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The excavation of two medieval pottery kiln sites and two sections through the London–Lewes Roman road at Clacket Lane, near Titsey, 1992

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with a major contribution on the pottery by

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Summary

Archaeological work near Clacket Lane led to the discovery of two medieval sites which were subsequently excavated to reveal two pottery kilns and various contemporary features. Sites producing pottery known as Limpsfield ware have previously been discovered in this area and these most recent findings belong to this group. The work led to the recovery of large quantities of mid-13th to 14th century coarseware and the detailed examination of this material has enabled a comprehensive report to be written. In addition features which predate the pottery production were found on the southern site and some of these are believed to be of prehistoric date. Two sections through the London–Lewes Roman road were also excavated.

Preface

The construction of motorway service areas and slip roads on each side of the M25 between Limpsfield and Westerham was preceded by an archaeological evaluation, and subsequent excavation within the land involved, by staff of the Surrey County Archaeological Unit (fig 1).

The site lies on a deposit of Gault Clay between outcrops of chalk to the north and Lower Greensand to the south, and is centred approximately 1.5km to the east of Titsey, in the parish of Tatsfield. The land had been used for agricultural purposes until shortly before the evaluation took place.

The area was believed to be of high archaeological potential because a number of important sites have been discovered in the locality. To the north-west the site of a Roman temple has been excavated (Graham 1936), to the west the remains of a Roman villa have been discovered (Leveson-Gower 1869), and to the south sites for production of Limpsfield Ware pottery have been found (Prendergast 1973; Ketteringham 1989). In addition, an entry had been made in the Sites and Monuments Record for the discovery of a Neolithic polished flint axe within the redevelopment area.

The evaluation, which took place between 6 and 17 January 1992, led to the discovery of two pottery kiln sites and these were duly excavated between 24 February and 28 April, 1992. Work at the evaluation stage, which also incorporated the formal excavation on each side of the motorway of a section trench through the London–Lewes Roman road (fig 1) was funded by the Department of Transport. The ensuing excavations and post-excavation work were funded by English Heritage. The service stations at Clacket Lane were built by Roadchef Ltd and were opened on 21 July 1993 by Mr Robert Key MP, the Minister for Roads and Traffic.

Chapter 1: The evaluation

The land which required evaluation lay to the north and south of the M25 motorway and was divided into three separate areas (fig 2, Areas 1, 2 and 3); the topography of each area was found to be quite varied. Much of Area 1 sloped gently downwards from north to south, though relatively flat areas were present along the line of the Roman road to the west, and close to the M25 to the south. The central part of Area 2 was quite steeply sloping, though a relatively flat portion of higher ground was present to the north-east and a small area of level ground was found in the south-west corner close to the M25. Area 3 was relatively flat but was marginally higher towards the south-west. Area 1 had been ploughed shortly before the evaluation took place and had a light covering of vegetation, while Areas 2 and 3 were under grass.

The evaluation was achieved by the mechanical excavation of trial trenches, backed by more detailed excavation by hand where necessary, and was supported by geophysical scanning. During the evaluation the opportunity was taken to excavate sections through the London–Lewes Roman road — that undertaking is discussed in detail in chapter 2. Throughout this report context numbers which are below 200 indicate work completed at the evaluation stage. Where they appear in the accompanying specialist reports such numbers, unless specifically mentioned in the text, relate to occasional finds recovered from trial trenches which have not been individually discussed.

1.1 TRIAL TRENCHING

The main part of the evaluation was completed using a JCB with a 1.5m toothless grading bucket to excavate trial trenches throughout each of the three Areas shown on fig 2. The north-western corner of Area 3 was occupied by the contractors' office compound and was not available for investigation.

The excavation of the trial trenches was carefully supervised and a watchful eye was kept open for stray finds or features which might indicate the presence of an archaeological site. For the most part the locations for the trial trenches were chosen simply so that their number and distribution provided good coverage of the area as a whole. In some instances localized factors did affect the positioning of the trial trenches. In Area 1 the ground surface was still predominantly bare soil after the recent ploughing and had only a partial covering of vegetation. This meant that it was possible to look for scatters of finds on the surface while the trial trenching was taking place, and this led to the discovery of numerous sherds of medieval pottery in the

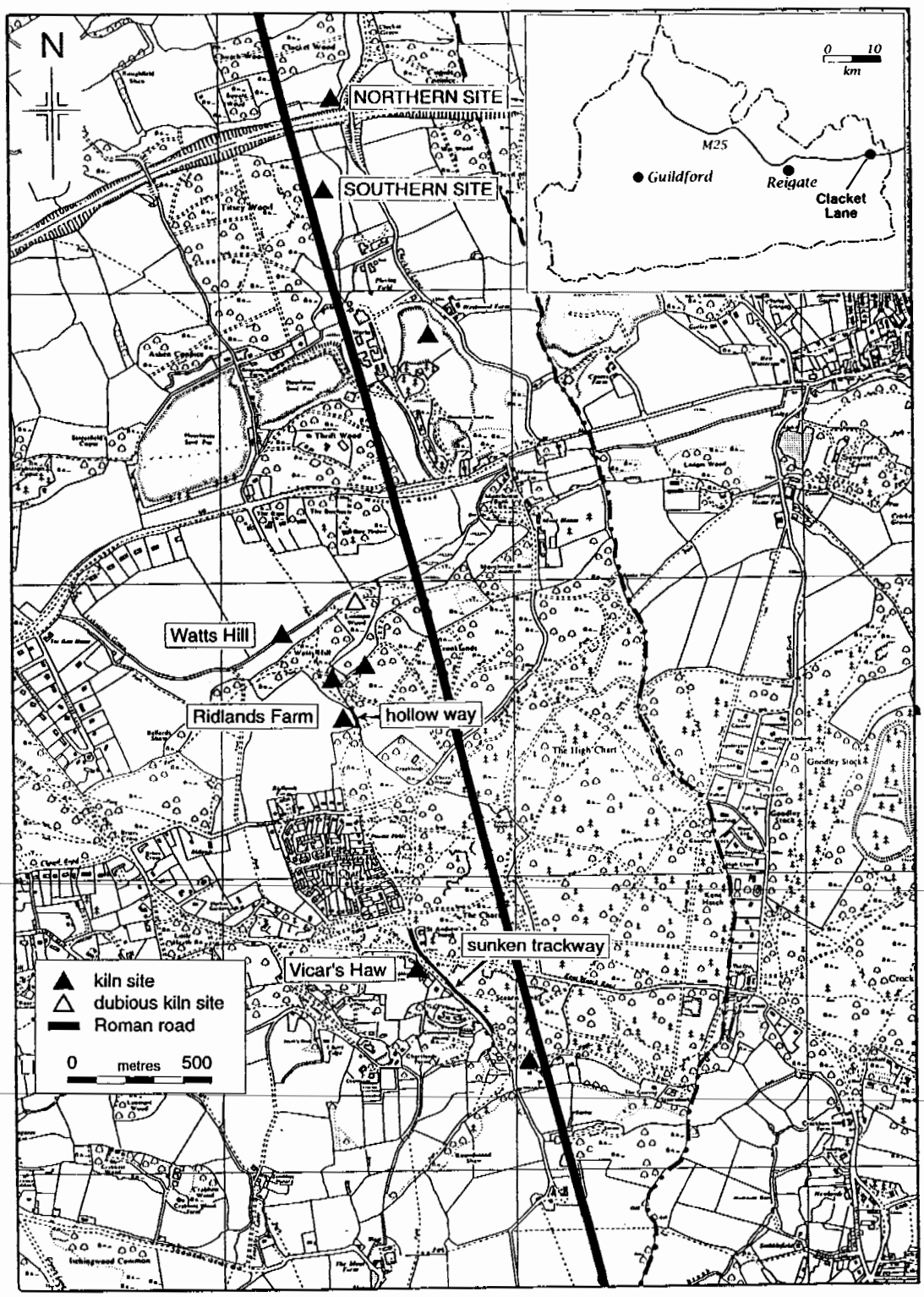


Fig 1 Clacket Lane, Titsey: location of the northern and southern kiln sites, the course of the London–Lewes Roman road, and previously discovered medieval kilns. (Reproduced from the Ordnance Survey 1: 10000 scale map with the permission of The Controller of Her Majesty's Stationery Office. © Crown copyright 87175M)

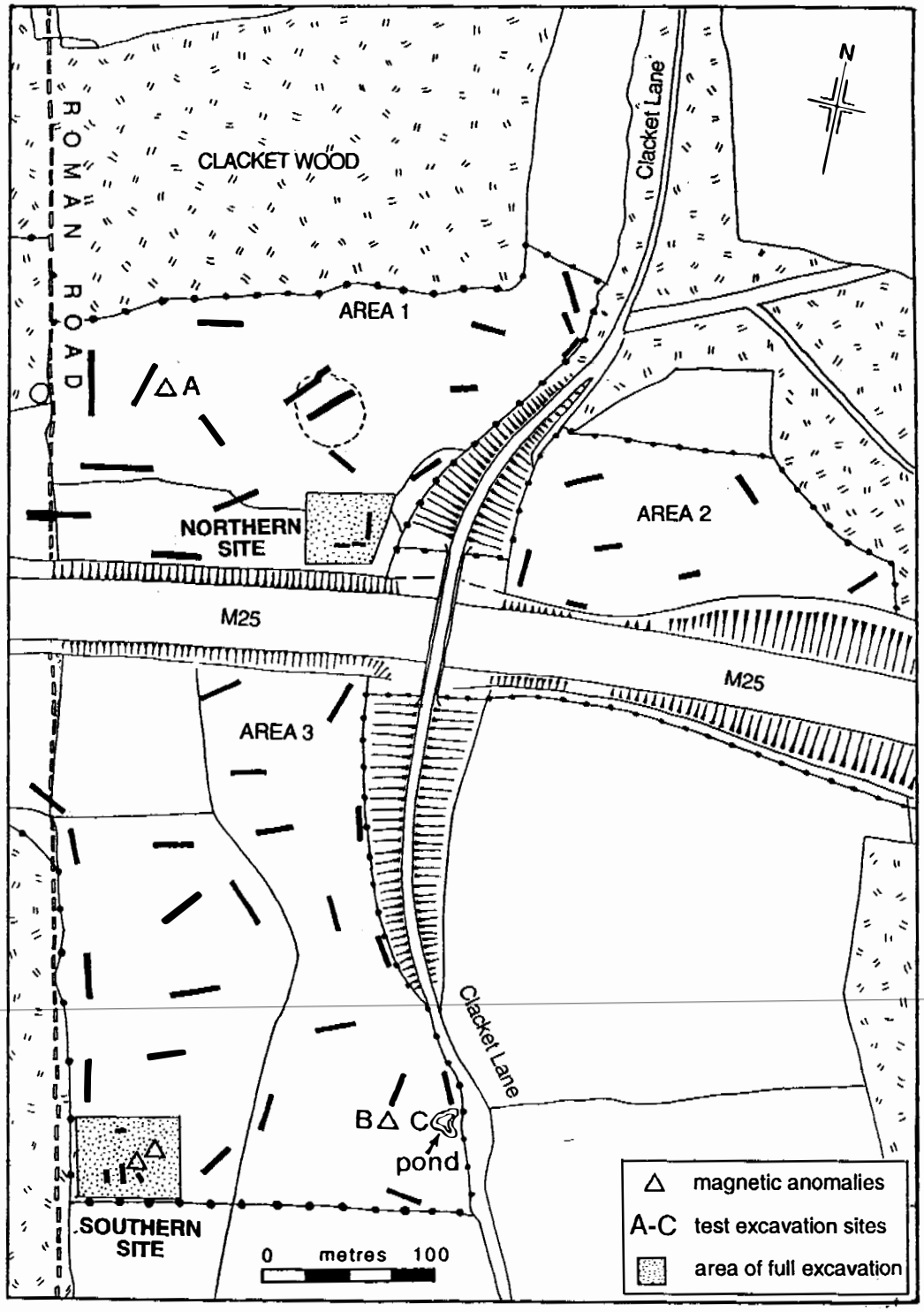


Fig 2 Clacket Lane, Titsey: location of evaluation trenches, magnetic anomalies and areas of full excavation

