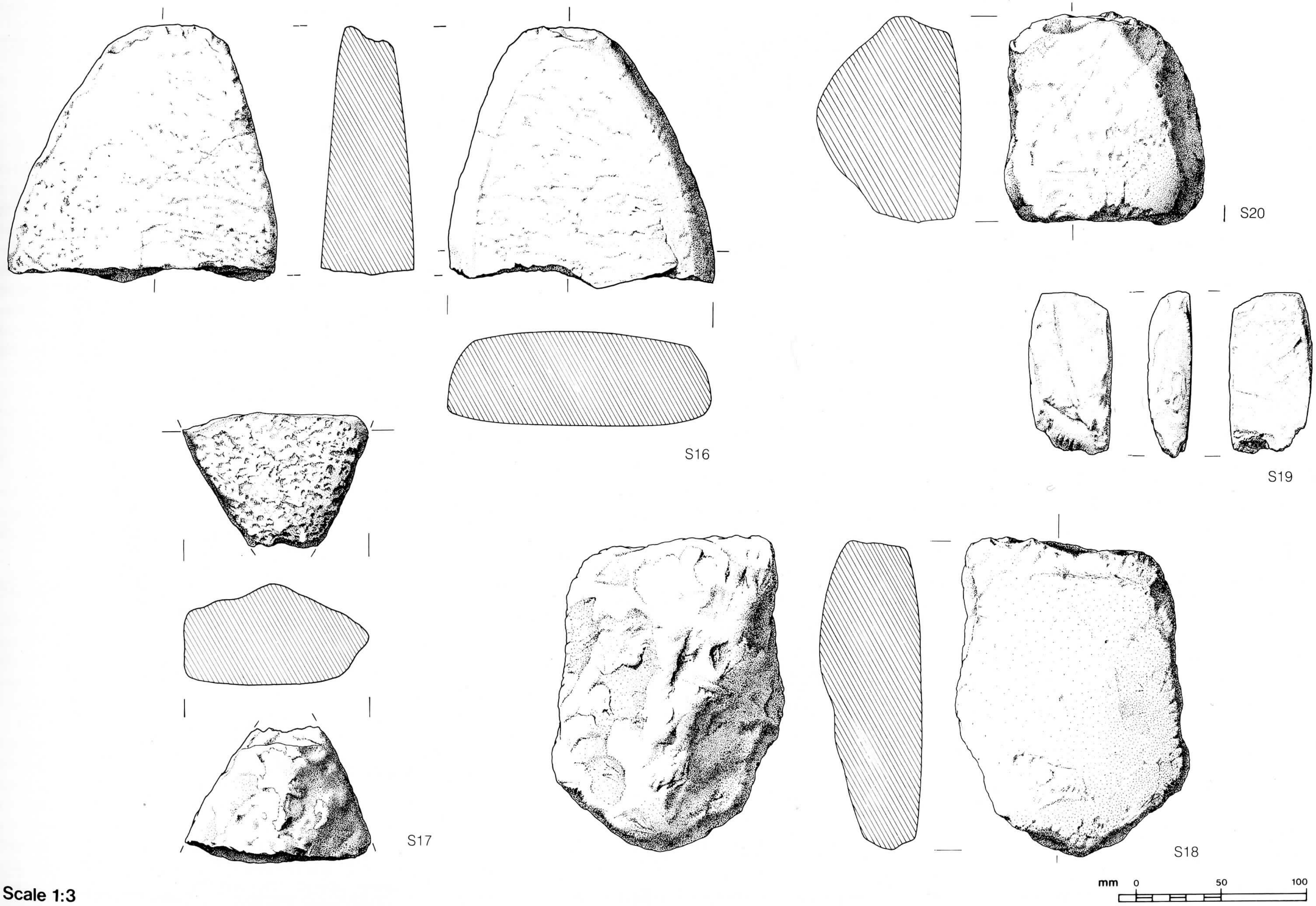
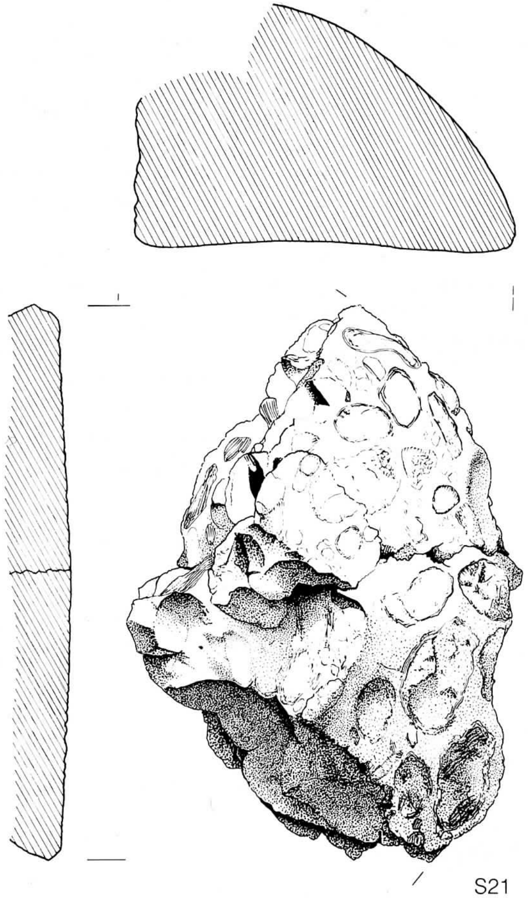
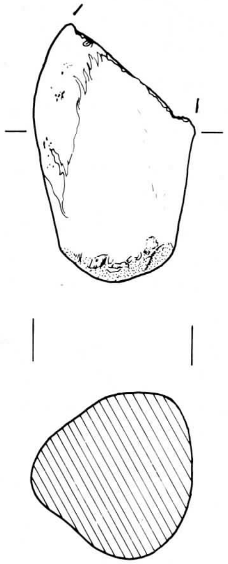
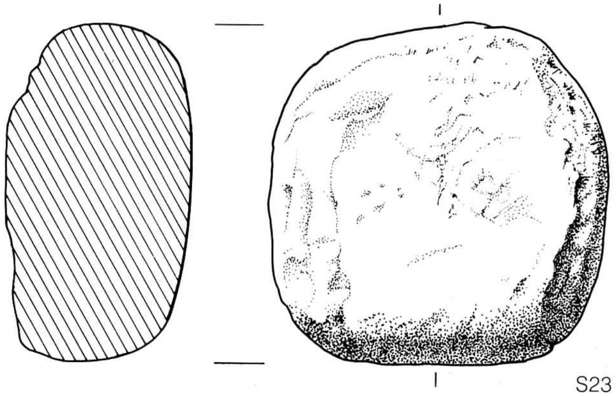


Fig 49 *Worked stone:* S16-S20


S21


S22


S23

Scale 1:3 mm 0 50 100 **Scale 1:2** mm 0 50

Fig 50 *Worked stone:* S21-S23

THE NEOLITHIC POTTERY

by H M Bamford

Introduction

1523 neolithic sherds were found during the excavation, ranging from very small fragments indeed to pieces measuring 110mm across. The condition of the sherds in the ground varied from good to a state of near disintegration, and it is likely that others may have dissolved entirely in the acid soil. It was not possible to reconstruct any complete pot profiles, but from those with enough diagnostic features to permit classification a minimum of 117 earlier neolithic vessels and thirty three later neolithic and Beaker vessels have been identified. These totals are undoubtedly a considerable underestimate of the actual number represented; it is felt, however, that any other basis for calculation would involve so many uncertain factors as to render it wholly unreliable. Estimates of the minimum numbers of vessels from each separate feature, based on fabric and forms, are given in microfiche Appendix 7:2.

The assemblage as a whole has been analysed by form, with separate discussion of the earlier and later neolithic types, and by fabric, and the stratigraphic distribution of the sherds has been examined according to these classifications.

Stratification of Pottery

Almost all the pottery was found in or on the surface of the neolithic ditch segments or in later neolithic features cutting them. Only a few sherds came from neolithic features in the interior: none were recognized on the subsoil surface and only one in a post-neolithic feature (49).

In several of the recut ditch segments, sherds from the same vessel were found distributed throughout the secondary infill of individual cuts or of two or more superimposed cuts; it must be supposed, therefore, that finds from later contexts often include a good deal of accumulated material residual from earlier use of the site. More rarely, sherds from the same vessel were identified in adjacent but stratigraphically separate features. Features 111 and 123C were linked in this way, as were 160 and 159A. Sherds from one vessel (NP15) which is of a particularly distinctive and durable fabric, were found in 160, 161, 162D, E, F, 165C, D and 179.

The Earlier Neolithic Pottery

The earlier neolithic sherds have been classified, where possible, by rim type and vessel shape according to schemes used in analysis of the pottery from Hurst Fen, Mildenhall (Clark et al 1960, 228) and from Broome Heath (Wainwright 1972, 23ff).

Rims

A. Simple, usually rounded in section but occasionally pointed or squared.
B. Rolled over or hooked.
C. Externally thickened.
D. Expanded.

T shaped and inturned rims were not present.

93% of all rim sherds found on Briar Hill conform to this system. Amongst those of type A are included a small number of beaded rims in which no thickening or rolling is apparent (NP34, NP37, NP67, NP73) and simple everted forms (eg NP55). On one unusual specimen (NP43) the rim has been ground flat after firing.

Vessel shape

I. Small vessels or cups with a maximum rim diameter of 120mm.
    IA. Carinated.
    IB. Uncarinated.
II. Uncarinated bowls in which the height is less than the greatest diameter.
    IIA. In which the diameters of the wall at mid-height and of the mouth are the same.
    IIB. 'Closed' or globular forms in which the greatest diameter is at mid-height.
    IIC. 'Open' forms with the greatest diameter at the mouth.
    IID. S profiled bowls with flaring rims and a diameter at the mouth greater than the maximum diameter of the body.
IV. Carinated Bowls.
    IVAi. With a straight neck profile and a rim diameter the same as that at the shoulder.
    IVAii. As IVAi but with a concave neck profile.
    IVBii. 'Closed' bowls with a straight neck profile and the greatest diameter at mid-height.
V. Bowls with a 'thumb groove' encircling the wall below the rim.

Types IVBi, IVCi and IVCii are not present in the assemblage.

TABLE 17: Earlier Neolithic Bowls: Distribution of Rim Types by Phase

	A	B	C	D	N/C	TOTAL
PHASE II	—	—	—	—	—	—
III	—	1	—	—	—	1
?III	—	1	—	—	—	1
IV	3	1	—	1	—	5
?IV	2	—	1	—	1	4
V	5	8	2	1	2	18
?V	4	2	1	2	—	9
VII/VIII	14	10	1	1	2	28
?VII/VIII	9	3	2	1	1	16
VIII	2	—	—	1	—	3
IX	—	—	1	—	—	1
TOTAL	39	26	8	7	6	86
	45.4%	30.2%	9.3%	8.1%	7.0%	

TABLE 18: Earlier Neolithic Bowl Forms: Distribution by Phase

	IA	IB	IIA	IIB	IIC	IID	IVA(i)	IVA(ii)	IVB(ii)	V	TOTAL
PHASE ?II	—	—	—	—	—	—	1	—	—	—	1
III	—	—	1	—	—	—	1	1	—	—	3
?III	—	—	—	—	—	—	—	—	—	—	—
IV	—	—	—	—	—	—	—	—	—	—	—
?IV	—	—	—	—	—	—	1	1	—	1	3
V	—	1	—	—	—	3	—	2	2	—	8
?V	—	1	2	—	1	—	—	—	—	—	4
VII/VIII	—	1	—	1	2	—	1	2	—	1	8
?VII/VIII	1	—	1	—	—	2	—	1	—	—	5
VIII	—	—	—	—	—	—	—	—	—	1	1
IX	—	—	—	—	—	—	—	—	—	—	—
TOTAL	1 3.0%	3 9.1%	4 12.1%	1 3.0%	3 9.1%	5 15.2%	4 12.1%	7 21.2%	2 6.1%	3 9.1%	33

Distribution of Forms and Rim Types

The numbers of classifiable rim and bowl forms and their distribution by phase is given in Tables 17 and 18 and the correlation of rim types and vessel shapes in Table 19. Rims of types A-C are found on both plain and carinated bowls, but type C is not found on the small cup forms, presumably for functional reasons.

None of the vessels can be reconstructed in its entirety but diameters of the rims and/or shoulders of some twenty six of them can be estimated. These are all between 90mm and 330mm but, insofar as can be determined in so small a sample, the distribution of sizes appears to be bimodal (Fig 51) showing a distinct division between smaller and larger pots.

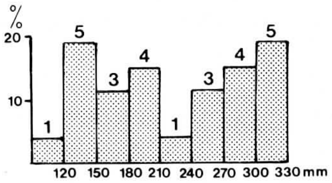


Fig 51
Neolithic pottery: frequency distribution of vessel diameters

TABLE 19: Earlier Neolithic Bowls: Correlation of Rim Types and Forms

	RIM TYPE A	B	C	D	TOTAL
FORM IB	1	2	—	—	3
IIA	2	2	—	—	4
IIB	—	1?	—	—	1
IIC	1	1	—	—	2
IID	1	—	1	—	2
IVA(i)	—	2	1	—	3
IVA(ii)	1	1	2	1	5
IVB(ii)	—	1	—	—	1
V	2	—	—	—	2
TOTAL	8	10	4	1	23

The thickness of the walls of individual vessels can vary by 2-3mm, but in the earlier neolithic pots is usually between 6-9mm, the extremes being 4mm and 14mm (NP60). Clear evidence of the precise method of construction is generally lacking although a few sherds, such as NP51, have clearly fractured along the lines of coils.

Lugs

One sherd with a horizontal, unperforated lug was found on the site (NP30).

Decoration

Only eleven of the earlier neolithic vessels from the site are decorated (see catalogue and microfiche Appendix 7:1). The incidence of decoration on classifiable rims and vessel forms is shown in Tables 20:1, 20:2 and their distribution by phase in Table 20:3. The decoration is restrained, confined to the rim on three examples and, in all but one instance, consists of scored lines or fluting done either with a finger tip or by burnishing with a narrow tool. Two vessels particularly worthy of note are NP15 in which the fluting extends over the rim, neck and shoulder internally and externally, and NP25 which has rows of faint circular impressions on the neck and shoulder.

TABLE 20: Earlier Neolithic Decorated Pottery

20:1 Bowl Forms

Form	IIA	IVA(i)	IVA(ii)	Total
No. of Vessels	1	1	2	4

20:2 Rim Types

Rim Type	A	B	C	D	N/C	Total
No. of Vessels	1	2	1	2	1	7

20:3 Distribution by Phase

Phase	III?	IV	IV?	V	VII	VII?	Total
No. of Vessels	1	1	1	2	4	2	11

Affinities

The affinities of the assemblage as a whole are with the neolithic pottery of Eastern England as summarised by Whittle (1977a, 82f) but there are indications that it may not be entirely homogeneous. Most of the forms represented fall within the range typical of the Grimston style and have close parallels in the pottery from Broome Heath, Norfolk (Wainwright 1972, 22ff).

When the general composition of the two assemblages is compared, however, there are certain differences. The range of shapes is similar although, on Briar Hill, carinated bowls form a slightly lower proportion of the total and no open carinated forms (IVC) have been identified. The ratio of plain (type A) to rolled (type B) rims is much higher from Briar Hill, however, (7.5:5 as compared with 1.8:5) and the more developed rim forms C and D are proportionally slightly better represented. Moreover, the range of decorated pottery from Briar Hill, limited though it is, is not matched on Broome Heath where, apart from some fluting on rims, only one example of decorated ware was found. In this respect, the Briar Hill assemblage has greater similarity to that from Swales Tumulus, Worlington, Suffolk, where the range of forms is wider and decoration slightly more common (Briscoe 1957, 107ff).

Vessels with decoration of the restricted type seen on NP3 and NP11 are not entirely unknown in assemblages of Grimston type wares, but at least two of the more heavily ornamented examples from Briar Hill, namely NP15 and NP25, have characteristics typical of the Mildenhall style as seen in the pottery from Hurst Fen (Clark et al 1960 – eg Figs 25 and 26, P52, P56). NP15 is also singled out by a distinctive non-local fabric unique on the site (see below, fabric D3) although there is no other significant correlation between the decorated pots and any particular form or fabric group.

Lugs, even the simple type of the single example found here, are not normally associated with Grimston style wares and are generally rare in the neolithic pottery of Eastern England, although in Yorkshire they have been found occasionally on plain, Towthorpe style bowls as at Beacon Hill, Flamborough Head (Manby 1964, 198). Perforated lugs or small strap handles occur sometimes on Mildenhall style pottery, for example in the Hurst Fen assemblage (Clark et al 1960, 239 Fig 28) and a plain, button type lug was found at Eaton Heath (Wainwright 1973, 28 Fig 14).

Briar Hill is within the known area of distribution of earlier neolithic decorated wares and of the Mildenhall style in particular (Smith 1974, Fig 15; Whittle 1977a, 78 Fig 11).

Chronology: The forms

The Grimston style had evidently a very long currency. The lengthy stratigraphic sequence and series of dates with which the type is associated on Briar Hill may be added to radiocarbon determinations from Broome Heath, Shippea Hill and Fengate which range respectively from 3474 bc±117 to 2217 bc±78 (Wainwright 1972 70-75), 3370 bc±120 to 3335 bc±120 (Clark 1962) and 3010 bc±64 to 2245 bc±50 (Pryor 1974, 38). Dates from Stacey Bushes, Milton Keynes, seem to suggest that the tradition may even have survived into the beginning of the second millennium bc but further confirmation of this is needed (Green 1976, 22; Whittle 1977a, 85).

The contexts of the finds of decorated earlier neolithic pottery from Briar Hill, which range from Phase IV to Phase VIII are consistent with Smith's argument that the Mildenhall decorated style had almost as early a genesis as the plain wares and a similar span (Smith 1974, 108), a conclusion which is supported by dates such as the one of 3145 bc±49 (BM 770) for Eaton Heath, Norwich (Wainwright 1973, 9).

Despite the detailed stratigraphic information from Briar Hill, the typology of earlier neolithic vessel forms cannot be shown to have more particular chronological significance. Finds of cups and plain bowls were concentrated mainly in Phase V or later contexts, whereas the carinated bowls are more evenly spread, but the total number of classifiable forms, especially in earlier contexts, is really too small for exact statistical analysis. The same is generally true of all rim types, although it may be noted that the thickened or expanded forms C and D, which are held to be more characteristic of the Mildenhall decorated style than of Grimston ware (Whittle 1877a, 86), were not found in any context earlier than Phase IV (see Table 17). The single lug (NP30) was found near the surface of a deposit (248B(2)) which has a *terminus ante quem* provided by a radiocarbon determination of 2470 bc±110 (HAR 5217), but it may have worked down the layer immediately above which is dated 2130 bc±70 (HAR 4066).

The Later Neolithic Pottery

Small quantities of at least four types of later neolithic pottery were found on the site; Grooved ware, Peterborough ware in the Mortlake and Fengate styles, and Beaker. All of these were from contexts which post-date the final recutting of the ditches but which span a fairly long period bracketed by radiocarbon determinations of 2420 bc±80 (HAR 4074) and 1590 bc±80 (HAR 2389).

Grooved Ware

A total of fourteen sherds of Grooved ware were found and, apart from one rim sherd (NP96) from the final infill of 248C, all of these were from the wall slots of 145 and one of the adjacent post pits, 314. The rim sherd, which is rounded with an internal bevel, corresponds to Longworth's type 21 (Wainwright and Longworth 1971, 56ff) and is decorated with one row of finger-nail impressions on the bevel and another externally, just below the rim. The remainder appear to be from two vessels and include part of a flat base as well as straight-profiled sherds decorated with applied vertical and horizontal cordons and, in one instance (NP79), random jabs in a panel between cordons. They cannot be classified with any degree of precision, but the characteristics are consistent with the Durrington Walls sub-style. The associated date of 2060 ± 90 bc (HAR 2607) from 145 is in agreement with dates from Durrington Walls and Stonehenge (Wainwright and Longworth 1971, 265f) and Mount Pleasant (Wainwright 1979, 186).

Mortlake Style

There are nine sherds in the Mortlake style decorated in characteristic manner with impressions of twisted cord, the articular ends of small bones or with the finger tip. Three are rim sherds, one of which (NP103) is everted with a slight external bevel over a short concave neck and with twisted cord impression on the inner face. The remaining two (NP81 and NP83) are emphatically thickened or expanded, with impressed ornament on the rim itself or internally. On NP81 this decoration, which includes finger tip impressions, is heavily plastic. The majority of the sherds are thick walled, but one (NP84) is exceptionally thin, measuring no more than 5mm. A minimum of seven vessels are represented from as many different contexts.

Fengate Style

Most of the twenty nine sherds of Fengate style pottery were from one context (124E(8)) and belong to the rim and upper part of a single squat bowl with widely splayed profile (NP85), but at least two more vessels seem to be represented by rim and body sherds from the upper infill of adjacent ditch-segments. The rims are typical of the style, being collared and densely ornamented with finger-nail impressions. On NP85 the heavy collar is covered with alternately hatched triangles, with a herring-bone design on the internal rim bevel, a row of oblique finger-nail impressions externally below the collar and horizontal lines below the rim on the inner face of the bowl. NP87 is from a rather lighter rim decorated externally with finger-nail impressed concentric arcs. A body sherd (NP88) in the same fabric (B1) and from the same context (123C(6)) is decorated with finger-nail impressions in horizontal rows. A flat base sherd (NP89) decorated with paired finger-nail impressions is probably also from a Fengate-style bowl; the form and decoration are not exclusively diagnostic, but the fabric (Group F) is one which is otherwise unique to NP85. All these examples have parallels among the pottery from the eponymous site near Peterborough (Leeds 1922).

Beaker

Beaker sherds are the most numerous amongst the finds of later neolithic pottery. Twenty eight decorated sherds are identifiable from a minimum of fourteen vessels, and there are a further 121 small, featureless body sherds in matching fabrics. The sherds were found in contexts of Phases VIII-IX and widely distributed across the southern half of the site.

Most of the sherds are too small to allow reconstruction of the vessel form but one (NP91) is from the rim of a large jar and others appear to be from a simple bowl with incurving rim (NP106). Both pots are decorated with simple, finger-pinched rustication and at least five more vessels with finger-pinched or finger-tip impressed decoration are represented, including one from 367 (NP94) with shallow, vertical pinched ribs and a cordon just below the rim. In addition, there are fragments of four vessels with comb-impressed horizontal lines, one with impressed 'herring-bone' decoration, one with horizontal and vertical incised lines, and one sherd of All-over-Corded Beaker (NP105). With the exception of this last, none can be attributed with any confidence to a particular stylistic group, and the assumption that the 'rusticated' sherds belong necessarily to the Beaker tradition might be considered questionable, were it not that fabric analysis seems to confirm it. Within that tradition finger-pinched decoration, and in particular the ribbed variety on NP94, is more common in association with David Clarke's East Anglian and Southern Beaker types than with any other, especially in domestic contexts (Bamford 1982, 60ff). Approximate parallels for the bowl, which is the most complete form represented, are listed in Clarke's corpus of Beaker pottery (1970, eg nos 164, 310, 531·1, 930·1, 981, 982, 1909) where they are for the most part identified as or associated with his All-over-Corded, Wessex/Middle Rhine and Southern styles, but most frequently and certainly with the latter. Undecorated bowls also occur in the Beaker assemblage from New Grange, Co. Dublin (Gibson 1982, NEW 1:22; NEW 3:11, ?12), and other possible examples, both comb-impressed and finger-tip rusticated, are to be seen among Beaker sherds from domestic sites illustrated by Gibson (eg FEN 4:6; RH 1:6; SF 4:7). As he points out (ibid 65), there may be many others lurking unrecognised within such fragmentary collections.

The intra-site evidence points to a date no earlier than c1850bc for the Briar Hill sherds, which would place them anywhere within Lanting and Van der Waals' steps 3-7 (1972) or Case's Middle and Late Phases (1977).

Indeterminate

A number of sherds from at least seven vessels are not susceptible to strict classification, although the forms, decoration and fabrics suggest that they are of later neolithic type, and all are from appropriately late contexts.

Two of the sherds are of fabric J1 which is otherwise associated with Mortlake ware. One (not illustrated) is decorated all over externally with faint, random comb impressions; the other (NP104) is from a rim expanded and squared in profile, with finger nail incisions on the rim itself and incised oblique lines on the external face. A further three sherds are of the related fabric group J2. Two of these are from rims; the first (not illustrated) has a massive external bevel decorated with twisted cord impressions; the second (NP80) is plain and squared with finger-nail impressions on the rim and external face. The third fragment (not illustrated) is a body sherd, somewhat eroded but with possible comb impressions or pin-point jabs on the external face. Most of the sherds from pit 337B are of an identical fabric, K1, and probably from the same pot. Almost all of these are plain except for a fragment of rim with an expanded profile and internal bevel, and a body sherd, both decorated with whipped cord 'maggot' impressions (NP97).

Finally, there is an undecorated rim sherd of expanded profile with internal bevel (NP61). The fabric (G3) is matched in earlier neolithic contexts, but the form more closely resembles an undecorated Beaker.

The Fabrics

Fresh fracture surfaces on all sherds were examined under

20× magnification. Ten distinct fabric groups were identified, defined chiefly on the basis of the principal inclusions and internal structure. Within each of these groups there is considerable variation, as is to be expected in prehistoric pottery, but most may be divided further into two or more sub-groups according to consistent characteristics such as texture and secondary inclusions.

Further to this examination, sherds of each main fabric group were thin sectioned.

Descriptions

General descriptions of each major fabric group together with a note of pottery types in which they occur are given below. Detailed descriptions of the sub-groups, including surface texture, structure, inclusions and colour range, together with thin section section descriptions, are given in microfiche Appendix 7:3.

Fabrics A1-A4

A1-A3 are very leached fabrics with plate-like or angular voids from which inclusions have disappeared. Sometimes tarry or whitish, calcareous residues survive which, together with occasional shell impressions, suggest that organic material and crushed limestone or fossil shell were once present, either separately or combined in varying proportion. A4 is a denser fabric containing visible finely crushed limestone or shell.

Apart from single sherds of fabrics A1 and A2 which are of Mortlake ware, all the classifiable sherds in these fabrics belong to earlier neolithic vessel types.

Fabrics B1 and B2

These also are leached fabrics with plate-like or angular voids, some of which contain a tarry or whitish calcareous residue indicative of both organic and limestone/shell inclusions. In addition, however, they contain frequent to abundant, poorly sorted quartz. Apart from one rim sherd and a basal sherd of Fengate style pottery which are of fabric B1 (NP87, NP88), all classifiable sherds of this group belong to earlier neolithic vessel types.

Fabric C

A fairly soft, sandy, vesicular fabric with some plate-like or angular voids and abundant, well-sorted, fine quartz.

All the classifiable sherds belong to earlier neolithic vessel types.

Fabrics D1-D4

Fairly hard, close, sandy fabrics with abundant, poorly-sorted quartz.

All but one of the classifiable sherds in these fabrics come from vessels of earlier neolithic type. The exception is from a Mortlake style bowl and is the only diagnostic fragment amongst the D2 sherds, although other, featureless sherds of this sub-group occurred in earlier neolithic contexts. Fabric D3 is particularly distinctive and proved, on thin sectioning, to be quite different from the rest of the group. The very sandy clay containing glauconite and crushed flint is not from a local source. All the sherds of this particular group have a wet-hand surface finish and it is likely that they are from a single bowl in the Mildenhall style (NP15).

Fabrics E1-E4

Fairly hard, close fabrics gritted with crushed flint and crushed polycrystalline quartz.

All the sherds of fabrics E1-E3 are from earlier neolithic contexts, and the classifiable sherds are from vessels of earlier neolithic type. Sherds of E4, on the other hand, occurred only in levels dated to the later neolithic period, and those which have diagnostic features are from a bowl or bowls of Mortlake type.

Fabric F

A fairly hard, contorted laminar fabric containing grog and sparse crushed flint and polycrystalline quartz.