south-eastern corner of the area, thereby indicating the importance of this part of the field in advance of the mechanical excavator. In Area 3 outcrops of higher ground in the otherwise level terrain were deliberately sampled, as such areas were often favoured for settlement sites by those wishing to avoid land which might be more prone to flooding. The trial trenching of the low-lying ground along the southern edge of Area 1 and in the northern and western parts of Area 3 was hampered by the presence of spring lines and surface water, and this suggested that these areas and much of the land now occupied by the M25 might have been avoided by settlers.

1.2 THE RESULTS OF TRIAL TRENCHING

1.2.1 *Area 1*

It has been mentioned above how recent ploughing led to the discovery of a large number of medieval pottery sherds in the topsoil in the south-eastern corner of the field. These finds were part of an extremely dense spread of material which occupied a relatively confined area and appeared to coincide with a scattering of Greensand lumps — a favoured building material. The first trial trench dug here was excavated entirely by hand, which produced numerous pottery sherds from the ploughsoil and revealed a black clay loam containing charcoal and many more sherds. This black layer was not disturbed as it seemed likely that the continued excavation of this small trench would be counter-productive if it removed material best examined and recorded after the clearance of a wider area. Two other trenches were dug nearby, this time by machine followed by clearance by hand. The first, to the west of the hand-dug trench, produced more pottery but revealed no features and showed that the black layer did not extend this far. The second trench, to the north, revealed a metalled surface (see fig 5, contexts 227, 283 and 284) of chalk and flint lumps (which appeared to run at right angles to Clacket Lane), and the outline of several possible features which could not be investigated in the time available.

The other trenches in Area 1 produced very few finds and no features of archaeological interest. A second surface scatter of medieval pottery, much less dense than that mentioned above but still possibly of significance, was found to the north of the area described (fig 2), but was not investigated at this stage.

1.2.2 *Area 2*

Very few finds were recovered from the trial trenches in Area 2 and no features of archaeological interest were revealed.

1.2.3 *Area 3*

The majority of trial trenches dug in this Area produced only negative information. However, on an outcrop of slightly higher ground in the south-western corner of the evaluation area, significant quantities of medieval pottery were discovered. The full or partial excavation of the southern three of four small trenches dug in this area (fig 2) indicated that other localized concentrations of material were present; the fourth trench produced less frequent finds. No features were revealed, but in the easternmost trench (which was particularly rich in finds of pottery) a dark layer similar to that described in Area 1 was found.

1.3 THE GEOPHYSICAL SURVEY

It will be suggested below that the sites identified by the presence of large scatters of medieval pottery in Areas 1 and 3 were thought most likely to be associated with pottery kilns. Although sufficient for normal evaluation purposes, the general distribution of trial trenches was such that areas with dense localized concentrations of material, such as those already discovered, could lie between the trenches. For this reason a geophysical scan, using a fluxgate magnetometer, was carried out throughout these areas to look for strong magnetic anomalies which might indicate

the presence of kilns. Unfortunately, the presence of overhead power cables disrupted the survey around the major pottery scatter in Area 1 (and to the north of this where the secondary scatter was recorded), but a strong anomaly was discovered westwards as indicated on fig 2. In Area 3 strong anomalies were located close to the trenches producing pottery sherds, and a second strong anomaly was located eastwards towards the pond (fig 2). In neither case was the anomaly typical of that produced by substantial kilns, but in an area otherwise free of significant magnetic variations further investigation seemed worthwhile.

1.4 EVALUATION CONCLUSIONS AND RECOMMENDATIONS

The quantity and distribution of finds around the sites located in Areas 1 and 3 suggested that these sites were unlikely to have been used simply for domestic purposes and strongly indicated industrial land use associated with pottery production. A provisional examination of the pottery recovered from each area showed it to be essentially of 13th–14th century date and to be a ware with a predominantly grey or orange/red coarse sandy fabric. As the Limpsfield area was known to have produced coarseware from the mid-13th to the mid-14th century (Prendergast 1973; Ketteringham 1989), and as the nearest known kiln site lay close to Westwood Farm and within the Moorhouse Sand Pits, approximately 500m to the south-east of the site identified in Area 3, it seemed increasingly likely that at least two further production sites had been discovered. The magnetic anomalies found during the magnetometer scan suggested that other kilns might await discovery, and the presence of the pond in Area 3 was also interesting. Several small ponds of this type are shown on the OS map and it was thought possible that some may initially have been dug as clay pits. Since the pond lay close to one of the magnetic anomalies discovered, it seemed possible that a link might be established between the extraction of a raw material and its use at a nearby production site.

Consequently it was decided that a further programme of work should take place at Clacket Lane. This work would principally involve the thorough archaeological examination of the potential kiln sites in Areas 1 and 3, but would include the machine-cutting of additional trenches, through the centre of each magnetic anomaly located away from the known pottery concentrations, through the secondary scatter of pottery found in Area 1, and through the pond in Area 3.

Chapter 2: The excavation of two sections through the London–Lewes Roman road

The formal excavation of two sections through the line of the London–Lewes Roman road (one on each side of the M25 motorway) was undertaken at the same time as the evaluation described above (fig 2). The approximate line of the Roman road is shown on the OS map and the accuracy of this has seen some confirmation during previous archaeological investigations (Ketteringham 1975; Cotton & Poulton 1990). The excavation of the two trenches described below was seen as a further opportunity to corroborate this course, and to examine the stratigraphy of the feature in areas threatened by the construction of slip roads and service areas.

2.1 THE SECTION TRENCHES

The excavation of each trench was hampered by the presence of a broad thick embankment of redeposited clay mixed with small patches of soil, which must have been deposited beside the motorway during its construction. This, and other disturbed ground, was removed using a mechanical excavator, leaving the surface of the Roman road and its cover soil to be sampled by hand. Fortunately the embankment tapered out just to the east of the Roman road which limited the amount of overburden that had to be removed. However, the instability of the clay, particularly in the northern trench, led to frequent collapses of the trench sides which made excavation difficult.

2.1.1 *The northern trench*

The excavation of this trench began at its eastern end where a stratigraphic sequence of *c* 0.30m of dark ploughsoil (139) overlying *c* 0.20m of grey-brown silty clay subsoil (140) was revealed above natural clay. To the west the redeposited clay bank (127) was encountered and this overlay the ploughsoil and became increasingly deep as shown in section (fig 3). Close to the base of the bank a modern field drain was discovered cutting an earlier ditch (104), and just to the west of this the presence of frequent flint pebbles in the topsoil/ploughsoil (128) indicated that the road surface lay below. Here the top layer (128) was removed by machine, leaving the rest to be excavated by hand. At the western end of the trench the flint pebbles became less frequent in the topsoil/ploughsoil, so this layer and the underlying subsoil layers were again removed by machine.

The removal of layer 128 revealed score lines in the surface below which had been caused by ploughing. Beneath 128 lay the metalled surface of the Roman road (129) which consisted of densely packed angular flint pebbles in a grubby grey-brown silty clay matrix. No features, such as wheel ruts, were present in this surface; slight (modern) plough damage to this surface was observed as noted above. Beneath 129 lay a dirty orange-grey silty clay (130) which again contained quite frequent flint pebbles, but these were less densely packed than those in 129 and contained a higher proportion of smaller stones. Clean yellow-grey natural clay lay below this layer.

Towards the eastern end of the trench a ditch (104) was discovered. The satisfactory excavation of this feature was almost impossible because it was cut by a modern field drain (141) following the same course (fig 3). A small section of 104 was excavated against the northern side of the trench and this showed it to have a main fill of grey-brown silty clay (105). In section the ditch appeared to cut the subsoil layer 140 on its eastern side, and may have just cut the tail-end of layer 130 on its western side; its relationship to layer 128 was not certain.

At the western end of the trench layers 131, a greenish grey-brown silty clay, and 138, a dirty yellow-brown silty clay, were observed below 128. These layers overlay 129 and 130 (see section, fig 3) and probably developed as subsoil deposits. Prior to a major collapse which prevented the drawing of the section beyond the western extent shown, these layers were observed to continue unchanged to the end of the trench.

Few finds were recovered from any of the contexts excavated in this trench. None are of significance for an understanding of the Roman road.

2.1.2 *The southern trench*

The excavation of this trench again began at the eastern end where a stratigraphic sequence of *c* 0.25m of topsoil was observed overlying a similar depth of grey-brown silty clay subsoil above natural clay. The redeposited material of the clay bank (143) extended slightly further eastwards on this side of the motorway and was picked up almost immediately in this trench. This was topped by a thin layer of replaced topsoil (142), which was not observed in the northern trench (but was presumably present to a less noticeable extent as the bank had a cover of surface vegetation). Close to the eastern end of the trench, 143 replaced the subsoil layer and lay directly over the natural clay. Just to the west of this, a dip in the level of this material indicated that the surface of the natural had been truncated immediately prior to the creation of the embankment (see eastern end of section, fig 4). To the west of this point a ditch (146) was discovered, and to the west of this again the remains of a metalled surface (147) were found, though this had been heavily disturbed not only by the activities involved in the deposition of the clay bank but by the cut for a large concrete drainpipe in a gravel-filled trench (145). Towards the eastern end of the trench a buried (post-medieval) topsoil layer (144) partially sealed the stones of the Roman road, and one further feature, a post-medieval terracotta field drain was discovered (fig 4).