This is an exclusively later neolithic fabric type and most of the sherds are from two vessels in the Fengate style. A large base sherd with finger-pinched ornament (NP89) is probably from a similar pot, although the same technique was used to decorate Beaker coarse ware.

Fabrics G1-G3

A fairly hard fabric containing common to abundant grog, varying amounts of quartz and some ironstone.

The majority of the sherds in these fabrics were found in earlier neolithic levels and all the forms which can be classified with certainty are of earlier neolithic type. There is, however, one rim sherd in sub-group G3 which might be from an undecorated Beaker (NP61).

Fabrics H1-H3

Hard fabrics containing grog and varying amounts of quartz but of different structure to Fabrics G1-G3.

All three sub-groups were found only in later neolithic (Phase IX) contexts, and all the classifiable sherds are from Beakers, including comb-impressed, cord-impressed and finger-tip 'rusticated' variants.

Fabrics J1-J2

Fine, hard fabrics with very few inclusions but elongated curvilinear voids indicative of organic temper.

These were found exclusively in later neolithic contexts and the classifiable sherds are all from later neolithic decorated vessels, some of which are identifiable as Mortlake style.

Fabrics K1-K2

Hard, coarse fabrics containing crushed fragments of fine sandstone together with some quartz. Fabric K1 is very similar to fired samples of untreated clay from the site and shows no sign of having been wedged or tempered.

Both variants occurred only in later neolithic contexts. The sherds in fabric K2 include fragments of at least two Grooved ware vessels. Sherds in fabric K1 include two with whipped cord 'maggot' impressions, although the pottery style is not identifiable.

Fabrics — Chronology and Associations

The correlation of fabric groups or sub-groups with vessel types is shown in Tables 21-24 and it may be seen that the fabrics of earlier and later neolithic pots are very largely distinct. Amongst the latter, indeed, there appear to be exclusive associations of certain fabrics with individual ceramic styles, an observation which may be important in view of the current debate concerning the precise cultural significance of these styles and of their inter-relationship. The identification of Beaker pottery of various kinds with Fabrics H1-H3 is the most notable example. There does not seem to be any significant correlation between sherd thickness and fabric type, although there is a general tendency for later neolithic pottery to be thicker walled.

A sherd count of fabrics tabulated by stratigraphic phase (Table 25) also serves to demonstrate the separateness of later neolithic fabric groups and indicates, furthermore, that some of those associated with earlier neolithic pottery types may have a relatively limited chronological distribution.

Of the fabrics associated primarily with earlier neolithic pottery, A1-A3 are by far the most common; over 62% of all neolithic sherds from the site were of these groups. Fabrics B1 and C, the next most common, constitute only 4·9% and 5·6% of the total respectively, and fabrics E1-E3 are rare, (each less than 1% of the total).

Fabrics A1-A3 occurred in all neolithic phases, although in Phase IX they form only a small proportion of the total and must be regarded as largely residual in that context. Shifts in the proportions in which these were found in successive phases suggest that from Phase V onwards A2, a generally harder, finer variant, increased in importance

TABLE 21: Earlier Neolithic Bowls: Correlation of Rim Types and Fabrics

	RIM TYPE					
	A	B	C	D	N/C	TOTAL
FABRIC A1	11	8	1	1	—	21
A2	10	8	1	3	3	25
A3	3	2	3	1	—	9
A4	1	1	—	—	—	2
B1	3	—	2	—	—	5
B2	2	3	—	—	—	5
C	4	1	1	—	—	6
D1	3	—	—	—	—	3
D3	—	—	—	1	—	1
D4	—	—	—	—	1	1
E1	1	—	—	—	—	1
E2	—	—	—	—	1	1
G1	1	2	—	1	1	5
G3	—	1	—	—	—	1
TOTAL	39 45.3%	26 30.2%	8 9.3%	7 8.1%	6 7.0%	86

relative to the other two, but since the total quantity of pottery surviving in the earlier phases is small, this trend is not conclusive.

Fabric C was probably in use in Phase II also, although this cannot be established firmly on the stratigraphic evidence. The radiocarbon date of 3490bc ± 110 (HAR 2282) from 77A, which was obtained from a deposit containing sherds of this group nevertheless supports an early date.

Apart from a single sherd of D1 in the secondary infill of 251B(5) (Phase III), the remaining earlier neolithic fabrics, including the quartz and flint gritted (?) wares, first occur in contexts dated to Phase IV or later. Sherds of A4 and G1 are securely stratified in Phase IV primary contexts, in 124C(1) and 165C(1) respectively. Sherds of D3, E1 and G3 occur in secondary infills of neolithic ditch recuts dated to this phase and can certainly be regarded as having been introduced by Phase V, but sherds of fabrics E2 and E3 were found in Phase VII/VIII recuts only, and the only sherds of D1 which can be dated earlier than this, other than the exception already mentioned, are from very small recut pits 163B and 166B in which the precise stratification of finds is of doubtful significance.

The fabrics and associated later neolithic pottery types stratified entirely in features or layers of Phases VIII and IX are not, for the most part, easy to date more closely, either absolutely or relative to one another, on the evidence of

TABLE 22: Earlier Neolithic Bowl: Correlation of Forms and Fabrics

	FORM										
	IA	IB	IIA	IIB	IIC	IID	IVA(i)	IVA(i)	IVB(ii)	V	TOTAL
FABRIC AI	—	—	4	—	1	1	—	2	—	2	10
A2	—	—	—	—	1	1	—	2	2	1	7
A3	—	—	—	—	—	2	3	2	—	—	7
B1	1	1	—	—	—	—	—	—	—	—	2
B2	—	2	—	—	—	1	—	—	—	—	3
C	—	—	—	—	—	—	1	—	—	—	1
D1	—	—	—	—	1	—	—	—	—	—	1
D3	—	—	—	—	—	—	—	1	—	—	1
G1	—	—	—	1	—	—	—	—	—	—	1
TOTAL	1 3.0%	3 9.1%	4 12.1%	1 3.0%	3 9.1%	5 15.2%	4 12.1%	7 21.2%	2 6.1%	3 9.1%	33

Table 23: Earlier Neolithic Decorated Pottery: Fabrics

Fabric	A1	A2	A3	B2	C	D3	G2	Total
No. of Vessels	2	2	3	1	1	1	1	11

their stratigraphic contexts. Exceptions are K2 (Grooved ware) of which all the sherds but one came from the adjacent features 145 and 314, associated with the radiocarbon determination of 2060bc ± 80 (HAR 2607), and K1 (pottery type indeterminate) of which all the sherds but one were from a later neolithic pit 337B and thus associated with the radiocarbon determination of 1590bc ± 80 (HAR 2389). Fabric F (Fengate style pottery) also has a very restricted distribution, twenty four sherds being from 124E (7-8) and the remaining two from similar levels in adjacent features, but the exact date is uncertain.

The loose association in the same context of sherds of various fabrics, as shown in Table 26, does not necessarily prove that all the later neolithic pottery is exactly contemporary. Many of the sherds in question are single representatives of their type in any given context, and the contexts themselves are chiefly layers in the final (slow) infills of ditches and thus probably have a fairly broad date range.

Subject to this qualification, sherds of fabrics H1-3, which are all from Beakers where identifiable at all, were found in association with all the other later neolithic fabrics, but impressed ware fabrics E4, J1, J4 and F do appear to be stratigraphically separate from Fabrics K1 and K2.

Manufacture

The variety of different fabrics identified in the earlier neolithic pottery on Briar Hill is large compared with other major published neolithic assemblages including some, such as that from Broome Heath, which may have a comparable date range. This variety could, therefore, be interpreted as a product, not simply of the very long use of the enclosure, but perhaps also of its use by a number of distinct communities of contemporary date. The characteristics of all the fabrics except D3 are nevertheless consistent with manufacture in the Northampton area.

The thick upper lias clay deposits which underlie the

TABLE 24: Later Neolithic Pottery: Correlation of Pottery Types and Fabrics

	POTTERY TYPE						
	PETERBOROUGH		GROOVED WARE	BEAKER		INDETERMINATE	TOTAL
	Mortlake	Fengate		Comb/Cord Impressed	Finger Nail 'Rusticated'		
FABRIC A2	1	—	—	—	—	—	1
A3	1	—	—	—	—	—	1
B1	—	1	—	—	—	—	1
D2	1	—	—	—	—	—	1
E4	1	—	—	—	—	—	1
F	—	2	—	—	—	—	2
G3	—	—	—	—	—	1?	1
H1	—	—	—	1	5	—	6
H2	—	—	—	4	—	—	4
H3	—	—	—	2	2	—	4
J1	3	—	—	—	—	3	6
J2	—	—	—	—	—	2	2
K1	—	—	—	—	—	1	1
K2	—	—	2	—	—	—	2
TOTAL (Min. No. Vessels)	7	3	2	7	7	7	33

TABLE 25: Neolithic Pottery. Sherd Count

		FABRIC GROUP																										
		A1	A2	A3	A4	B1	B2	C	D1	D2	D3	D4	E1	E2	E3	E4	F	G1	G2	G3	H1	H2	H3	J1	J2	K1	K2	TOTAL SHERDS
PHASE II		3	3	8																								14
	%	21.4	21.4	57.2																								
?II		1	4	1				5																				11
	%	9.1	36.4	9.1				45.4																				
III		17	3	13					?1																			34
	%	50.0	8.8	38.2					2.9																			
?III		16	6	5		3																						30
	%	53.3	20.0	16.7		10.0																						
IV		26	7	15	1	5		6			2		1					2		1								66
	%	39.4	10.6	22.7	1.5	7.6		9.1			3.0		1.5					3.0		1.5								
?IV		5	9	15		1	1			2								1										34
	%	14.7	26.5	44.1		2.9	2.9			5.9								2.9										
V		47	74	26		11	1	19	2		3	1	2					2		2								190
	%	24.7	38.9	13.7		5.8	0.5	10.0	1.1		1.6	0.5	1.1					1.1		1.1								
?V		40	65	32	3	15	1	10	2		5	1						12	1									187
	%	21.4	34.8	17.1	1.6	8.0	0.5	5.4	1.1		2.7	0.5						8.4	0.5									
VII/VIII		105	159	27	6	13	5	37	5	4	4	3	3	3	4			16	2	3				2				401
	%	26.2	39.7	6.7	1.5	3.2	1.3	9.2	1.3	1.0	1.0	0.7	0.7	0.7	1.0			4.0	0.5	0.7				0.5				
?VII/VIII		50	51	39	2	17	6	7	2	1			2					8	1					2				188
	%	26.6	27.1	20.7	1.1	9.1	3.2	3.7	1.1	0.5			1.1					4.3	0.5					1.1				
VIII Interior		22	9	4	2	1		1	2	5											3	3	3	1	1		13	70
	%	31.4	12.9	5.7	2.9	1.4		1.4	2.9	4.1											4.3	4.3	4.3	1.4	1.4		18.6	
IX Ditch Fills		6	6	7	1	9		1	4	2		5				5	26	8	3	5	24	4	94	6	7	1	1	225
	%	2.7	2.7	3.1	0.4	4.0		0.4	1.8	0.9		2.2				2.2	11.6	3.6	1.3	2.2	10.7	1.8	41.8	2.7	3.1	0.4	0.4	
IX Pits		14	3	8	1																	3	15	1	2	26		73
	%	19.2	4.1	11.0	1.4																	4.1	20.5	1.4	2.7	35.6		
TOTAL SHERDS		352	399	200	16	75	14	86	18	14	14	10	8	3	4	5	26	49	7	11	27	10	112	12	10	27	14	1523
	%	23.1	26.2	13.1	1.0	4.9	0.9	5.6	1.2	0.9	0.9	0.7	0.5	0.2	0.3	0.3	1.7	3.2	0.5	0.7	1.8	0.7	7.4	0.8	0.7	1.8	0.9	

ironstone on Briar Hill outcrop within 100m of the neolithic enclosure. Samples were obtained from these and fired at 700°C for comparison with the pottery fabrics from the site. In these samples quartz and ironstone were present in varying quantities and proportions, and also gypsum crystals, visible in thin section. The sand which occurs to some extent in most of the pottery fabrics in the form of quartz and ironstone is comparable to these samples and indicative of local manufacture, and gypsum, or the distinctive hexagonal voids left by the leaching out of gypsum crystals, was noted in thin sections of Fabric C and possibly Fabric K1.

Calcitic wares, a term which covers all pottery with abundant shell or limestone inclusions and thus applies to fabrics A1-A4, B1 and B2, are common in the regional pottery traditions of the East Midlands from the neolithic period until at least the fourteenth century AD, a fact which seems connected intimately with the local outcropping of the Jurassic system. Whether the calcareous inclusions occur naturally in the clays used or were deliberate additions is hard to establish (Hunter 1979 230ff).

The organic inclusions which seem to have been present in some fabrics (A1-A3, J1 and J2) may have been added deliberately, as also the larger fragments of crushed polycrystalline quartz and flint in Fabrics D and E. Grog was added to Fabric F, G, H and J, and it may be noted that all of these except G have exclusively later neolithic associations.

The only fabric which is clearly of non-local origin is D3, the nearest possible source of clay with comparable inclusions being at least twenty miles distant and possibly more (D Williams in microfiche Appendix 7:3). It is associated with a pot or pots of a type different in style and finish from and technically superior to any other on the site.

The identification of individual later neolithic fabrics with particular ceramic styles and the possible implications of this have been touched on already. It suggests, in fact, that even where their stratigraphic context is broadly contemporary, and whether or not they were in use by the same community, the various styles may have been manufactured quite separately. The occurrence of Mortlake style decorated sherds in fabrics A1, A3 and D2, which are otherwise associated with earlier neolithic types may, on the other hand, be held to reflect the continuity between the two traditions, long established on stylistic grounds. The exclusively later neolithic fabrics are, nonetheless, also probably local products. Fabric E4, for example, is closely similar to one of the fabrics associated with Mortlake style pottery on the later neolithic occupation site at Ecton (Fabric II: Bamford 1975, 12, 14) and Fabric H3 is very like Ecton Fabric V in what were identified tentatively as Beaker sherds from the same site.

The group of sherds of Fabric K1 from pit 337B include some which seem to be from a pot or pots shattered in firing. They were found in fill heavily blackened with charcoal and burnt stone and were associated with fired clay lumps which could be potter's waste, albeit of a different fabric. They also include what is apparently a child's doodle, judging by the size of the finger-nail marks in the clay (NP98). This body of material constitutes the most likely direct evidence of the manufacture of pottery on or close to the site.

TABLE 26: Associated Finds of Sherds of Later Neolithic Fabrics

CONTEXT	FABRIC	POTTERY TYPE	NO. SHERDS
25E (4)	H1-3	Beaker	85
	J2	Indeterminate	1
	K1	Indeterminate	1
124E(8)	E4	?Mortlake	1
	F	Fengate	18
	H1	Beaker	3
	H3	Beaker	2
	J1	?Mortlake	1
	J2	Indeterminate	2
147C(6)	F	Fengate	1
	J2	Indeterminate	1
172(8)	E4	Mortlake	2
	J2	Indeterminate	1
	H3	?Beaker	1
248C(7)	H3	?Beaker	1
	K2	Indeterminate	1
145	H2	?Beaker	1
	H3	?Beaker	2
	K2	Grooved ware	5
337B	H3	?Beaker	1
	J2	Indeterminate	1
	K1	Indeterminate	25
368	J1	?Mortlake	1
	J2	Indeterminate	1

Abbreviated Catalogue of Illustrated Pottery
(Full descriptions in microfiche Appendix 7:1)

Neolithic Bowls

Ill. No.	Sherds(s)	Class Rim	Class Body	Dec.	Fabric	Context	Phase
NP 1	Body		IVA(i)?		A3	200A	II?
NP 2	Rim	B	IVA(i)		A3	176B(1)	III
NP 3	Rim	B	IIA	X	A1	251B(1)	III
NP 4	Rim	B			A1	165C(8)	IV
NP 5	Rim	A			C	165C(8)	IV
NP 6	Rim	D			A3	162C(2)	IV
NP 7	Rim	A			A2	181B(2)	IV
NP 8	Rim	A			C	181B(2)	IV
NP 9	Rim	A	V		A1	166B(4)	IV?
NP10	Rim/shoulder	A	IVA(ii)		A3	14B(3)	IV?
NP11	Rim/shoulder	C	IVA(i)	X	A3	200C(1)	IV?
NP12	Rim/shoulder	C	IID		A3	53B(1)	V
NP13	Rim	B	IB		B2	165D(5)	V
NP14	Rim	A			E1	165D(2)	V
NP15	Rim/shoulder	D	IVA(ii)	X	D3	165D(3)	V
NP16	Rim	B			A1	165D(5)	V
NP17	Rim	B			A3	165D(3)	V
NP18	Rim	B			A2	162D(4)	V
NP19	Rim	B	IVB(ii)?		A2	163C(3)	V
NP20	Rim/shoulder	C	IVA(ii)		A2	163C(3)	V
NP21	Shoulder		IVB(ii)		A2	163C(3)	V
NP22	Rim	A			A1	163C(3)	V
NP23	Rim	A			A2	163C(3)	V
NP24	Rim	B		X	C	163Cs	V?
NP25	Shoulder		IVA(ii)	X	A1	124D(1)	V
NP26	Rim	A			A2	129(1)	V
NP27	Rim	B			A1	129(1)	V
NP28	Rim	B			A2	129(2)	V
NP29	Rim	A			A2	248B(2)	V
NP30	Lug				A2	248B(2)	V
NP31	Rim	B	IIA		A1	161(5)	V?
NP32	Rim	A	IB		B1	160(6)	V?
NP33	Rim	A	IIA		A1	160(4)	V?
NP34	Rim	A-beaded			G1	160(7)	V?
NP35	Rim	D			A2	159A(1)	V?
NP36	Rim	D			A2	159A(2)	V?
NP37	Rim	A-beaded			A1	169B(3)	V?
NP38	Rim	A			B1	165D(9)	VII
NP39	Rim	A			A3	165D(9)	VII
NP40	Rim	A			A4	165D(9)	VII
NP41	Rim	B			A1	165D(9)	VII

NP42	Rim	A			C	165D(9)	VII
NP43	Rim	A	IIC		D1	162E(2)	VII
NP44	Rim	A			A2	162E(7)	VII
NP45	Rim	A			A2	162E(7)	VII
NP46	Rim	B			A4	162E(7)	VII
NP47	Rim	A			A2	162F(3)	VII/VIII
NP48	Rim	B	IB		B2	163D(1)	VII
NP49	Rim	B			A1	163D(1)	VII
NP50	Rim	B	IIC		A2	163D(2)	VII
NP51	Rim	B	IVA(i)?		B2	163D(3)	VII
NP52	Rim	A			C	163D(2)	VII
NP53	Rim	A			A2	163D(2)	VII
NP54	Rim	B			G3	163D(3)	VII
NP55	Rim	A			A2	174 (5)	VII
NP56	Body			X	A3	174 (4)	VII
NP57	Rim	B	IVA(ii)?		A2	172C(7)	VII
NP58	Rim	A	V		A2	124E(6)	VII/VIII
NP59	Rim	B			G1	124E(1)	VII
NP60	Rim	B	IIB?		G1	124E(7)	VIII
NP61	Rim	C			G3	124E(8)	IX
NP62	Rim	A			A2	158B(4)	VII?
NP63	Rim	B			A2	158B(3)	VII?
NP64	Rim	B			A2	158B(3)	VII?
NP65	Rim/shoulder	C	IVA(ii)		A3	158B(1)	VII?
NP66	Rim	B			A1	158B(3)	VII?
NP67	Rim	A-beaded			A1	159B(1)	VII?
NP68	Rim	A	IIA		A1	169C(2)	VII?
NP69	Rim	A			A3	180 (3)	VII?
NP70	Rim	N/C		X	A1	167D(3)	VII?
NP71	Rim/shoulder	A	IID		B2	82(3)	VII?
NP72	Rim	A			D1	179(3)	VII?
NP73	Rim	A-beaded		X	B2	179(2)	VII?
NP74	Shoulder		IA		B1	179(3)	VII?
NP75	Rim	D			A2	179(4)	VII?
NP76	Rim	C			B1	179(3)	VII?
NP77	Body			X	A2	162E(?)	VII?

Later Neolithic Pottery

NP78	Body	Grooved ware		X	K2	314	VIII
NP79	Body	Grooved ware		X	K2	314	VIII
NP80	Rim			X	J2	182	VIII?
NP81	Rim	Mortlake		X	E4	172C(8)	IX
NP82	Body	Mortlake		X	D2	152C(3)	IX
NP83	Rim	Mortlake		X	A3	368	IX
NP84	Shoulder	Mortlake		X	A2	368	IX
NP85	Rim	Fengate		X	F	124E(8)	IX
NP86	Body	Beaker?		X	H1	124E(8)	IX

NP87	Rim	Fengate	X	B1	123C(6)	IX
NP88	Base	Fengate	X	B1	123C(6)	IX
NP89	Base	Fengate	X	F	147C(6)	IX
NP90	Body	Beaker?	X	H2	23B(5)	IX
NP91	Rim	Beaker	X	H1	26C(3)	IX
NP92	Body	Mortlake	X	J1	28F(5)	IX
NP93	Rim	Beaker	?	H3	367	IX
NP94	Neck	Beaker	X	H3	367	IX
NP95	Body	Beaker	X	H3	367	IX
NP96	Rim	Grooved ware?	X	K2	248C(7)	IX
NP97	Rim/body	N/C	X	K1	337B	IX
NP98	Thumb-pot	Child's doodle?		K1	337B	IX
NP99	Rim	Beaker	X	H2	348	IX
NP100	Body	Beaker	X	H3	25E(4)	IX
NP101	Body	Beaker	X	H1	25E(4)	IX
NP102	Body	Beaker	X	H2	25E(4)	IX
NP103	Rim	Mortlake?	X	J3	31D(4)	IX
NP104	Rim	N/C	X	J1	195C(3)	IX
NP105	Body	AOC beaker	X	H3	247C(5)	IX
NP106	Rim/body	Beaker bowl	X	H1	Subsoil	Surface
BAP1	Body	Bronze age urn			264	X

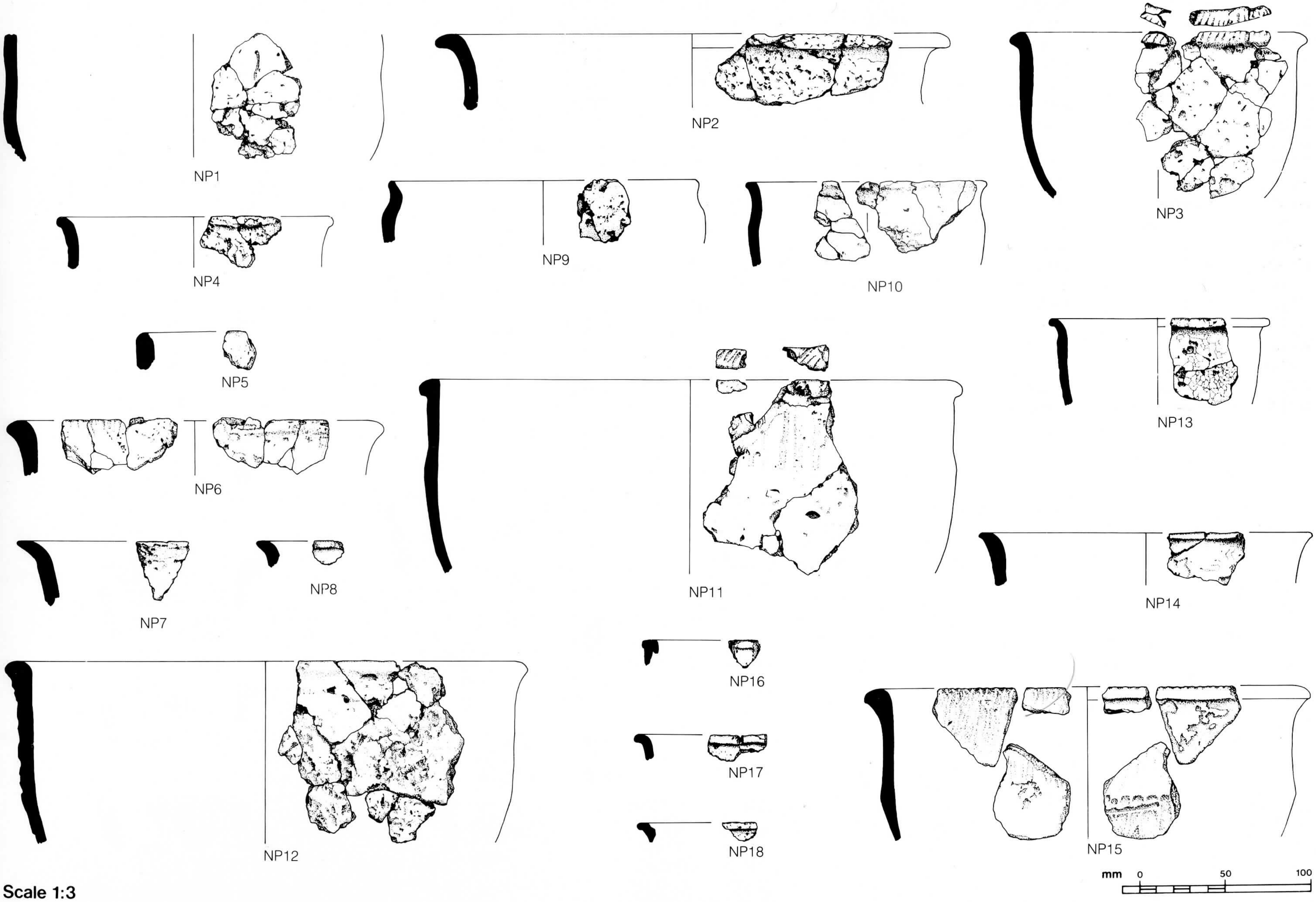


Fig 52 *Neolithic pottery:* NP1-NP18

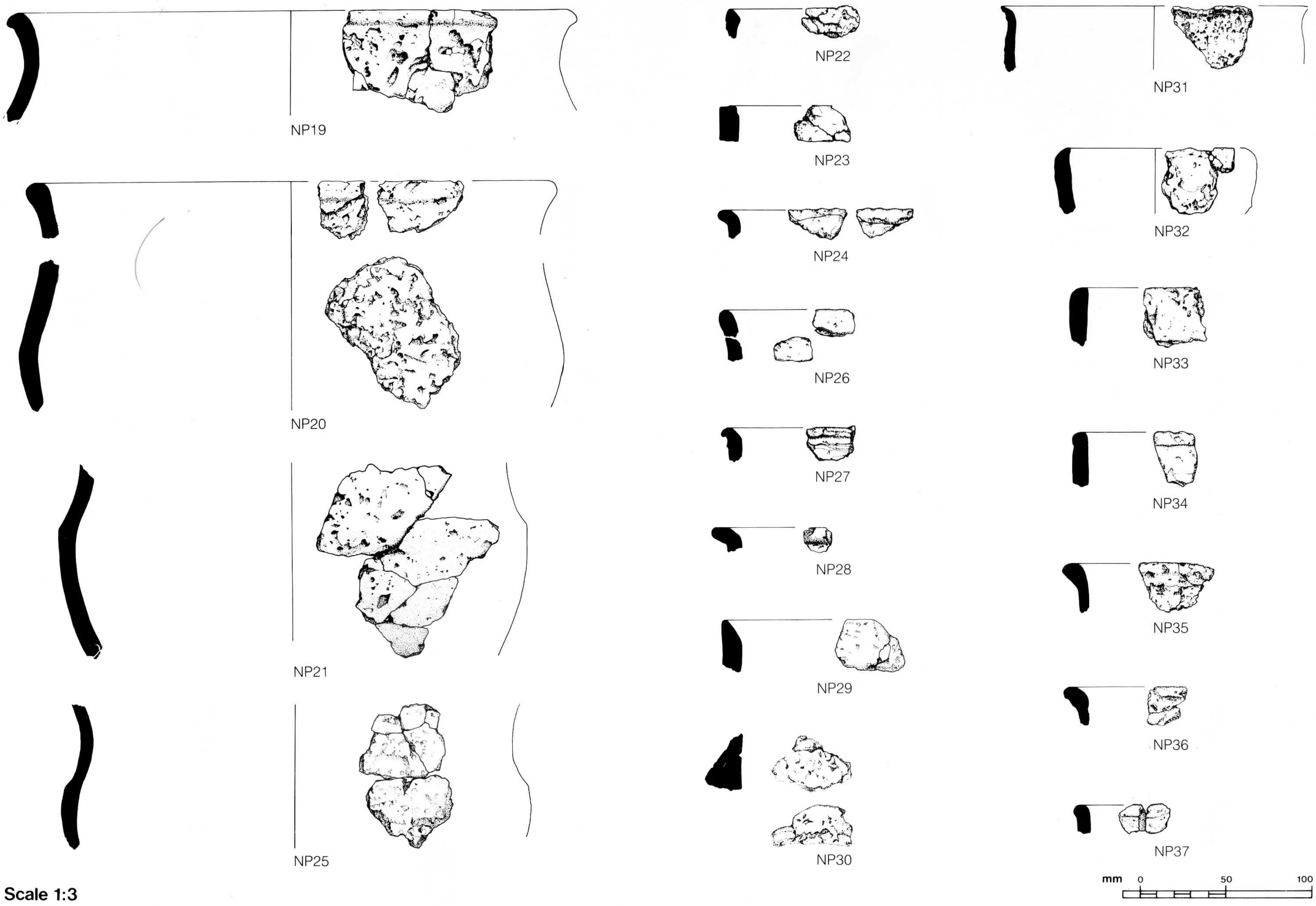
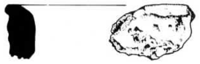