The remains of the Roman road consisted of densely packed flint lumps and pebbles in an orange-grey clay matrix and were similar to layer 129 in the northern trench. In the south-west facing (drawn) section this surface survived in three patches, but, during machining, only the

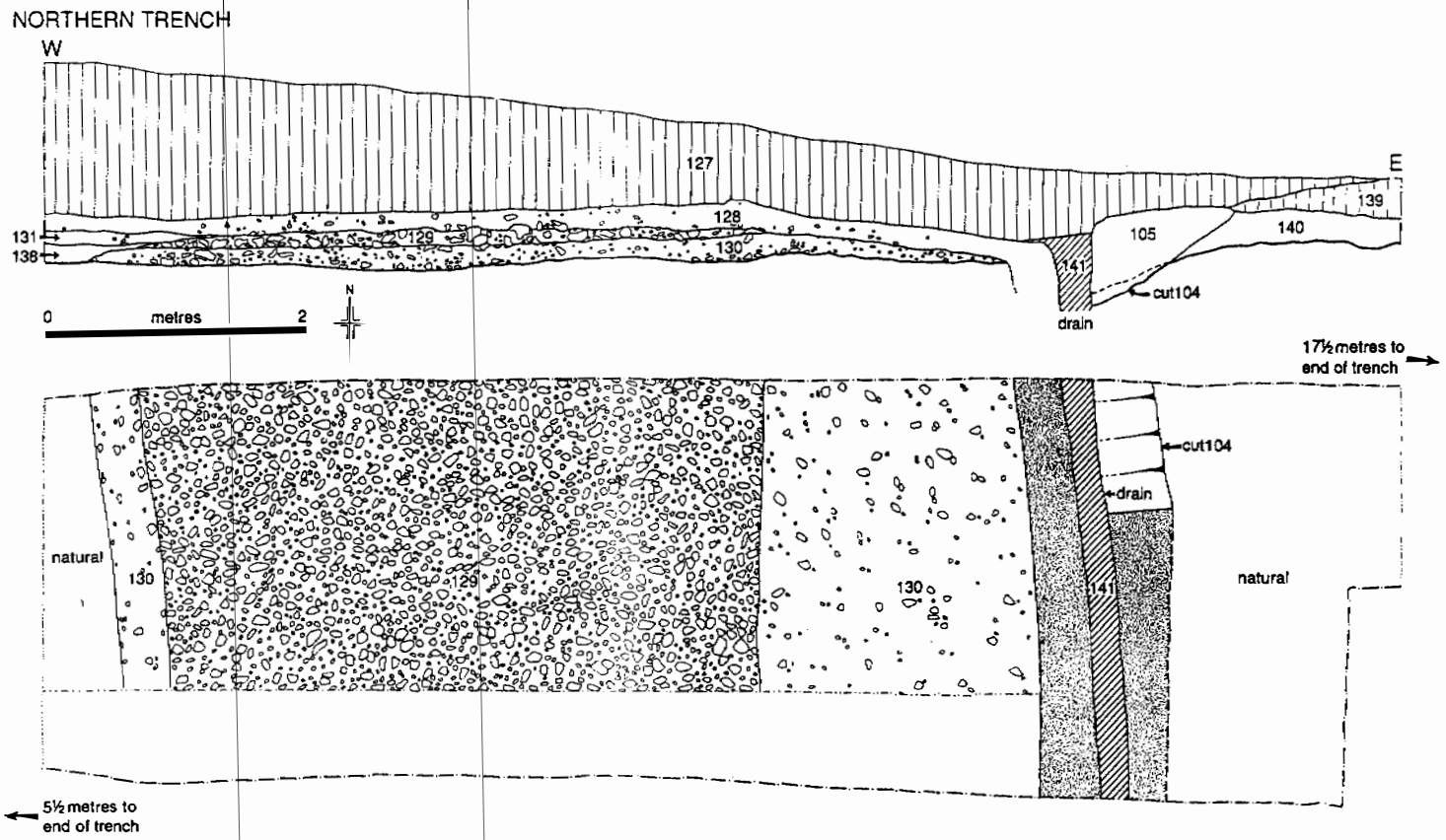


Fig 3 Clacket Lane, Titsey: section and plan of the northern trench through the London–Lewes Roman road

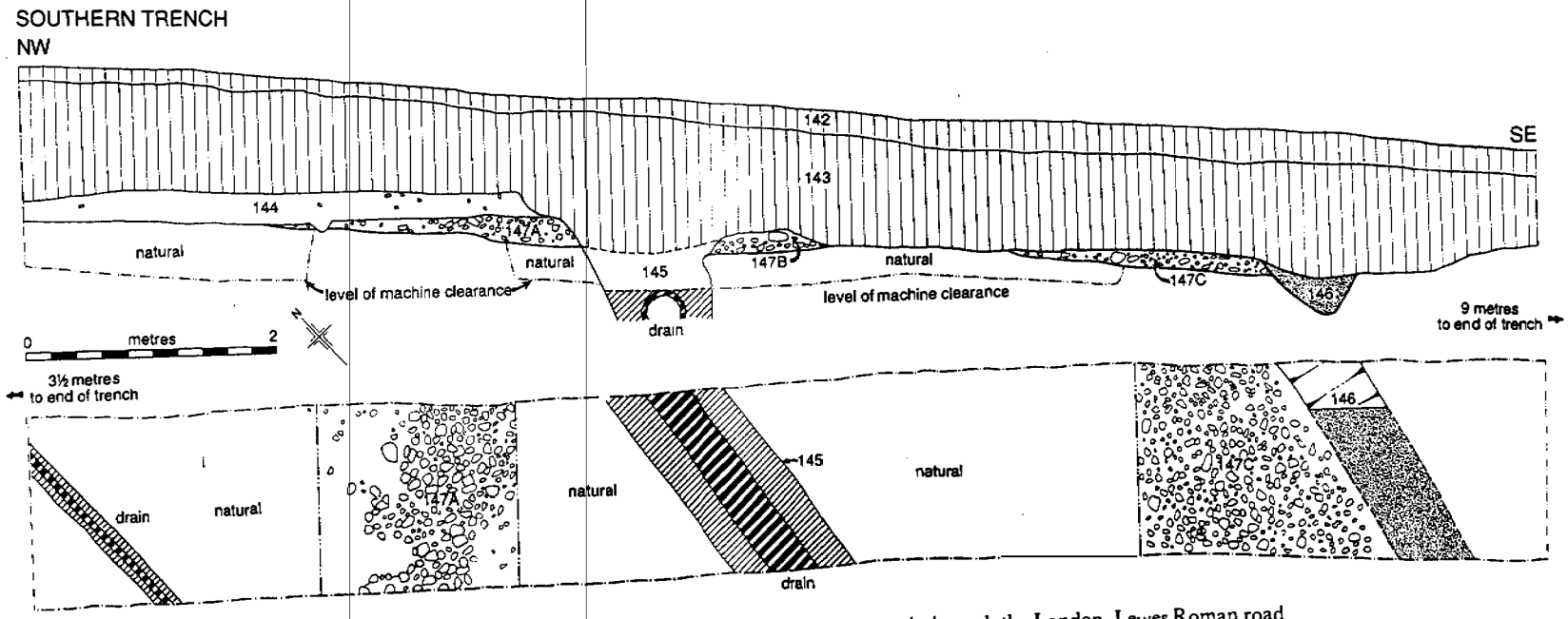


Fig 4 Clacket Lane, Titsey: section and plan of the southern trench through the London–Lewes Roman road

planned patches appeared significant, and in the opposing section the stones only appeared adjacent to these two areas. A narrow strip of stones was removed by hand in the area nearest to the drawn section and this revealed the clean natural clay below. The eastern patch of stones was just cut by ditch 146 which had a fill of grey silty clay. Several small pieces of post-medieval brick and tile were observed during the removal of layer 143, but no other finds were recovered from any context.

The conclusions drawn from the excavation of the two section trenches described here are discussed fully below (chapter 6).

Chapter 3: The main excavations

In the latter part of this chapter there are two major sub-headings, namely, the northern excavation and the southern excavation. The headings which appear prior to this point apply equally to both sites. The context descriptions for each site will include only a brief mention of the pottery recovered unless it is of particular interest and needs further comment. It is sufficient to say that all pottery referred to as being of 'medieval' date is of the same type as the material recovered from the kiln areas and belongs to the same mid-13th to 14th century chronology.

3.1 METHODOLOGY

The overburden of topsoil and subsoil layers was removed from each site area using a Komatsu PC120 mechanical excavator and two 5-ton dumper trucks. In some localized areas the topsoil was not completely removed, as numerous sherds of pottery suggested that an important feature lay just below and it was thought preferable to expose this and recover the surrounding finds by hand. The unstratified finds recovered during soil stripping were retained under overall clearance numbers for each site area, and the quantity of this material was increased by observation and collection during the loading of the dumper trucks. The majority of features were found to cut natural clay and little stratigraphy was present on either site area, except around features subsequently identified as kilns or waster dumps; all layering was removed in stratigraphic order when present. These features were sampled and recorded in accordance with usual archaeological practice. Pits and postholes were half-sectioned and drawn to illustrate any internal layering which might have been present — full excavation only followed if a feature was of exceptional interest or if finds were still required to establish its date. Linear features, such as ditches, were dug in segments and were recorded similarly. All features were fully photographed during and/or after excavation as appropriate.

3.2 FURTHER AREAS OF POTENTIAL INTEREST

Following the clearance of each main excavation area the opportunity was taken to investigate the remaining areas of archaeological interest which had been identified during the evaluation of the site (fig 2). A trial trench was dug through the centre of each of these areas.

3.2.1 *The geophysical anomalies*

No discoveries of any interest were made at the location of any of the geophysical anomalies which were found during the evaluation of the site. See also microfiche 2.

3.2.2 *The pottery scatter*

A trial trench through the centre of the secondary scatter of medieval pottery to the north of the main northern site area (fig 2) revealed no features of archaeological interest, so, although the reason for the presence of this scatter had not been determined, it was decided that further work in this area would probably not be profitable.

3.2.3 *The pond*

This feature appeared as a pronounced boggy hollow which lay approximately 150m to the east of the southern excavation area; it had largely been taken over by grasses and water-loving vegetation. The feature was of unknown origin though it was hoped that it might have been dug as a clay pit and so be of similar date to the nearby kiln site. It was also hoped that, if this proved to be the case, environmental sampling would provide valuable information about the contemporary landscape. Unfortunately, excavation of a section through the pond showed that it held no archaeological interest. See also microfiche 2.