Fig 53 *Neolithic pottery:* NP19-NP37

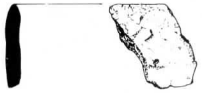

NP38


NP39


NP40


NP41


NP42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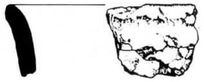
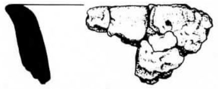

NP45


NP46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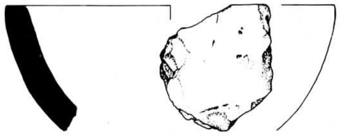
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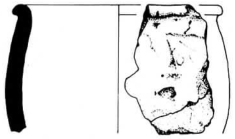
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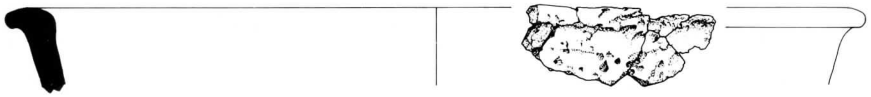
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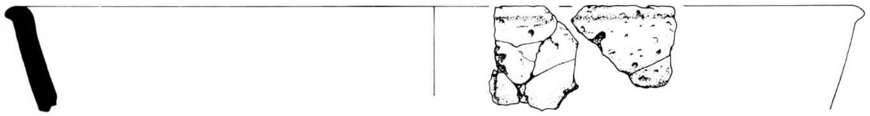
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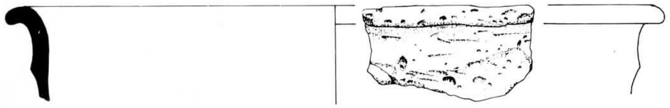
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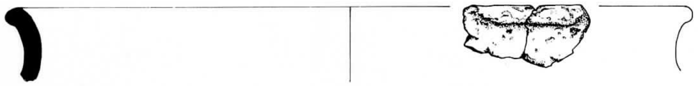

NP57

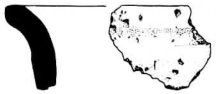

NP52


NP53

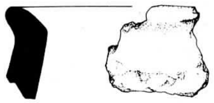

NP54

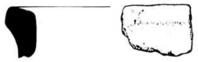

NP55


NP56


NP58


NP59


NP60


NP61

Scale 1:3

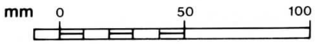


Fig 54 *Neolithic pottery:* NP38-NP61

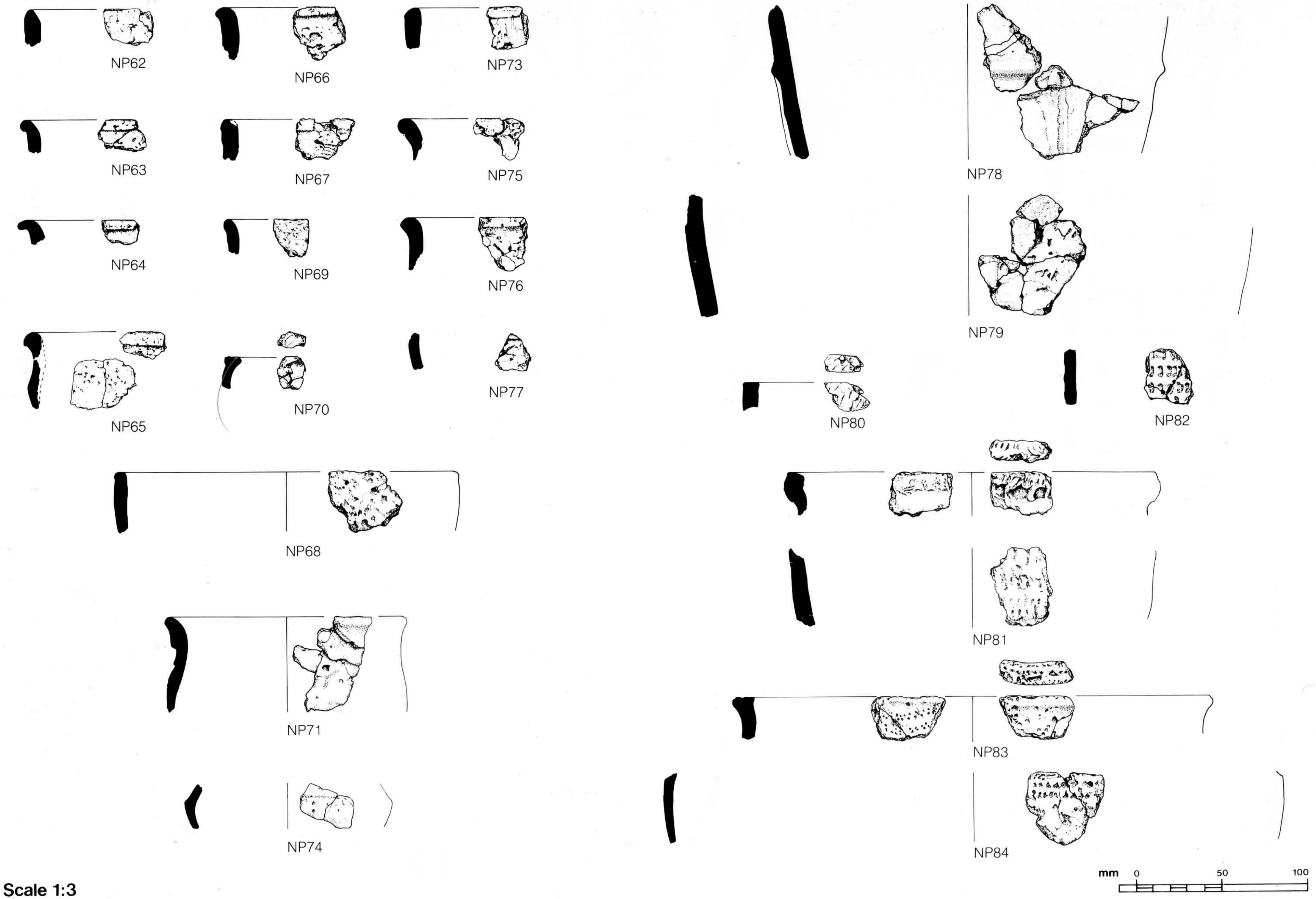


Fig 55 *Neolithic pottery:* NP62-NP84

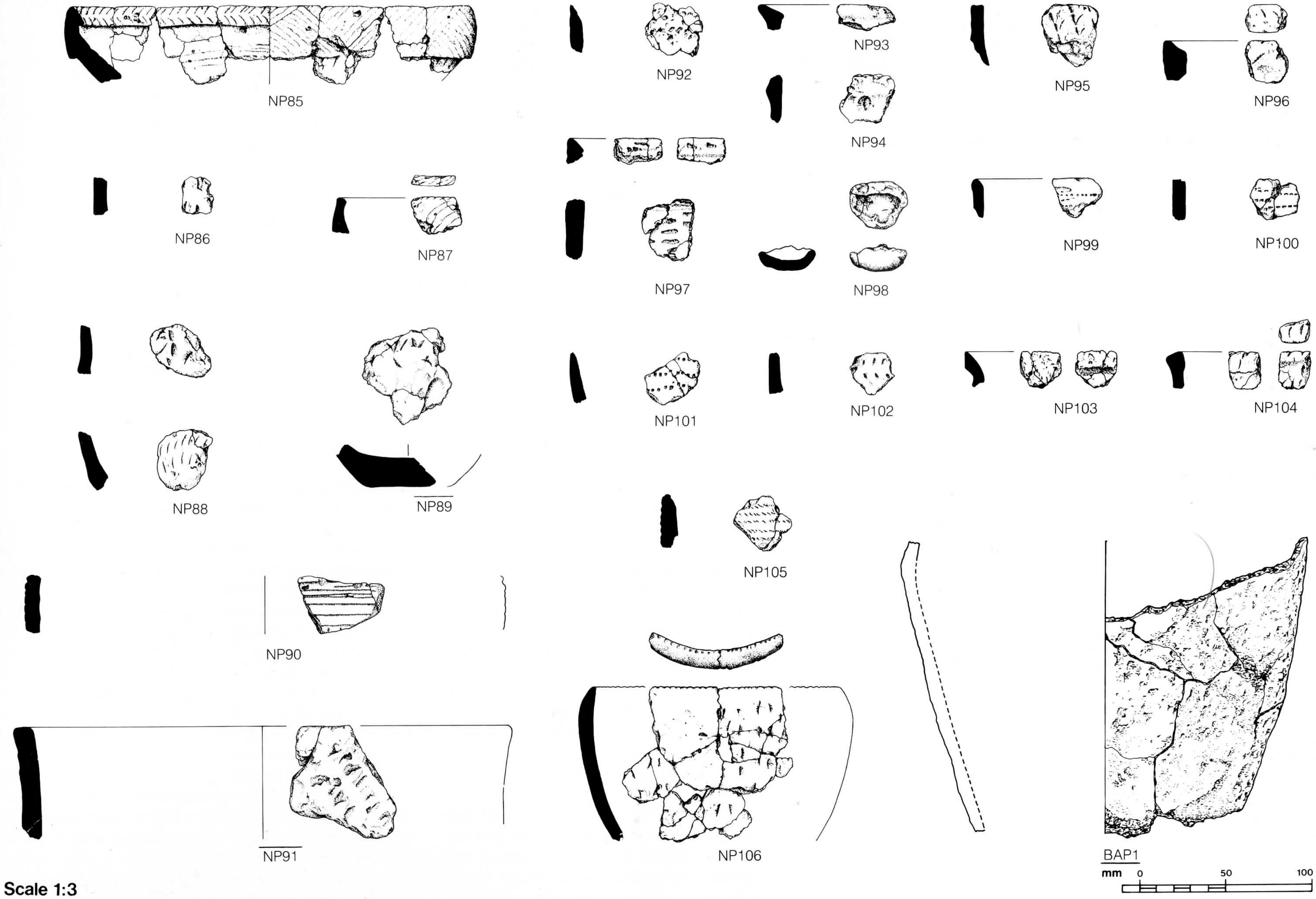


Fig 56 *Neolithic pottery:* NP85-NP106, BAP1

FIRED CLAY LUMPS FROM NEOLITHIC CONTEXTS

by H M Bamford

Thirty irregular lumps or pellets of fired clay were found in neolithic contexts on the site, mostly dated to phase VII or later. Their weight ranges between 5g and 60g. Seven of them are marked with impressions of finger-tip or finger-nails.

Eighteen are of fabrics which resemble those identified in earlier neolithic pottery sherds, the majority being of group G; three others are of group B2 and two of group C. These might well be waste from pottery manufacture. The fabric of the remainder is variable and, for the most part, does not appear to have been wedged or tempered. Inclusions such as quartz and gypsum crystals suggest that the clay could be from deposits immediately adjacent to the site (see microfiche Appendix 7:4). Details of the types and their distribution are given in microfiche Appendix 7:5.

The largest single loosely associated group consists of six pieces of fabric G1 from 165D and a seventh, possibly residual fragment in 162F. All the stratified examples in ungrouped fabrics can be dated to Phases VIII-IX.

One piece of very coarse, vesicular fabric from a later neolithic pit (368) includes the impression of a thin rod and could be interpreted as being from an oven or kiln structure. Similar fragments have been found associated with Beaker pottery on a number of domestic occupation sites (Bamford 1982, 29).

BRONZE AGE CREMATION URNS

by H M Bamford

The four bronze age cremation urns were in an extremely poor state of preservation when found and are fragmentary. The fabric is very leached, with many voids probably left by an organic temper, and is very poorly fired and soft. When excavated it lacked all cohesion, sometimes surviving only as a stain in the soil, and what remained of the pots had to be consolidated with PVA emulsion before being lifted in a block with the contents.

All four appear to have been bucket-shaped. There was no trace of decoration on any of them although, since the surfaces are eroded and they all lack their rims, it is impossible to be sure that they were not decorated originally.

The most complete example (Fig 56 BAP 1), which was from cremation pit 264, had a basal diameter of approximately 150mm, a maximum diameter of 230mm and survived to a height of 170mm. The maximum diameters of the remaining three ranged from 150mm in cremation 267 to 300mm in cremation 275.

THE PRE-BELGIC IRON AGE POTTERY

by Varian Denham

Summary

(A full report is contained in microfiche Appendix B)

A total of 2142 sherds of pre-Belgic iron age pottery was found during the excavation of pits, ditches, shallow scoops, a gully and a fence slot on Briar Hill, and a further eighty seven sherds were recovered in unstratified contexts during the initial cleaning of the site.

The majority of the assemblage was of featureless body sherds in a poor state of preservation and less than 3% of the sherds were diagnostic of form. The most common coarseware form was the bowl of globular profile with a short upright, concave or slightly everted rim. Small, shouldered jars were also present and one large barrel-shaped jar of smoothly concave profile was found. No other coarseware vessel forms could be identified but sherds from flat or convex bases, expanded rims and one lug handle were also recovered. Few 'finewares', thinner walled vessels with well-smoothed or burnished surfaces, were identified, and the majority of sherds of this type could not be assigned to a form category. One footring base was present and two rim sherds which derived from globular bowls bore curvilinear incised decoration. The decoration on the coarsewares was restricted to thumb impressions on rims and horizontal discontinuous scoring on the body.

All the material was hand-made, although it is possible that some of the finewares may have been finished on a turntable. Surface finishing was extremely variable and ranged from crude grass-wiping to smoothing and, less frequently, burnishing. Evidence for coil construction was apparent most notably on the large barrel-shaped vessel. Smaller heavily thumbed pots may have been modelled. The pottery was fired in clamp kilns below 900°C in a poorly controlled atmosphere causing patchy surface oxidation.

The fabrics were classified in six categories based upon the type and size of the predominant inclusion. The typology does not represent the identification of discrete groups but rather defines the range and boundaries of each fabric within a ceramic assemblage in which it was apparent that the quality and quantity of tempering had not been carefully controlled. It is suggested that only the organic and grog inclusions were deliberately added as temper, other differences in mineral suite reflecting the composition of the raw clay. The firing and analysis of thin sections of clay samples from Briar hill demonstrated not only that all mineral inclusions were available in the immediate vicinity but also that some of the natural clays required little preparation. The presence of gypsum crystals in the naturally occurring clay, and as characteristically shaped voids in some of the pottery, and the extremely iron-rich clay used in all fabrics suggests local production (see microfiche Appendix 7:4).

The pottery derives from two areas of the site. It would appear that the eastern group of features has an early assemblage containing several shouldered jars and globular bowls with thumb impressed decoration on the rim. A date in the 2nd or 3rd century is suggested.

The dating of the western group is problematic and is confused by a group of pits to the south and east of the enclosure which contained a large amount of pottery in all fabrics and of many forms including 2nd or 3rd century shouldered jars and globular bowls with thumb impressed decoration on the rims, vessels with expanded rims, and a barrel jar, together with two curvilinear decorated fineware bowls and a fineware footring base which are more likely to date to the 1st century BC, and may be as late as *c*AD 50. The pits had a notably high incidence of fired clay; some also containing fuel-ash slag. It is possible that this may represent either a rubbish disposal area in use over a considerable period of time, possibly in connection with pottery production, or alternatively, the later disturbance of earlier material which may derive from features in unexcavated areas in the vicinity.

If these groups of pits are excluded from the assessment of the western group of features, little evidence remains for the dating of the enclosure. No sherds diagnostic of specific form were recovered. Sherds in Fabric 1 were notably absent, but this is not necessarily chronologically significant. It is consequently impossible to say whether the western enclosure and pits were contemporary with the earliest or latest material in the pits containing burnt clay and fuel ash slag, whether they were contemporary with the enclosure on the east of the site, or whether indeed they represent a third, or overlapping, period of activity.

An almost complete triangular fired clay loomweight was recovered from feature 221, a post hole situated a little to the east of the western enclosure. The weight has perforations across each corner, one of which has broken, and the edges are abraded and burnished through use. It weighs 1280g, although intact it is likely to have weighed *c*1420g. The fabric contains both chaff and grog temper in an iron-rich clay and is similar to pottery fabric IA6 which was restricted in distribution to the pits containing fuel ash slag and burnt clay near the western enclosure.

In form and size the loomweight is typical of the period and such examples are conventionally interpreted as having provided the tension for warp threads on an upright loom.

Abbreviated Catalogue of Illustrated Pottery

Ill No.	Form	Fabric	Feature	Sherd
IAP 1	A2	IA3	109	Rim
IAP 2	A3	IA2	131	Rim
IAP 3	A3	IA2	109	Rim
IAP 4	A3	IA3	112	Rim
IAP 5	B	IA2	107	Rim
IAP 6	B	IA4	235	Rim
IAP 7	B1	IA4	188	Complete profile
IAP 8	B1	IA2	109	Rim
IAP 9	B1	IA2	131	Rim
IAP10	B2	IA4	188	Rim
IAP11	B2	IA4	263	Rim
IAP12	B2	IA4	263	Rim
IAP13	B2	IA5	253	Rim
IAP14	B2	IA2	119	Rim
IAP15	B3	IA4	188	Rim
IAP16	C1	IA4	263	Rim
IAP17	C1	IA5	253	Rim
IAP18	D	IA3	114	Base
IAP19	D	IA2	107	Base
IAP20	D1	IA6	188	Base
IAP21	E	IA5	106	Handle
IAP22	IND	IA3	109	Body
IAP23	IND	IA4	188	Base
IAP23	TRI PERF	IND	221	Loomweight

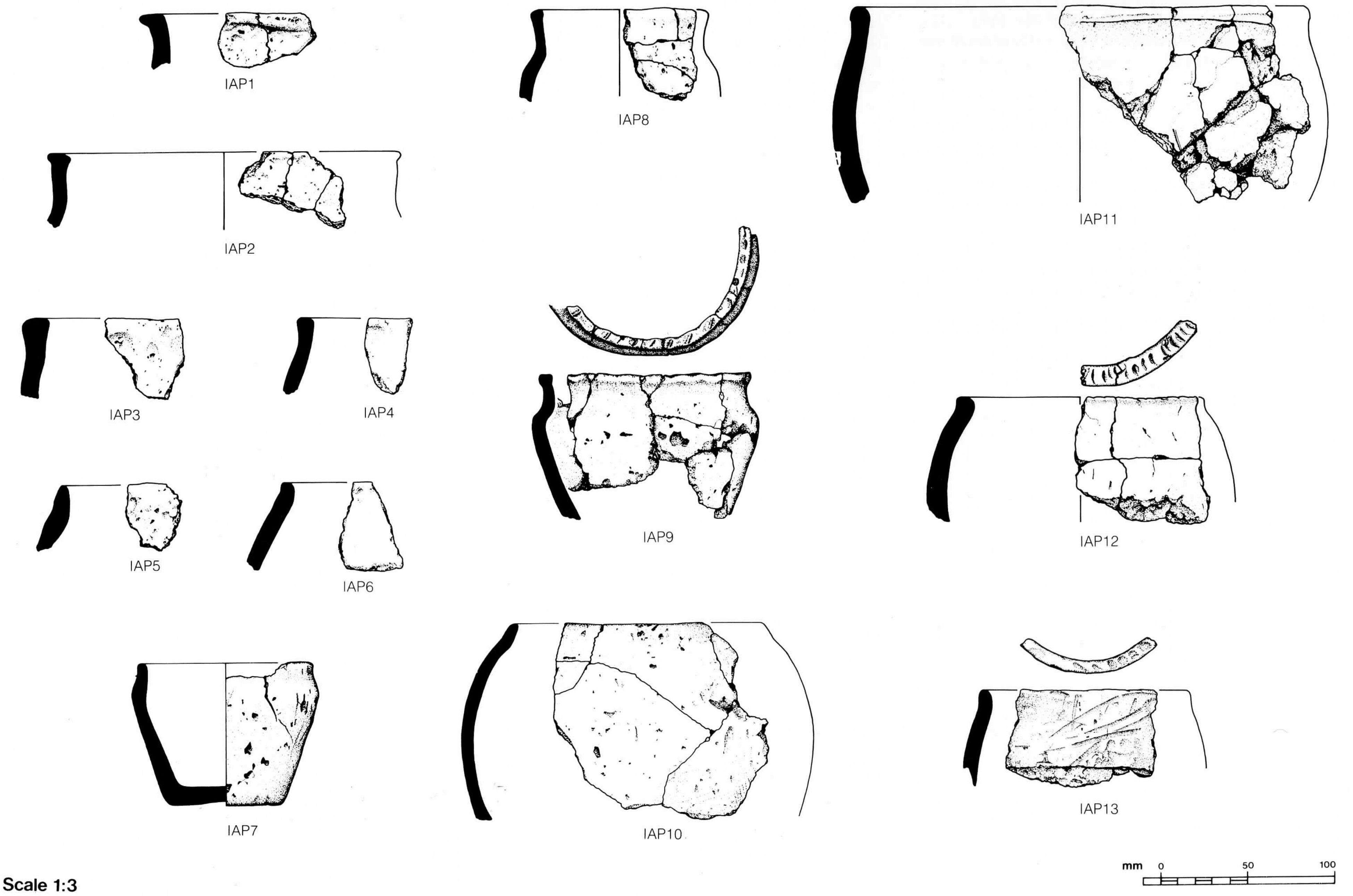


Fig 57 *Iron age pottery:* IAP1-IAP13

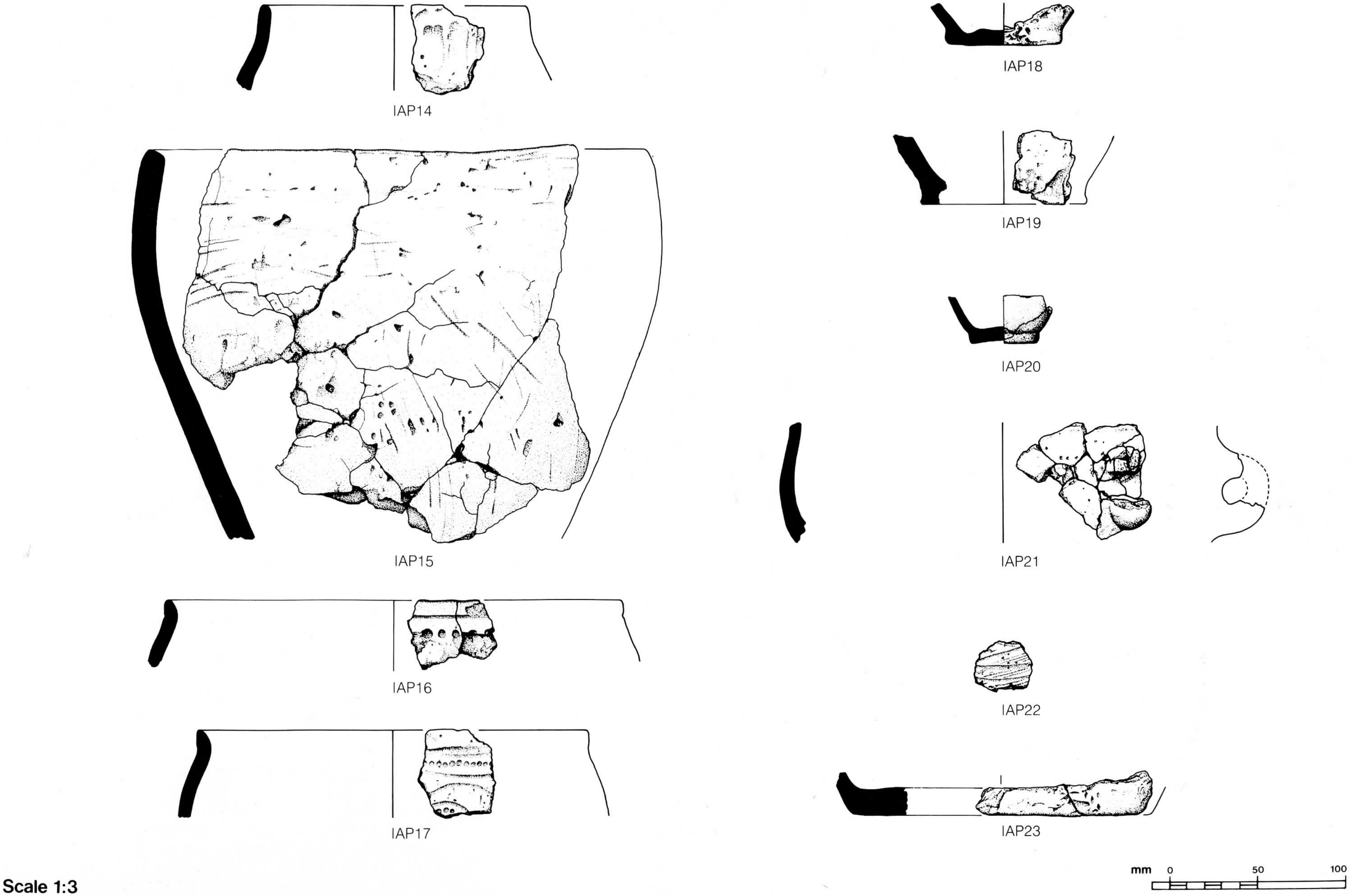


Fig 58 *Iron age pottery:* IAP14-IAP23

THE ROMAN POTTERY

by Pat Aird

Summary

(A table of sherds by context is given in microfiche Appendix 9)

A small amount of pottery (225 sherds) was identified as Roman or of late 'Belgic' type. Most sherds were small and abraded and could not be closely dated within this period.

The majority of vessels were probably local products but Samian ware, BB1 (Farrar 1973), Oxfordshire colour-coated ware (Young, 1977) and white ware flagons of Brockley Hill type (Saunders and Havercroft 1977) were present in small quantities.

The assemblage has been quantified by context (following the method used at Duston: Williams, forthcoming) and a summary is presented in microfiche.

THE SAXON POTTERY

by Varian Denham

Summary

(A full report is contained in microfiche Appendix 10)

The excavations on Briar Hill produced a small quantity of Saxon pottery (161 sherds) the majority of which was found in three sunken-featured buildings. With the exception of one rim sherd from a late Saxon wheel-thrown cooking pot, all the material is likely to be of early or middle Saxon date.

Cooking pots with rounded or globular profiles and simple everted rims, wide-mouthed shallow bowls with upright rims and sagging bases, a lugged globular storage vessel, a large flat-based storage vessel and the base of a small conical bowl or cooking pot are the only domestic forms represented. Three sherds of pottery with incised concentric grooves may derive from a decorated urn.