3.3 ENVIRONMENTAL SAMPLING

Careful consideration was given to the environmental potential of the site (microfiche 2–3). In the event only samples from the southern kiln proved of interest (Appendix 2).

3.4 THE NORTHERN EXCAVATION

In order to maximize the time spent elsewhere, the eastern and western ends of the site were not subjected to detailed surface cleaning; careful observation of the machining of these areas in favourable conditions for visibility had indicated that they were either devoid of features or at most only contained features that were of post-medieval date. Features that were clearly of post-medieval date were not excavated with the exception of one small corner of 227. The site area sloped gently downwards from north to south.

3.4.1 *Site stratigraphy*

A simple stratigraphy was encountered on this site where it was found that a 0.20–0.30m deep topsoil layer (200) either lay directly above the natural clay (to the south and east) or lay above a dirty yellow-grey clay subsoil layer (229) which itself overlay the natural and reached a maximum depth of 0.12m in the north-west corner. Features of post-medieval date were found beneath 200 and were either cut directly into the natural clay or cut through layer 229. Features of earlier date were found to cut the natural clay beneath 200, and were sealed by 229 where present. Most of the overburden material was removed by mechanical excavator, though the area around the kiln was largely dug by hand and part of layer 229 was also removed by hand. All unstratified material collected during site clearance and excavation was collected under context number 200.

Layer 229 and contexts 211, 212, 214, 215, 216, 218, 220, 221

During the clearance of the site, layer 229 was found to contain quite frequent sherds of medieval pottery, some of which were present in localized concentrations in the lower part of the layer. Most of the concentrations appeared to consist of sherds coming from a limited number of vessels and were considered to have a high potential for reconstruction work. These concentrations were numbered separately and are indicated on plan either with a dotted or a solid line (fig 5). Those with a dotted line (212, 214, 215, 216, 221) indicate concentrations found within the lower part of 229 and directly over the natural clay. Those with solid lines (211, 218, 220) were found within the lower part of 229 and possibly in slight hollows in the natural clay which were believed at the time to indicate shallow features. In retrospect this does not seem likely. There was no distinction at all between the soil around the sherds at these locations and that removed elsewhere within 229: no convincing feature edges were found and with the removal of the remainder of the layer the hollows all but disappeared. Further, as undisputed features of medieval date were found after the removal of 229 it seems more likely that the layer formed after the kiln site had been abandoned. It seems most likely, therefore, that these concentrations represent localized primary discards of material on a contemporary ground

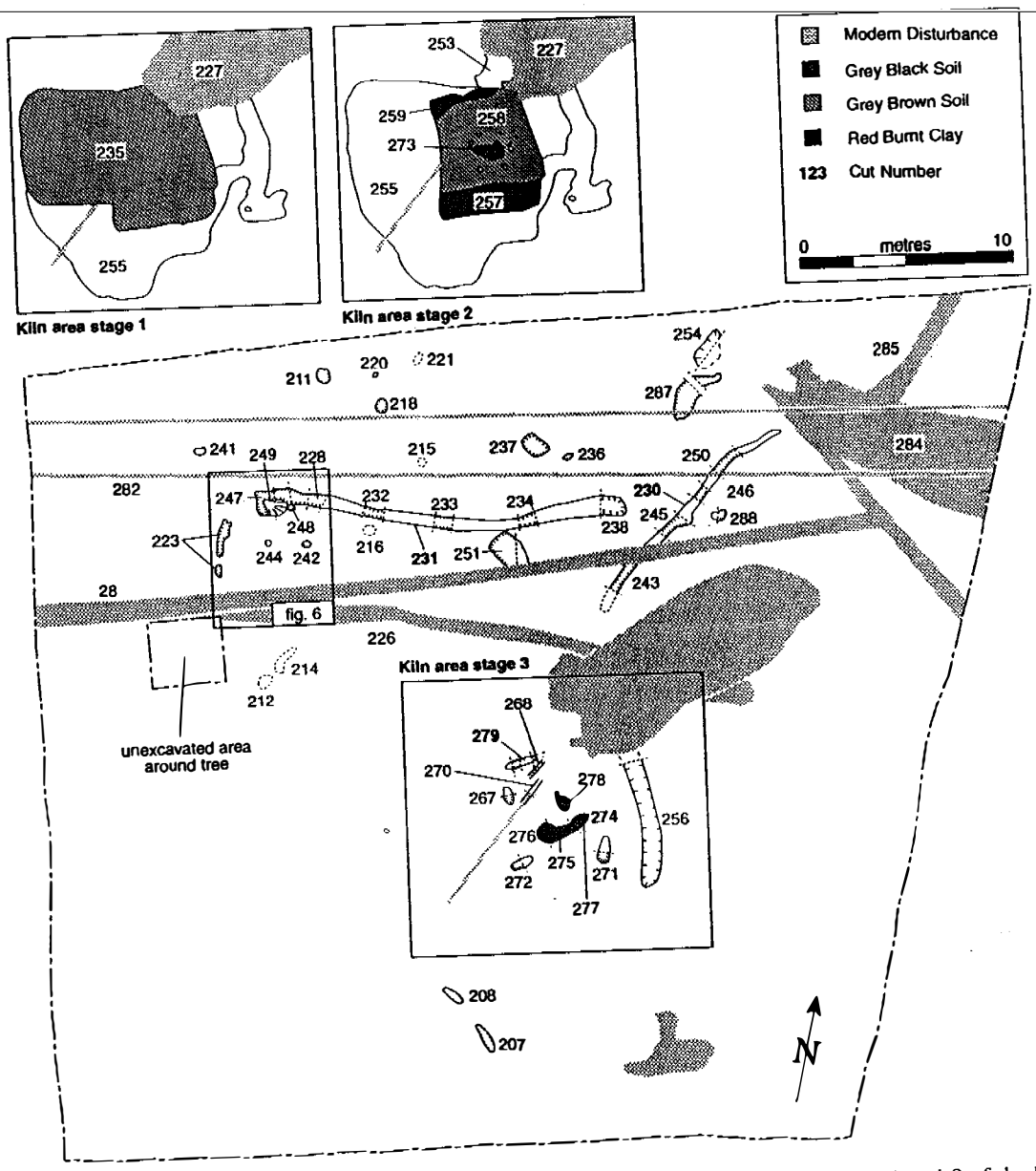


Fig 5 Clacket Lane, Titsey: location of features excavated on the northern site and stages 1 and 2 of the kiln excavation

surface, and the hollows described are most probably a 'creation' of excavation and not features as such.

3.4.2 *The medieval features*

The kiln area and associated contexts

The machining of the central part of the site revealed part of the post-medieval feature (227) and various layers of soil which contained frequent sherds of medieval pottery; some of these layers

were heavily blackened. This area was lightly machined and the surviving topsoil deposits 224 and 235 were removed by hand. These layers were essentially the same though 235 was darker in colour than 224, presumably due to plough disturbance of the blackened layers lying beneath it at this point (fig 5, stage 1).

The removal of these layers revealed more of layer 255, a yellowy-grey clay layer which had been partially visible after machining and was probably part of layer 229 (described above), and the additional layers 257, 258 and 259. A silver halfpenny of Henry III minted in 1248–1250 was recovered from the junction between 235 and 255. The use of the term layer for 257, 258 and 259 (fig 5, stage 2) is possibly slightly misleading as they were little more than patches of different coloured silty clay soil with no obvious relationship between them. 257 and 259 were very much darker than 258 and appeared at this stage to contain much more pottery. Towards the centre of 258 was a sub-circular area of darker silty clay soil with patches of red burnt clay which seemed to be outlined by a number of small sandstone lumps. It was hoped that these stones were part of the upper course of a stone-lined kiln like that found at Ridlands Farm (Ketteringham 1989); the area within them was numbered 273 (fig 5, stage 2).

The removal of 257, 258 and 259 revealed a patchy yellowy grey-brown clay, which was subdivided for convenience due to some minor variations (262, 263, 264, 266) but which was part of the same layer as 255, and also showed two areas of dark soil 265 and 279 which corresponded in position to 257 and 259 respectively. 262 and 264 were more or less the same, though 264 was marginally lighter in colour than 262. 263 merely located a distinct concentration of pottery within 262/264, and 266 was used purely for the collection of a small, potentially reconstructable, pot group within 263. 265 was much darker in colour than 262/264 but merged gradually with the surrounding layer with no clear relationship. These soil variations are not shown on plan because their significance as individual contexts is negligible. 279 was a linear concentration of very many pottery sherds in dark silty clay soil which lacked any clear relationship to 262.

Contexts 262, 263, 264, 265, 266 and 273 were then removed to reveal natural clay, features 267, 268, 270, 271, 272 and two small areas of burning, 274 and 278 (fig 5, stage 3); 279 was initially reduced in two halves (260 to the east and 261 to the west). The stones around the edges of 273 were not found to overlie any others. No relationship with 262/264 could be established and 273 did not appear to fill a distinct cut. The remainder of 279 was sampled in two places under a single number, 269, and was found to fill a slight hollow in the natural clay which was between 0.04m and 0.07m deep.

Features 268 and 270 were both narrow, shallow lengths of gully running on a similar north-east to south-westerly course. To the north-east both features ran into the area occupied by the post-medieval feature 227 and neither could be traced beyond this point. To the south-west 268 appeared to terminate and then continue for a short distance on the eastern side of 267 before becoming unclear. Similarly, 270 gradually became more and more shallow until it was no longer traceable. Segments of these features were excavated and both were found to be a maximum of 0.08m deep with a fill of mid-dark grey-brown silty clay. 268 seemed to have been cut by 279, but this possible relationship was observed in a very shallow section and is, perhaps, best considered as being uncertain. 267, 271 and 272 were all small pits or postholes and measured 0.08m, 0.24m and 0.30m deep respectively. 267 had a fill of mid-dark grey-brown clay, 271 had dark grey silty clay upper fill and a yellowy grey clay lower fill, and 272 had an upper fill of dark grey silty clay, a central fill of yellow-grey clay and a lower fill of dark silty clay. 267, 268, 270, 271 and 272 all contained sherds of medieval pottery of similar type to that recovered from the overlying layers. The functions of these features are unclear, although 268 and 270 were on the same alignment as an indistinct, narrow shallow linear feature which had been observed during the initial clearance of the area (fig 5, stage 1). This feature appeared to cut layer 255 and was assumed to post-date the kiln site for this reason; it was removed along with 255 because its edges were unclear, and was not recorded beyond this. In retrospect, it seems likely that this feature may have been continuous with 268 or 270, or may indicate that these also were of later date than the kiln. It is possible that these features (and, perhaps, 279 as

well) were simply ploughlines or field drains which had not been visible at a higher level due to the nature of the surrounding layers.