Most of the pottery was coil-built, although the smaller vessels may have been modelled. Patchy sanding on the lower body and base of a large storage vessel suggests that an external formative mould may have supported the coiled pot until the leather-hard stage, prior to smoothing. No vessels were either wheel-thrown or wheel-turned. Surface finishing was restricted to quartz-tempered fabrics (S1B). Approximately 11% of the sherds have been smoothed and a further 15% have indications of erratically executed burnishing. Firing which was poorly controlled took place at temperatures below 800°C in clamp kilns and the pottery was reduced to brown or black with rare oxidised red patches.

The established early/middle Saxon fabric classification for Northampton has been followed (Denham forthcoming). The largest fabric group, S1B, accounts for 94% of the material. This pottery is characteristically 'gritty' in appearance, having a predominant proportion of quartz, quartzite and sandstone inclusions. The fabric is divided into six sub-types to take account of textural variations from fine to coarse, and the relative abundance of minor inclusions (chaff, limestone, ironstone). The remaining early/middle Saxon pottery is in fabric S1C which strongly reflects the Northamptonshire Ironstone background. All fabrics contain inclusions readily available in the immediate vicinity, and it is possible that all were present in naturally occurring clay. It is likely that all the pottery was made locally.

The relationship between form and fabric type could not be ascertained as a minimum of only thirteen vessels may be represented, but it was noted that fabric S1B(6) was exclusive to one sunken-featured building (12) whilst another sunken-featured building (29) produced almost all the sherds of fabric S1B(5), and both of these sub-categories of S1B have been found only at Briar Hill.

In view of the considerable conservatism in fabric, form and technology apparent in early and middle Saxon assemblages from Northampton (Denham forthcoming) a broad date range between AD 400-AD 900 is recommended, although a date before the 7th century AD would seem most likely.

Abbreviated Catalogue of Illustrated Pottery

Ill No.	Form	Fabric	Feature	Sherd
SP 1	A	SIB(1)	12	Rim
SP 2	AB	SIB(1)	29	Body
SP 3	AB	SIB(1)	29	Body
SP 4	A	SIB(2)	11	Rim
SP 5	AB	SIB(2)	11	Base
SP 6	A	SIB(3)	29	Rim
SP 7	A	SIB(3)	29	Base
SP 8	B	SIB(3)	29	Rim
SP 9	B	SIB(3)	29	Rim
SP10	B	SIB(3)	29	Rim
SP11	AB	SIB(3)	29	Rim
SP12	A	SIB(5)	29	Rim
SP13	A	W34	12	Rim

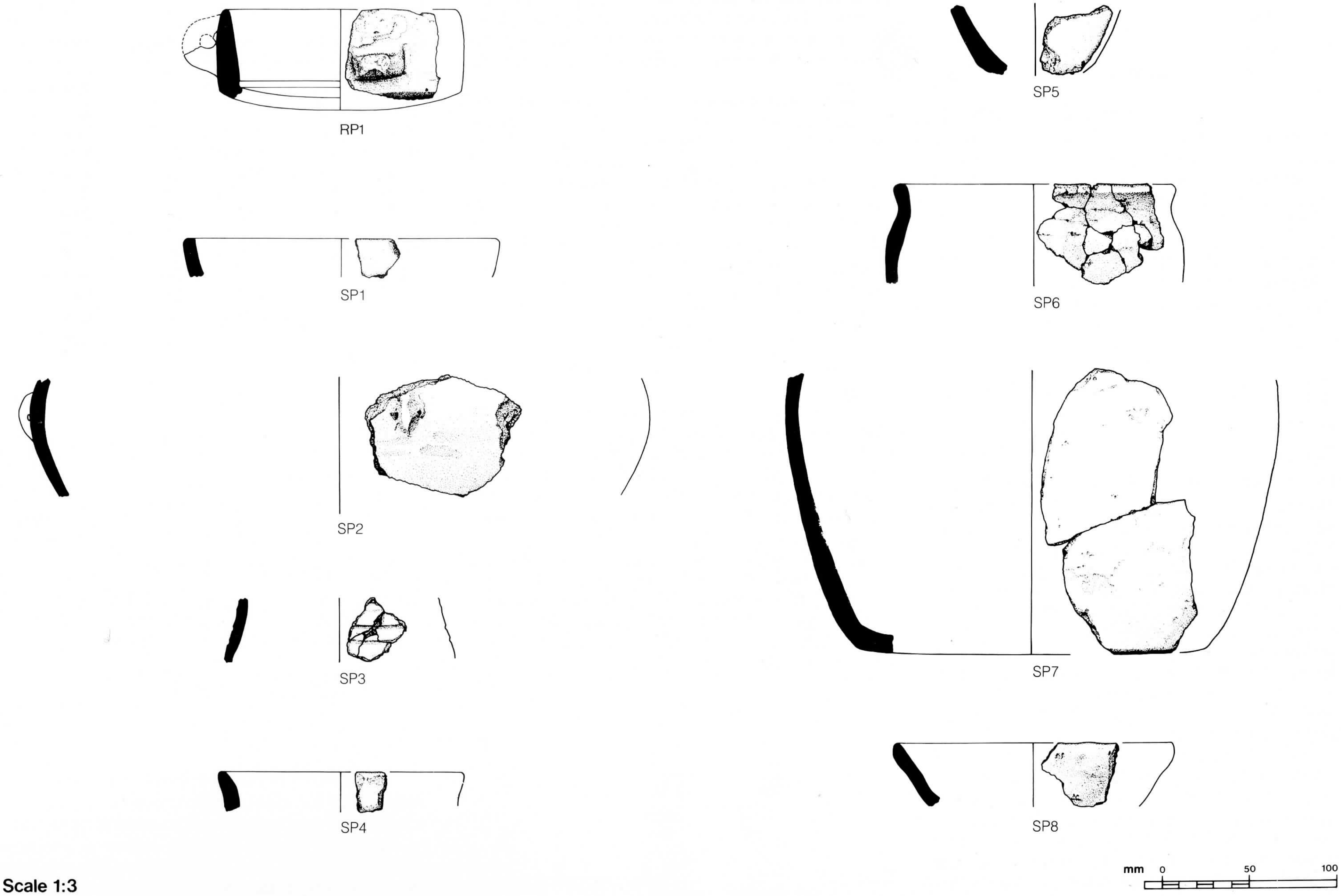


Fig 59 *Roman and Saxon pottery:* RP1, SP1-SP8

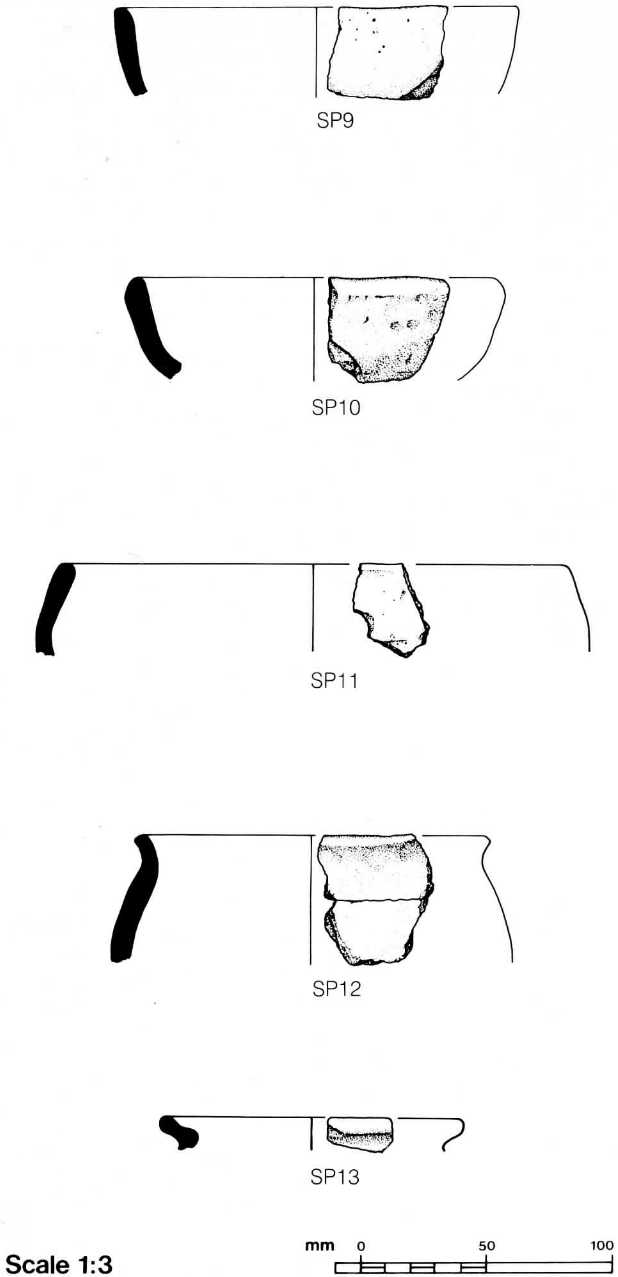


Fig 60 *Saxon pottery:* SP9-SP13

THE TILE

by Jonathan Humble

The Romano-British ceramic finds include two fragments of tile from Phase XIII. Both pieces were recovered from the same context (29), are 20mm in thickness, are of Roman tile and brick Fabric 2 (after Williams and Williams 1979, 322) and, although not conjoining, probably derive from a single tile. Features diagnostic of form are lacking but it is probable they are fragments of a *tegula* or *tubulum*. One piece exhibits a shallow fingerwipe across the undersurface.

NON-FERROUS METAL OBJECTS

by Alison R Goodall

Summary

(Further details are given in microfiche Appendix 11)

The non-ferrous metal objects consist of a fragmentary penannular bracelet of copper alloy (Fig 61:3) and an irregular rod (Fig 61:4), and two perforated disc-shaped weights of lead (Fig 61:1, 2). The bracelet is of pre-conquest type with overlapping ends twisted round each other.

IRON OBJECTS

by Ian H Goodall

Description	Context	SF No
Whittle tang knife (Fig 61:5)	29	884
Tang fragment, 72mm long	29	925
Rectangular headed staple	29	1007

THE HUMAN BONE

by Rachel Cullen

Summary

(Full details are provided in microfiche Appendix 12)

The material is characteristically deformed by cremation and appears in many instances to have been finely crushed following cremation. Periosteal surfaces show signs of extensive post-mortem erosion.

The archaeological evidence suggests that twenty two individuals are represented. Owing to the poor condition of the bones, this cannot be proved by anthropological evidence, but it cannot be disproved and seems likely.

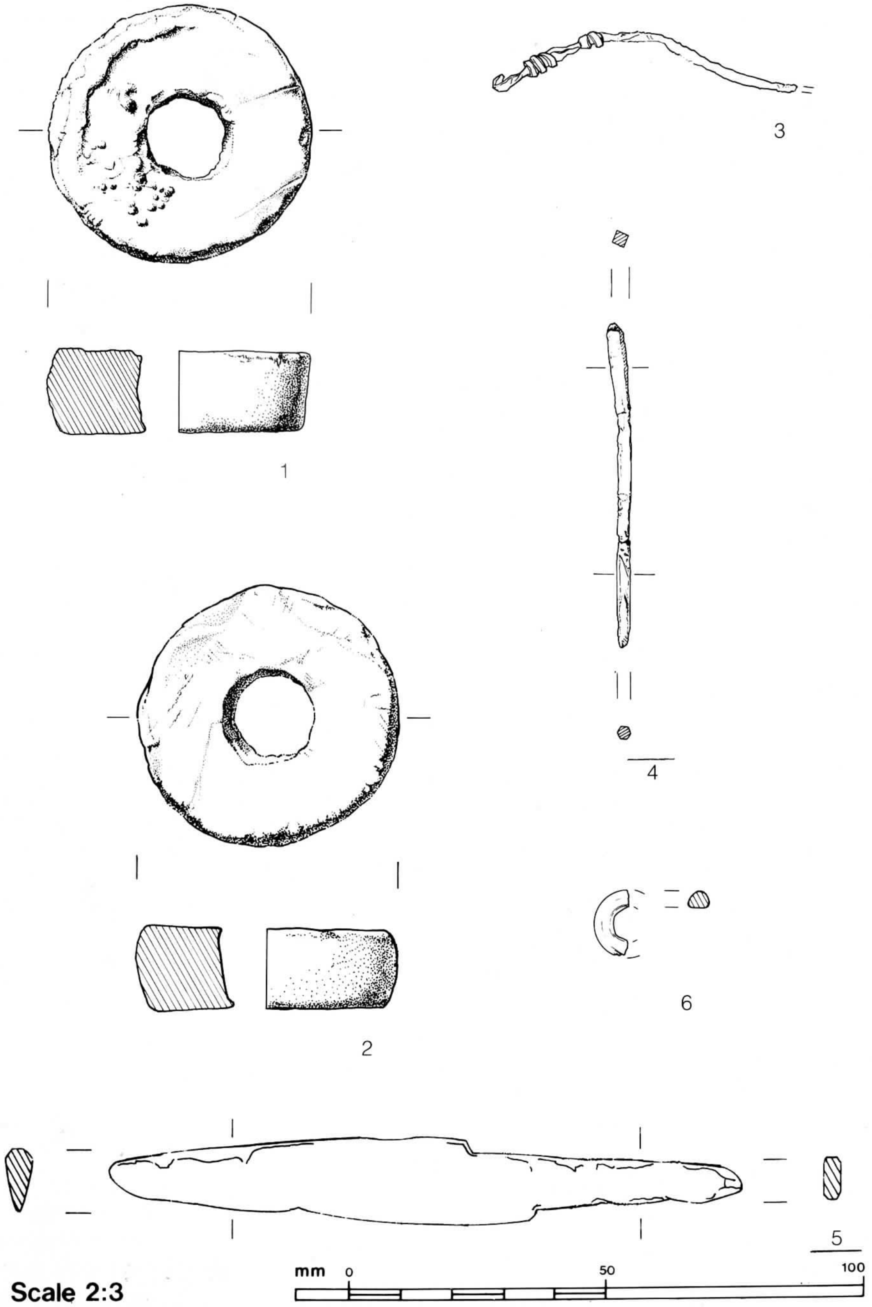


Fig 61 *Saxon metalwork and miscellaneous finds*

Six individuals (Features number 262, 266, 281, 284, 291 and 294) are represented only by small quantities of tiny eroded periosteal fragments; of these it is only possible to say that they are probably human. Attribution of the sex of the individuals is tentatively made in four cases: of these, 240 is probably male, 241 and 242 are possibly male, and 264 is possibly female. Attribution of age is difficult in such samples: it is likely that the material from the site is all adult, and 240, from the evidence of open sutures in the calvarium, may have been under forty at the time of death.