Layers 274 and 278 were both localized patches of silty 'soil' blackened by charcoal (though most of this had decomposed and few stable pieces were observed) and containing small areas of red burnt clay. 274 was divided into three parts: 275 (central), 276 (eastern) and 277 (western), though the only difference between these was that 275 contained all the burnt clay patches and all the pottery sherds that were subsequently recovered. The material encountered was much more compact than that removed from above as layer 273. 275 was found to lie directly over the natural clay while 276 and 277 filled the slightest of hollows, though these could simply have been undulations in the surface of the natural rather than anything man-made. 278 was similar to 274 again, consisting of compact silty charcoal-rich 'soil' with red patches of burnt clay sitting directly above the natural clay. No pottery sherds were collected from this context as such, though plenty had been collected from above it as 273. The burnt clay patches from both of these contexts occurred as random lumps and were not (or were no longer) part of any surface or lining — none of the patches was continuous with any that were visible when 273 was first exposed. 274 and 278 were seen at various stages of their excavation by the late Dr A J Clark, whose opinion was that neither context contained material that was suitable for archaeomagnetic dating; even if the areas of burnt clay were the remains of a kiln wall it was clear that they were not wholly *in situ*.

The removal of the last traces of 255 and 262/264 also revealed the gully 256 which ran in a roughly north–south direction along the eastern side of the area (fig 5). To the north this feature ran beneath the post-medieval feature 227 and was not traced beyond this, and to the south it terminated with a rounded end. It was between 0.10 and 0.16m deep and had a fill of orange-grey clay which contained numerous sherds of medieval pottery. The function of this gully is uncertain.

The excavation of the central part of the site did not produce a kiln structure of the type expected but revealed a series of layers containing many sherds of medieval pottery. The excavation and interpretation of these layers was made difficult due to the shallowness of the surviving deposits. A maximum depth of 0.08m was removed between the centre of 273 prior to its excavation and the natural revealed beneath it. A similar or lesser depth of stratigraphy was removed elsewhere after the removal of 235 and layer 255, and the contexts equivalent to it beneath 258 accounted for 0.04–0.06m of this. Nonetheless it seems most likely that what was excavated here was the remains of a badly disturbed kiln and associated waster material and this possibility is discussed further below (chapter 6).

The working area (including ditch 231)

In the north-western corner of the site the removal of subsoil layer 229 revealed a concentration of small stones (239), in a grubby dirty clay matrix, 240, which contained medieval tile fragments, and numerous sherds of medieval pottery (fig 6). To the north this material extended no further than ditch 231, while to the south it was cut by the modern drain 280. To the west the material extended no further than feature 223, while to the east there was no obvious boundary though the spread ended quite abruptly. The stones consisted mainly of small (fist-sized or smaller) angular flint lumps but included pieces of sandstone and ironstone which were on the whole larger than the flints. Some of the stones directly overlay natural clay while others overlay a thin deposit of the matrix material. Around the stones the soil layer was between 0.02 and 0.04m deep and when present beneath the stones it was rarely more than 0.01–0.02m deep. Other than the pottery and tile, the removal of 239 and 240 yielded two small finds (part of an iron knife and a damaged hammer head) and two flat pieces of sandstone with deliberately squared corners. Part of a quernstone had previously been found nearby during the removal of layer 229.

The removal of 239 and 240 also revealed two small features, 242 and 244 (fig 5). 242 was found to be a small posthole-like feature though whether or not it was ever used for this purpose remains uncertain. This feature was roughly circular and measured approximately 0.40m in

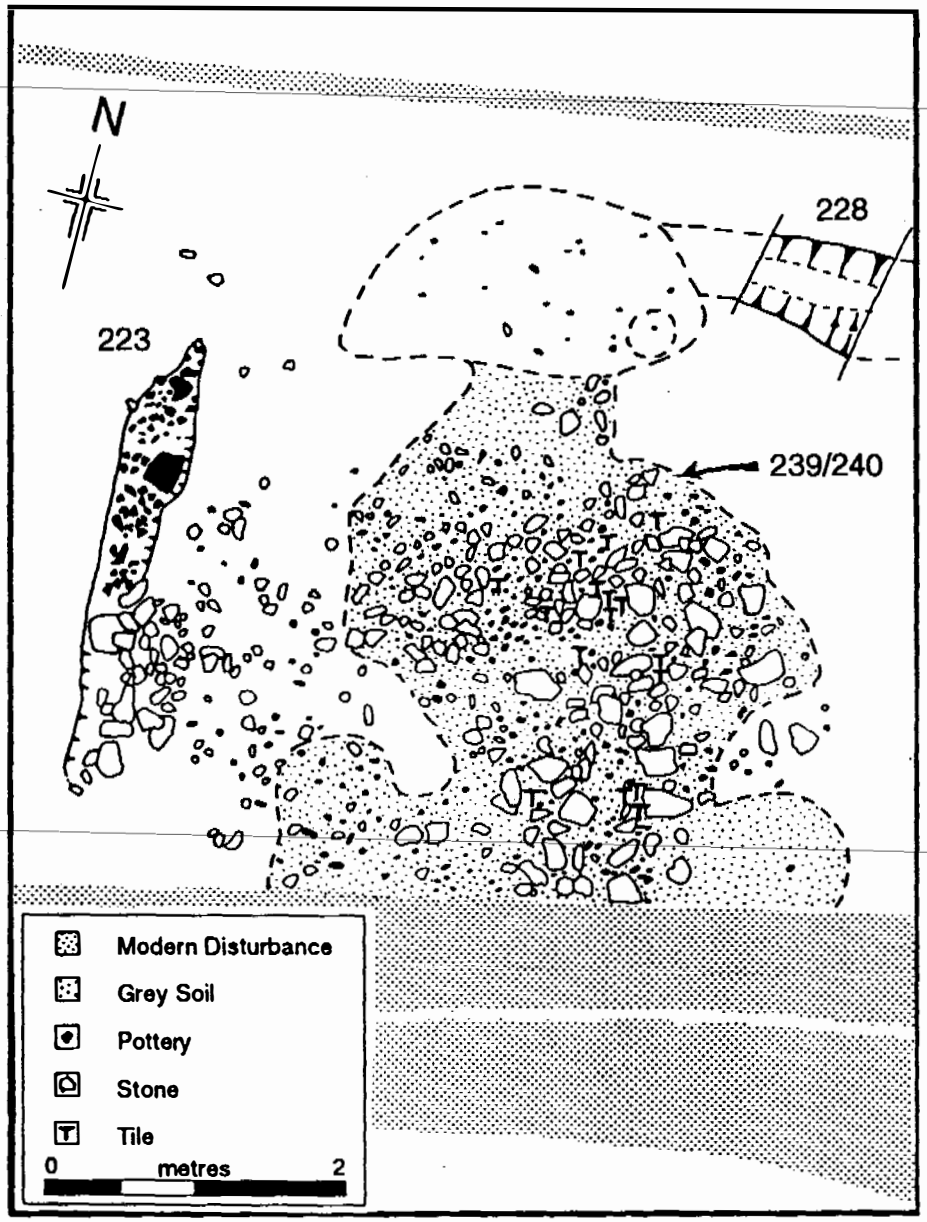


Fig 6 Clacket Lane, Titsey: concentrations of pottery, stone and tile at the northern site working area. See also fig 5 for this area after further excavation.

diameter by 0.12m deep. The fill of the feature consisted of a mass of pottery sherds, seemingly from one vessel, in a matrix of material which was identical to 240. Feature 244 was found to be no more than a very shallow hollow which contained a slightly denser concentration of pottery than had been encountered during the removal of 240. Apart from this the fill of 244 was identical to 240 and it is possible that this feature was no more than a natural hollow on the ground surface.

The western boundary to 239/240 was a short, shallow linear slot or gully (223), which was found to be full of many large and/or joining sherds of pottery which appeared to come from a limited number of vessels; the sherds were surrounded by a matrix of silty grey clay. At the southern end of this feature some (possibly disturbed) stones from 239 were found in the upper part of the fill. As the finds from this feature clearly had good potential for reconstruction work it was divided into four parts. This enabled the sherds to be removed in groups and avoided too much intermixing of sherds from different vessels. The maximum depth of this feature was 0.10m.

To the north 239/240 was bounded by features 231, 247, 248 and 249. Feature 231 was a slightly meandering ditch which was discovered after the removal of layer 229 (discussed above) and ran in an east-west direction across the northern part of the site. Prior to the removal of 239/240 five segments of the ditch (228, 232, 233, 234, 238) were excavated and showed it to have a fill of pale grey silty clay. The profile of the feature in these segments was found to be quite irregular. Fourteen sherds of medieval pottery were recovered from segment 228, two small sherds of pottery were recovered from the top 0.05m of segment 232, and eight sherds were recovered from the top 0.05m of the eastern terminal segment 238; segments 233 and 234 yielded no finds. With the removal of 240, which was very thin in this area, what appeared to be a bulbous eastern termination to 231 was observed. This was sectioned in two places, firstly by removing the eastern end of the feature and secondly by extending the western end of the previously dug segment 228 (fig 5). The first section showed that much of the bulbous end was occupied by a wide shelf (249) and indicated that 231 turned a sharp right angle (247) before terminating with a square end (fig 5). However, the excavation of 247 was curious as its profile was found to be more regular, with steeper sides and a flatter base than the other segments of 231. The second section showed 228 to continue as previously until close to the section edge. At this point it deepened slightly and, on the southern side, may have been cut by the possible posthole 248, which had a fill of dark grey silty clay and yielded quite frequent sherds of medieval pottery. Finally the area between the two segments was removed to reveal the rest of 247 (which maintained the steep sided flat-bottomed profile) and 249. Finds of medieval pottery were found at all levels of 247 and no fill distinctions were observed between 228 and 247. 249, which had a fill of dark grey silty clay containing frequent sherds of medieval pottery, appeared in the section to have been cut by 247.

The interpretation of the features discussed here is not straightforward as several points remain unresolved. The most likely explanation of 239 and 240 is that they represent floor surface debris and indicate the site of a small structure which was probably used as a working area (for further discussion of its character see chapter 6). To the west of 239/240 lay feature 223 which served no obvious function, though it is possible that, if a building had been present here, it might have been dug as a crude drain to divert water away from one of the walls. To the north feature 249 again serves no obvious function and feature 247 is problematic as there remains some doubt as to whether it is part of ditch 231; despite the alignment and apparent similarity of fills between 247 and the rest of 231, the distinct change of profile observed raises the possibility that they may have been separate features. Twenty-eight sherds of medieval pottery were found scattered through 247 and, because of this and its relationship to 249, there can be little doubt that 247 is a medieval context. In contrast to this, a total of only 24 sherds was recovered from 228, 232, 233, 234 and 238, and the material from 232 and 238 was not deeply stratified within the fill (the location of the sherds from 228 was not recorded, though given its close proximity to 239/240 these finds could also have come from the surface of the fill). Therefore, if 231 and 247 were separate features there is a possibility that 231 had infilled (or largely infilled) prior to the use of the site for pottery production; if 231 had been a contemporary or later feature it would surely have contained more finds given the amount of surface debris that is likely to have been present. Further, although it can be misleading to place too much emphasis on the number and distribution of finds, the presence of a second linear feature with a similar fill and virtual absence of finds (230, discussed below) may indicate that earlier features were present on site, and may enhance the possibility that 231 belongs to a pre-kiln phase of activity.

Features 207 and 208

These were both short linear slot-like features with fills of grey-brown silty clay which yielded numerous sherds of medieval pottery; both were a maximum of 0.11m deep. Because of their shape and small size it seems unlikely that these features were used primarily for the disposal of waste sherds, though this might have been a secondary function, but neither served any obvious function other than this.

Feature 236

This was a small posthole with a fill of mid-grey clay which produced six sherds of medieval pottery; the feature was a maximum of 0.10m deep. As no other postholes were found in the vicinity nothing can be said about the possible function of this feature.

Feature 237

This was a shallow pit with a fill of pale yellowy-grey clay which contained two sherds of medieval pottery, both from the upper part of the fill; the feature was a maximum of 0.10m deep.

Feature 241

This was a small isolated posthole with a fill of light grey clay which yielded two sherds of medieval pottery; the feature was a maximum of 0.18m deep.

Feature 251

This was a large rectangular pit which was cut by the 20th century drain 280. The feature was a maximum of 0.70m deep with an upper fill of blucy-grey clay and a lower fill of grey-brown clay; this distinction was only visible in section and the finds (119 sherds of medieval pottery which were collected from all levels of the fill) were collected under one overall context number. The function of this feature remains uncertain — it was originally thought that it might have been dug to produce clay for pot-making; however, although this is possible, it is perhaps too small to have been used profitably for this purpose.

Feature 254

This was a shallow pit with a fill of light-mid-grey clay which contained frequent sherds of medieval pottery. The feature was on average no more than 0.05m deep and contained occasional flecks of charcoal and small patches of ash-like material (though no *in-situ* burning had taken place here).

3.4.3 *The post-medieval features*

A number of post-medieval features were identified (microfiche 3–4). These included ditches representing modern field boundaries (ditches 226, 285 and 286), rubbish dumped as hardstanding for a former farm entrance (227, 283 and 284), a drain (280) and field drains (281 and 285).

3.4.4 *Undated features*

Gully 230 (fig 5)

Feature 230 was a small gully which ran in a roughly north-westerly to south-easterly direction and was cut by the 20th century drain 280. Four segments of this feature were excavated (243,

245, 246 and 250) and it was found to be between 0.10 and 0.17m deep with a fill of grey silty clay. One sherd of medieval pottery was recovered from segment 243, two similar sherds were recovered from 246 and a small fragment of iron was found in 250. The finds recovered could indicate that this feature is of medieval date, but given the very small sherd count it seems unlikely that the feature could have been infilling during or after the time that the site was being used for pottery production, so its exact chronology remains uncertain. The fill of this feature and the paucity of finds recovered from the excavated segments make it comparable with ditch 231, which has been discussed above but may well belong to this part of the report.

Features 287 and 288 (fig 5)

These were observed as soil marks which appeared marginally darker than the surrounding natural clay. Both features were sampled and were found to have fills which varied little from the natural; their edges were uncertain and their depth was variable. Neither feature contained any finds. With these factors considered it seemed most likely that the features were simply variations in the natural geology — neither was formally recorded.

3.5 THE SOUTHERN EXCAVATION

Careful observation of the machining of this site in favourable conditions for visibility showed that the principal features of interest were contained within a strip some 15–25m wide which occupied much of the central and southern part of the site. A line of postholes and several isolated features were found outside this strip, but there was no indication that detailed surface cleaning beyond would be profitable, so the resources available were concentrated elsewhere. The site area sloped gently downwards from west to east with the slope becoming more pronounced towards the east.

3.5.1 *Site stratigraphy*

The stratigraphy of this site was similar to the simple sequence encountered on the northern excavation. It consisted of a topsoil layer, some 0.20–0.30m deep, which either lay directly above the natural clay (to the north) or lay above a grey subsoil layer which itself overlay the natural clay. Where present at all the subsoil layer was very thin over much of the site area and, consequently, was largely removed along with the topsoil. Two context numbers were used for the unstratified finds recovered during machining, 500 for the western half of the site and 501 for the eastern half. There was no apparent difference between the material recovered but each half centred on a localized area of dark soil, and the different contexts merely represent an attempt to separate the finds until the significance of these areas is understood. The two areas of dark soil contained numerous sherds of medieval pottery and were provisionally numbered 502 and 508; both were only lightly machined. Between these areas the subsoil layer also contained frequent sherds of pottery and was divided into areas 503, 504, 506, 507 and 509 which were removed by hand (fig 7). This layer was no more than 0.08m deep at its deepest point and was found to seal features of medieval and earlier date.

Subsoil areas 503, 504, 506 (fig 7)

The removal of 503, 504 and 506 produced many sherds of medieval pottery and revealed natural clay which was cut by various features. Little more need be said about these subsoil contexts as they were clearly part of a single layer which has been adequately described above. However, it is worth noting that three small finds (an iron knife, an iron nail and another iron object) were recovered during the removal of 504; these were found close to or directly above the surface of the natural. It is also interesting to note that a Roman base sherd was recovered from 503. The remaining subsoil areas, 507 and 509, are discussed below.

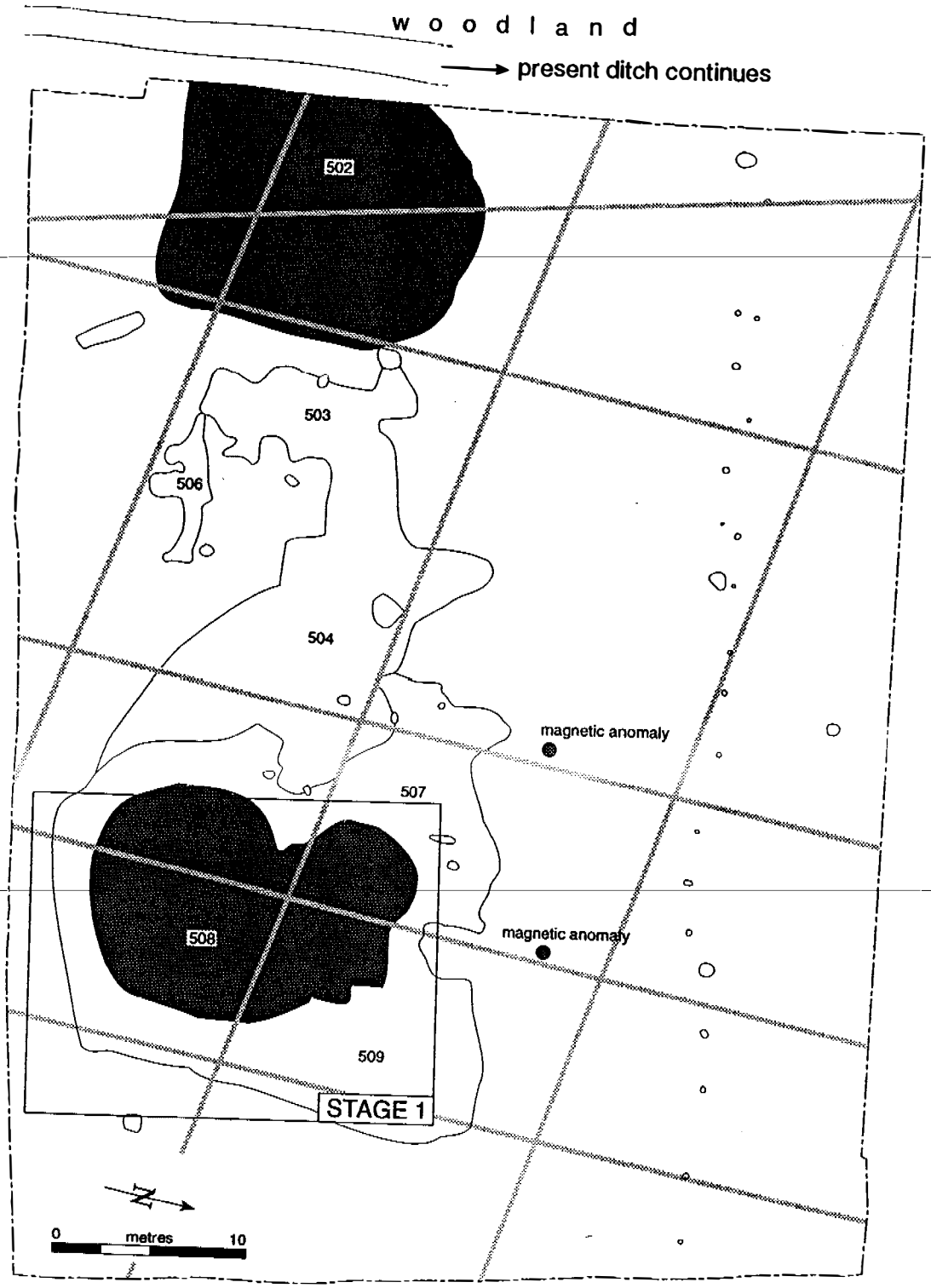


Fig 7 Clacket Lane, Titsey: location on the southern site of concentrations of pottery within dark soil and subsoil layers (see fig 9 for the area after removal of these layers and fig 8 for intermediate stages 2 and 3 in the waster dump area). The rectilinear arrangement is of modern field drains.

3.5.2 *Evidence of prehistoric and other pre-kiln site activity*

During the excavation a number of pieces of struck flint were recovered which indicates that some degree of prehistoric activity was taking place in the vicinity. These flints mainly consist of waste flakes, and a general Neolithic/Early Bronze Age date has been suggested for the assemblage as a whole (see below). In addition a sherd of Roman pottery was recovered during the removal of layer 503 and a number of features provide negative evidence which suggests that they probably predate the kiln site.