No pathology was apparent in any of the fragments examined.

THE ANIMAL BONES

by Mary Harman

(Full details are given in microfiche Appendix 13)

A very small quantity of bone was recovered from the site: owing to the acidity of the soil, little had survived, and much of it was in poor condition; very fragmentary and soft.

The pieces of bone were lifted in soil and packed: some cleaning was done during the examination of the bones to clarify features which might help to identify them. Many pieces were unidentifiable or could be described only as fragments of long bone shaft from either large animals (of cattle or horse size) or small animals (of sheep or pig size).

There are too few bones from the prehistoric period to permit any conclusions to be drawn concerning the pastoral economy of the successive communities. In earlier neolithic contexts fragments from cattle and possible sheep and (?) red deer can be identified: in later neolithic contexts there is also a fragment possibly from a pig. Iron age contexts produced identifiable fragments of cattle, sheep and horse. The Romano-British pit 64 containing parts of a horse or horses is a curious feature for which there is no ready explanation. The group of bones from Saxon sunken featured building 29 which includes cattle, pig and horse, is not dissimilar from contemporary deposits elsewhere.

THE CARBONISED PLANT REMAINS

by Ann Perry

(Full lists are given in microfiche Appendix 14)

The samples were taken, floated and sorted by the archaeologist. The resulting material was identified by the author using modern specimens for comparison and with the assistance of Mark Robinson and Martin Jones. A Watson stereo microscope, with magnification of up to 50× was used for identification.

The carbonised material from ten soil samples was studied, as were four fragments of nut shell, which had been picked out of neolithic layers by hand, and two carbonised seeds from neolithic pot sherds. Soil samples were taken from well stratified contexts where there was dark coloration caused by a high concentration of burnt material. The samples ranged in size from 0·7 litres to 4·0 litres of soil.

The Neolithic Samples

In all, ten samples were recovered from ditch segments; four of these consisted of fragments of hazelnut shell, two of a single carbonised seed from a pot sherd; the remaining four from soil samples consisted of carbonised seeds and other plant remains.

The material was poorly preserved, a trend which seems to be general for the neolithic period (Jones 1980). The two identifiable cereal grains from the site were emmer wheat and naked six-row barley. This evidence, along with the presence of hazelnut shell fragments and the carbonized flower base and fruit segment of what was probably a crab apple (but cannot definitely be distinguished from a wild pear), fits into the pattern obtained by Jones (ibid) in his study of three neolithic sites in Southern Britain (Mount Farm, Barton Court Farm and Down Farm). From the admittedly small amount of material evidence, there seems to be a strong bias towards woodland food plants. As stated by Robinson and Wilson (forthcoming) in their survey of the environmental evidence for the Upper Thames Valley: 'cereals may have been cultivated but fruit and nuts collected from woodland still made up a significant part of the diet of neolithic man just as they would have done for mesolithic man.'

The Bronze Age Samples

The four samples studied were derived by flotation from cremation contexts. The only plant material preserved consisted of tubers of onion couch grass. It is possible that there were seeds present on the cremation fires, which were destroyed. Onion couch tubers are becoming a common find in samples from bronze age cremations (Jones and Robinson, pers comm). A published example of their occurrence is at Ashville Trading Estate, Abingdon. (Jones, 1978).

The Iron Age Samples

The two soil samples were taken from different carbon rich layers in the same 'V-shaped' ditch in a small rectilinear enclosure 194 and were very different in the amount of material they contained. One sample, derived from 1·4 litres of soil, consisted of three cereal grains and four weed seeds; the other, derived from 0·7 litres of soil, consisted of 110 weed seeds and six fragments of cereal chaff. The seeds present are typical of iron age contexts and appear to represent the waste from cereal crop processing, possibly by sieving, as suggested by Dennell (1976). Most of these species are arable weeds, a notable exception being *Ranunculus flammula* (Lesser spearwort) which is a plant of marshes and wet places. *Hyocyamus niger* (henbane) is no longer an arable weed but the possibility that it was in the iron age and Roman times, is supported by its incidence in the Roman corn-drier at Farmoor (Jones, 1979).

Conclusion

The amount of carbonised material from Briar Hill available for study was quite small, but some useful information has been obtained. The difference between material from neolithic contexts and that from iron age contexts is very apparent, reflecting the change in land use and economy. The bronze age material is not really comparable as it was derived only from cremation contexts.

The results reinforce those obtained from the Upper Thames Valley area, where extensive work on carbonised remains has been carried out, and extends the record into the Northamptonshire region.

BRIAR HILL – THE CARBON 14 MEASUREMENTS

by A J Walker and R L Otlet

Introduction

Twenty four samples from this site were submitted to the Isotope Measurements Laboratory at Harwell for carbon 14 measurement over a period of eight years. All samples were supplied as charcoal and, unfortunately, the nature of the site was such that large amounts were not available. In consequence, few produced the optimum size sample (5g carbon) for the standard liquid scintillation system and a number were close to the minimum amount (1g carbon).

Four samples, which were smaller still, were measured in the Harwell miniature gas counters (30cc volume).

The processes involved were the usual ones employed at Harwell, they include:

1. Pretreatment of the sample to remove any physical and chemical contamination employing the AAA method (Acid, Alkali, Acid) using 3M HC1 and IM NaOH.
2. For liquid scintillation counting, conversion of the samples to benzene through the stages of CO_2 and C_2H_2.
3. For gas counting, conversion of the sample to CO_2 followed by rigorous purification of the gas.

Further details of the measurement procedures are not given here but can be found in Otlet and Warchal, 1978 and Otlet et al, 1983. Results are quoted with their appropriate standard error terms. These are true estimates of the full replicate sample reproducibility and do not represent counting statistics alone (Otlet, 1979).

Statistical Treatment of Results

A number of the samples dated came from contexts which can be equated on stratigraphic grounds. The carbon 14 results have, therefore, been examined in their appropriate archaeological groupings to see if it is correct statistically to view them as a single event and, this being the case, a mean result for each context has been calculated. The tests of Ward and Wilson (1978) have been used for this purpose.

The groups are arranged in chronological order starting with the samples which represent the earliest activity on the site.

Primary Phase

Harwell Ref	Sample Ref	Age bp (years)
2282	P76E8077	5440±110
4072	P76C2011	5680±70
4092	P76A6051	5540±140
5216	P76C5241	4365±85**
Weighted Mean and Std Error		5600±55

The result for HAR-5216 is not included since it clearly does not belong to the same distribution. Two measurements were carried out on the same sample and the results are in reasonable agreement, (4130±150 and 4470±100, weighted mean 4365±85). There is no reason to doubt this sample scientifically and therefore the result must be accepted.

The value for 2 at the 5% confidence level and with 2 degrees of freedom is 5·99, the T value obtained is 3·61, therefore, the mean age of 5600±55 can be taken as the best value for this primary phase.

TABLE 27: Results of Carbon 14 Measurements

HAR No.	Sample Ref.	Context	Phase	Age bp (years)	Date bc	Notes
2282	P76E8077	77A(2)	II?	5440±110	3490	Half size sample
2283	P76C9025	29	XIII	1700± 60	ad 250	
2284	P76E7041	337B	IX	3460±120	1510	Small sample (1.5g C_6H_6) repeated as R2389
2389	P76E7041	337B	IX	3540± 90	1590	Repeat of R2284, not enough material for full size sample
2607	P76B6060	145	VIII	4010± 90	2060	Id as oak, hazel/alder, cf blackthorn (*prunus* sp), willow/poplar, mainly from branches or larger timbers
2625	P76B7390	156	VIII	4290± 80	2340	Id as oak from large timbers
3208	P76D7083	52	VII	4600± 90	2650	
4057	P76B5116	218	VIII	4250± 70	2300	Id as *quercus* sp from large timbers
4058	P76B3001	240	X	3700±150	1750	Very small sample, hence large error term. All from mature timbers
4065	P76B3168	275	X	3180± 70	1230	
4066	P76A3020	248B(3)	VIII	4080± 70	2130	Id as *prunus* sp, *rosaceae* sub-family *pomoideae*, quercus sp, and *corylus/alnus* sp.
4067	P76C3251	228A	IX	3730± 70	1780	*Quercus* sp from mature timber
4071	P76C3116	199D(2)	VII	4610± 90	2660	*Prunus* sp from mature timber
4072	P76C2011	219	II?	5680± 70	3730	*Quercus* sp from mature timber
4073	P76C3503	303	IX?	3790±100	1840	*Quercus* sp from mature timber. Half size sample, hence large error term
4074	P76B6047	137	VIII	4370± 80	2420	Id as *prunus* sp, *quercus* sp and *corylus/alnus* sp, mainly from mature timbers
4075	P76A7185	124E(3)	VII	4660± 70	2710	Id as *prunus* sp from mature timber
4089	P76C3335	258	IX	3620± 90	1670	Id as *quercus* sp from mature timber Sample was only ⅔ optimum size
4092	P76A6051	128E(4)	VII	5540±140	3590	Id as *quercus* sp, *prunus* sp, *rosaceae* sub-family *pomoideae* and *fraxinus* sp, all from mature timber
4110	P76C3275	251B(6)	III or IV	3410±100	1460*	Small counter sample
5125	P76D6095	165B(1)	III	3900± 90	1950*	Small counter sample
5216	P76C5241	176A(1)	II	4130±150	2180*	Small counter sample
5217	P76A3021	248C(1)	VII	4420± 90	2470	Half size sample
5271	P76C8330	28C(2)	III or IV	4780±120	2830	Small counter sample

**Determinations inconsistent with stratigraphic position of sample*

Intermediate Dates

Harwell Ref	Sample Ref	Age bp (years)
4110	P76C3275	3410±100
5125	P76D6095	3900±90
5271	P76C8330	4780±120

Archaeologically these samples cannot be considered to represent a single event. No attempt has been made at combination of the results and the only judgment which can be made is that, looking at the one sigma limits only, the time-span which must be considered is of the order of 1580 years, ie from 4900 bp to 3320 bp. The effect of calibration on this spread is discussed in the following section.

Final Recut Series

Harwell Ref	Sample Ref	Age bp (years)
3208	P76D7083	4600±90
4071	P76C3116	4610±90
4075	P76A7185	4660±70
5217	P76A3021	4420±90
Weighted Mean and Std Error		4585±40

The value obtained for T of 4·61 is well within the 2 of 7·81 at the 5% confidence level and with 3 degrees of freedom. The hypothesis that these samples do all represent the same event must be accepted and the figure of 4585±40, the weighted mean and standard error, can be used as the best age for this context.

Spread in Interior

Samples taken from the interior of the site which do not refer to one event.

Harwell Ref	Sample Ref	Age bp (years)
2607	P76B6060	4040±90
2625	P76B7390	4290±80
4057	P76B5116	4250±70
4066	P76A3020	4080±70
4074	P76B6047	4370±80

Of these samples HAR 2625 and HAR 4057 are features which on the archaeological evidence appeared to be of similar function and it was therefore considered valid to take a mean result, the value for which is 4265±55.

The rest of the samples shows a range of dates covering some 530 years. Neither statistically nor archaeologically is it likely that these results represent a single event.

Later Neolithic Pits

Harwell Ref	Sample Ref	Age bp (years)
2284	P76E041	3460±120
2389	P76E041	3540±90
4067	P76C325	3730±70
4073	P76C3503	3790±100
4089	P76C3335	3260±90
Weighted Mean and Std Error		3650±40

The T value obtained is 7·38 which is less than the figure for 2 of 9·49 at 5% confidence level and with 4 degrees of freedom.

The only dates not considered are the two for the cremations.

Harwell Ref	Sample Ref	Age bp (years)
HAR 4058	P76B3001	3700±150
HAR 4065	P76B3168	3180±70

Of these, HAR 4058 carries a very large error term of 150 years, and therefore less confidence should be placed on this than on the measurement of HAR 4065. It is possible to make a weighted mean of these two results giving a value of 3275±65, but the T value is very large and unless there are good archaeological grounds for believing that these two samples refer to events which are contemporaneous it is not recommended that they should be viewed as a single event.

Calibration

The decision on which calibration curve to use at present is very difficult, since although high resolution curves are available for the AD period none is yet published for the BC timescale. Work is well in hand and the Belfast laboratory have produced a floating curve for the period from 200 BC to 4000 BC (Pearson et al, 1983). For this analysis two of the original calibration curves have been used; MASCA (Ralph et al, 1973) and Damon et al (1972). Raw data values have also been included in the table to facilitate further calibrations as the new curves become available.

Following the custom of the Harwell laboratory (Walker et al, 1983), results representing a single event have been combined before calibration and only the mean result is calibrated. Individual calibrations are given for those samples not combined.

TABLE 28: Calibration of Radiocarbon Dates

Harwell Ref.	Sample Ref.	Age bp (years)	Date BC MASCA	Date BC Damon & Long
Primary Phase		5600± 55	4480	4475±155
4110	P76C3275	3410±100	1870-1770	1845± 85*
5125	P76D6095	3900± 90	2540-1490	2475±140*
5271	P76C8330	4780±120	3620	3595±140
Final Recutting		4585± 40	3380	3335±100
2607	P76B6060	4010± 90	2610	2615±140
2625	P76B7390	4290± 80	3060-2990	2970±175
4057	P76B3168	4250±70	2970	2920±160
4066	P76A3020	4080± 70	2820-2700	2705±130
4074	P76B6047	4370± 80	3150	3070±170
Later Neolithic Pits		3650± 40	2140	2155± 85
4058	P76B3001	3700±150	2160	2215±175
4065	P76B3168	3180± 70	1550-1510	1550±135

**Determinations inconsistent with stratigraphic position of sample*