Feature 555

Feature 555 was a ditch which ran in a north–south direction and was sampled by the excavation of six segments. Segments 556, 586 and 587 all had single homogeneous fills of orange-grey clay while 565, 584 and 585 contained two layers: a shallow upper layer (A) of dark grey silty clay (0.03m deep in segment 565 and 0.10m deep where deepest in 585) overlying the main fill (B) which was identical to that encountered in the single layer segments. The segments varied in depth between 0.25m (556) and 0.45m (584). Sixteen sherds of medieval pottery and one possible sherd of Roman pottery were recovered from 565 but no finds were recovered from any of the other excavated contexts of this feature. When it is considered that the northern part of this feature was sealed by layer 502 and that kiln 542 lay just 3m to the east of segment 584, it does not seem feasible that 555 could be contemporary with or later than the pottery production taking place on site, yet contain so few finds. It is unfortunate that the exact location of the sherds recovered from 565 was not recorded. It seems very possible, in view of the proximity of the kiln, that the medieval finds derive from this later activity and were collected from the dark upper layer. The presence of this upper layer here and in segments 584 and 585 may indicate that the feature survived as a slight ground hollow in these locations, and that final infilling took place soon after the commencement of pottery production. It is impossible to say whether the single Roman sherd recovered from 565 is representative of the age of the feature or whether it was present residually. The probable relationship of this feature to another ditch (557) is also of significance. The fills of each ditch appeared identical at the point where they crossed each other, but sherds of medieval pottery were found throughout 557 and for this reason it seems likely that it cut 555.

On the basis of the evidence presented it would appear that ditch 555 most probably predates the kiln site. The exact chronology of the feature remains uncertain, but it may be significant that the parish boundary, which may well follow an estate boundary with origins in the period before the Norman Conquest, is shown to pass through this area in the same direction as 555. The London–Lewes Roman road must also have passed close by, but trial trenches through the road (see above, chapter 2) had revealed that it was not associated with a roadside ditch.

Feature 564

This was an elongated pit which was sampled by the excavation of two segments and was found to be a maximum of 0.35m deep with a fill of fine 'clean' light grey clay. This fill contained no finds and was quite unlike that of any other feature excavated on site. The date and purpose of this feature is unknown, but its unique character and the absence of medieval pottery sherds in the fill may suggest that it pre-dates the kiln site.

Feature 567

This was a shallow gully from which six segments, 568, 569, 570, 571, 573, 573, were excavated. These segments had a single homogeneous fill of orange-grey clay and varied in depth from 0.10m deep (568) to 0.19m deep (573). The feature ran in a north-west to south-easterly direction across the south-western corner of the excavation area and terminated at segment 568.

Very few finds were recovered from the excavated segments of this feature and these consisted of two sherds of medieval pottery from 569, two sherds of medieval pottery from 270, one sherd of prehistoric calcined flint-gritted pottery from 571, and one sherd of similar prehistoric pottery from 572; the medieval sherds are recorded as coming from the surface of the excavated fill while the other sherds came from close to the bottom of their respective segments. Given that the northern part of gully 567 was sealed by layer 502, that kiln 542 lay just 4m to the west of segment 571, that similar gullies in the area (547 and 548) contained numerous sherds of medieval pottery in their fills, and that the medieval sherds recovered from 569 and 570 probably represent surface contamination, it seems most probable that this feature pre-dates the kiln site, as a contemporary or later feature would inevitably have contained more frequent sherds of medieval pottery. It is impossible to say much about the small sherds recovered from 571 and 572 other than that both are of prehistoric date and consequently may indicate an approximate date for the feature.

Feature 593

This was probably a large pit though its extent remained uncertain due to difficulties encountered when trying to trace its edges at ground level — the appearance of its upper fill was not sharply differentiated from the surrounding natural. The feature was clearly cut by segment 588 of the medieval gully 548 but its relationship, if any, to segment 570 of gully 567 is uncertain. Feature 593 was a maximum of 1 m deep where sectioned and contained an upper fill (top 0.45m) of patchy orange-grey silty clay and a lower fill of grey silty clay with orange clay patches and occasional pebbles. Sixteen sherds of medieval pottery were collected from the top few centimetres of the upper fill but no other finds were recovered. Given that this feature was sealed by layer 502, that it was cut by the medieval gully 548, that the medieval sherds recovered from it probably represent surface contamination, and that kiln 542 lay just 5m to the south-west, it seems most probable that this feature pre-dates the kiln site (for the same reason as suggested for 567 above). This feature served no obvious function.

Feature 598

This was a small pit or posthole with a fill of pale grey clay with specks of orange clay. The feature was clearly cut by segment 590 of the medieval gully 589 and was a maximum of 0.14m deep. One find, a rim sherd of Bronze Age date, was recovered during the excavation of this feature and presumably dates it.

3.5.3 *The medieval features*

The kiln and associated contexts (figs 9, 10, 11)

The machining of the south-western corner of the site revealed an area of dark soil which contained numerous sherds of medieval pottery (fig 7). This area was lightly machined and then reduced in two spits, 502A and 502B, to reveal natural clay and several features. 502A was essentially blackened topsoil and was a maximum of 0.10m deep. Its removal revealed natural clay around the perimeter of the area and a marginally darker more charcoal-rich deposit towards the centre. This deposit, removed as 502B, was a maximum of 0.05m deep and, considering its reduced dimensions, appeared at the time to contain proportionally more pottery than 502A. The relationship of 502B to the site's subsoil layer could not be established so it remains possible that both were separate layers, or that 502B (which overlay medieval features as did the subsoil) was actually part of the subsoil layer but was darkened due to the influence of the features lying beneath it; this question is discussed further below (page 31). The removal of 502B revealed several features of which 542 and 589 are of relevance here (fig 9).

542 had the appearance of a linear pit which had clearly been cut by a post-medieval field drain and consisted, at the top, of large amounts of pottery apparently representing substantial

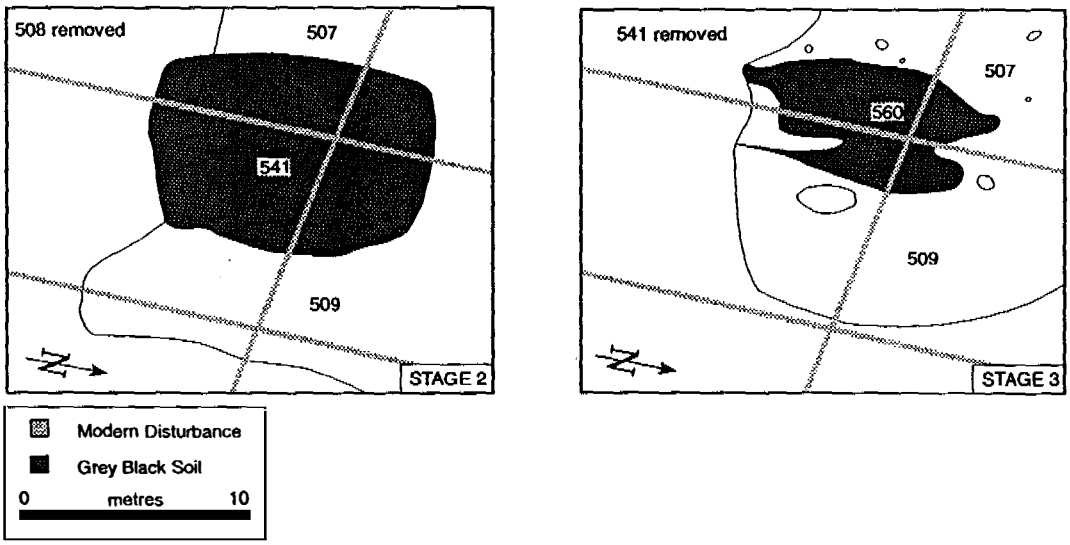


Fig 8 Clacket Lane, Titsey: intermediate stages between those shown on figs 7 and 9 in the excavation of the waster dump area of the southern site

portions of vessels. The overall shape and character of the feature suggested that it was probably a pottery kiln and dark areas identified at each end were believed to mark the positions of stoke holes. The feature was excavated by layer and this assumption was found to be correct. Context number 542 was used jointly as a number for the first layer removed and as a general reference number for the feature itself.

The lower part of 542 consisted mainly of fragments of hard red fired clay mixed with softer clay and brown silty soil, and was thinner or absent at the extremities of the stoke holes. The removal of 542 revealed the top of a spine of clay and stones (619, fig 10), which occupied the central part of the kiln leaving channels around the sides, and an underlying black layer of charcoal and silty clay which covered both channels and both stoke holes. This layer was numbered 614 in the channels and 617 and 618 in the northern and southern stoke holes respectively. The northern stoke hole was separated from the rest of the kiln by the field drain which cut the feature, but despite this its fill appeared to be contemporary with 614. The removal of the charcoal from this stoke hole revealed natural clay. The southern stoke hole appeared to have been intentionally blocked off at some stage by stones which were packed into the charcoal (not shown on fig 10). Although some of the material present here may have been contemporary with 614, this suggested that the lower part of the fill may relate to an earlier firing of the kiln; this lower fill was later renumbered (627). The removal of 614 revealed a thin layer of silty greeny-grey clay (620), and beneath this was another layer of compact broken pottery (most of which was in the larger channel on the eastern side of the kiln) in a grey-brown 'sticky' clay with some charcoal (625). A heavy concentration of pottery impressed into the northern half of the eastern wall of the kiln was also removed at this stage. This material was collected under the same context number (625), but for clarity it is shown as 615 on the illustrations. Below 625 lay a thick black layer of charcoal and silty clay which contained quite frequent sherds of pottery (626). This layer ran into the southern stoke hole where it was removed as 627. Complete excavation showed that the southern stoke hole was larger and slightly deeper than its northern counterpart and had a steeper angle of entry into the kiln. The removal of these layers revealed the central spine (619) and the kiln wall (616). The central spine consisted of clay and large stones, most of which were found at its southern end. Many of the stones were not entirely exposed until layers 620, 625 and 626 had been removed, which indicated that they were original features of the kiln — the others may have been original, or

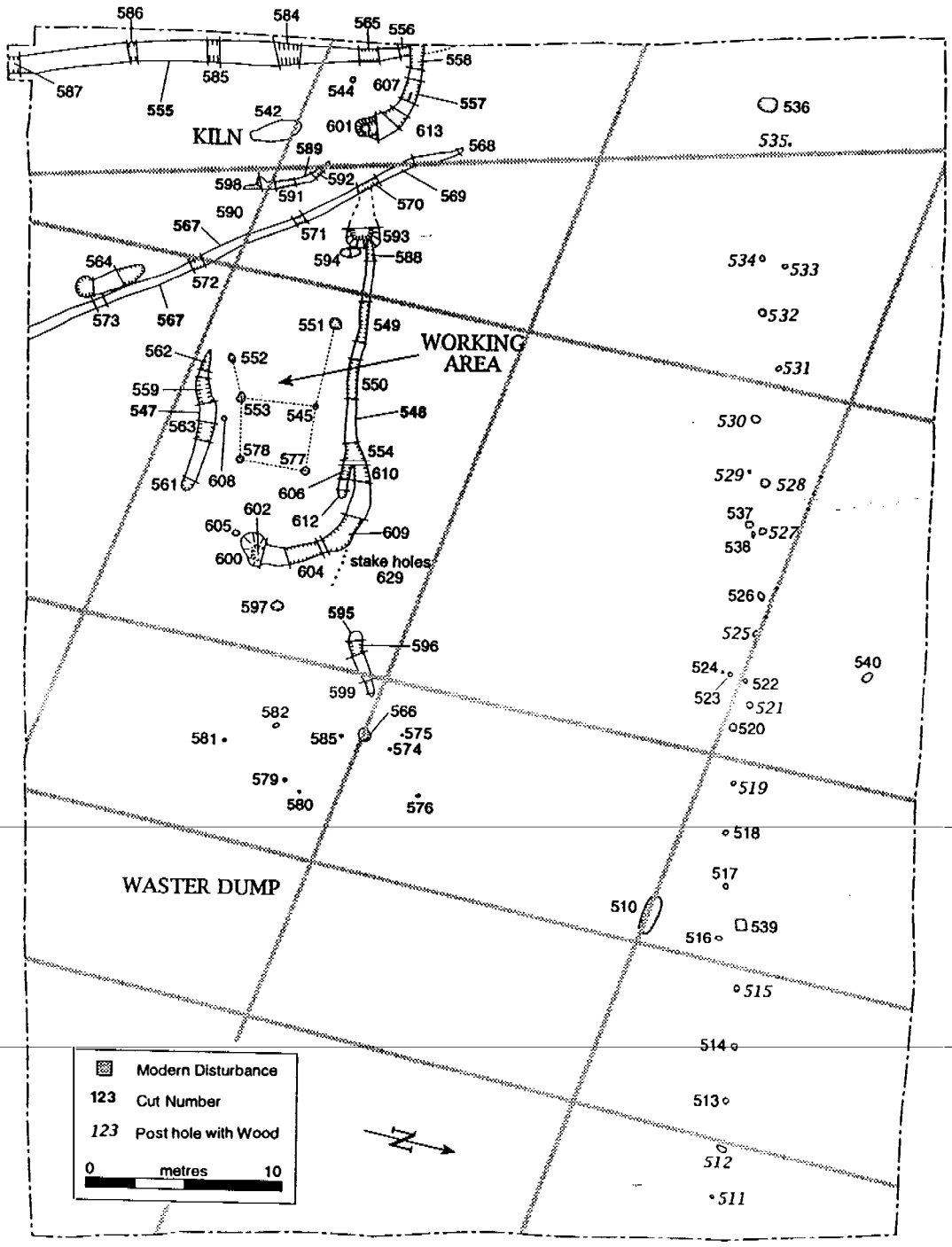


Fig 9 Clacket Lane, Titsey: location of the excavated features on the southern site

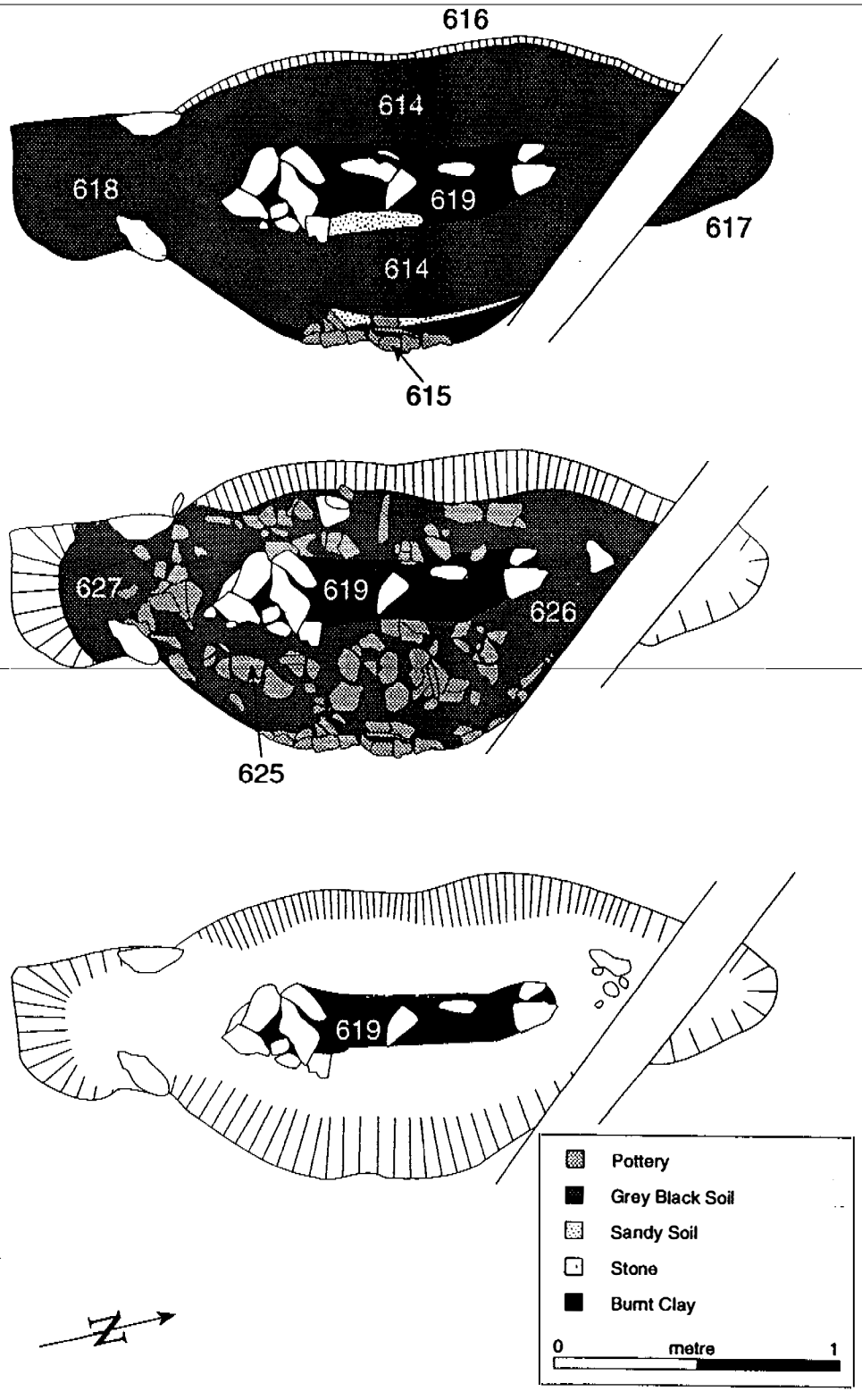


Fig 10 Clacket Lane, Titsey: plan of successive stages in the excavation of the southern site kiln

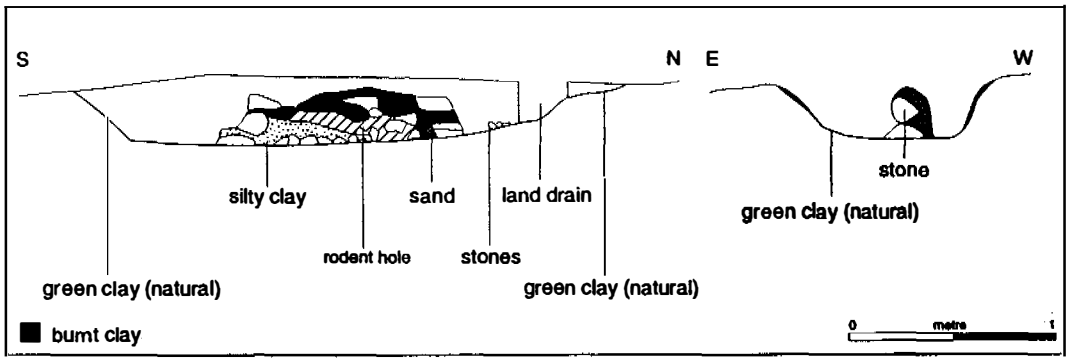


Fig 11 Clacket Lane, Titsey: profiles through the southern site pottery kiln (feature 542)

could possibly have been added at a later date to repair the spine. The wall of the kiln consisted of natural clay which had been oxidized to a depth of roughly 0.02m and, despite the fact that it had been damaged in places, provided a suitable surface for archaeomagnetic dating (see figs 10 and 11).

The most likely interpretation of the kiln and its component layers would seem to be that 542, 614, 617 and 618 represent the remains of the final firing of the feature, and these layers overlay a natural infill or dump deposit (620) which may have been introduced between firings. 625, 626 and 627 presumably represent the remains of the initial or earlier firings of the kiln and the impressed pottery of 615 may have been used to repair the kiln wall. 619 was a constructional feature of the kiln and 616 was created during firing. The kiln appears to have been used for at least two firings but conceivably could have been used for more — if it had been periodically cleaned out the evidence of more frequent use would have been destroyed. Although it had the appearance of a double entry structure, there was some evidence, both structurally, with the possible use of stones to block off the southern stoke hole and with the varying character and depth of the stoke holes, and stratigraphically, with no evidence of a fill deposit comparable to 626/627 being present in the northern stoke hole, to suggest that it may have been used on some occasions as a single entry feature. It is possible that the kiln was originally used as a single entry structure, allowing the formation of 626/627, and that a second shallower stoke hole was added prior to the final use of the feature, hence the appearance of 614, 617 and 618 as a single contemporary deposit. It could also be argued, however, that the difference between the two stoke holes is simply accidental and that, if partial cleaning-out has taken place, a deposit contemporary with 626/627 could have been removed from the northern stoke hole. If layer 620 was a natural infill deposit, its absence from the stoke holes may be an indication that some degree of cleaning-out did take place.

Approximately 2m to the east of the kiln a curvilinear gully was discovered; this appeared to flank the whole of this side of it. Finds from the initial clearance of this feature were collected under its overall number, 589; it was then excavated in three segments, 590, 591 and 592, and found to be a maximum of 0.10m deep, with a fill of dark grey-black silty clay which was rich in charcoal and contained frequent sherds of medieval pottery. The southern end of the feature was cut by the same field drain that cut the kiln, and segment 590 itself cut an earlier feature, 598. The fill and finds collected from this feature suggested that it was probably contemporary, and may have been directly associated with one of the firings of the kiln, but its function (unless perhaps it relates to construction of some form of windbreak) remains unknown.

The results of the archaeomagnetic dating later suggested a date span of AD1230–1270 at the 68% confidence level, or AD1200–1290 at the 95% confidence level. Soil samples were taken from the charcoal-rich layers within the kiln and analysis of the charred remains recovered has shown that it originated almost entirely from the wood used to fuel the kiln — most of this wood

appears to have been oak and beech branchwood. Two indeterminate cereal grains were also identified. This information is fully presented in Appendices 1 and 2 below.

The building area (fig 9)

The removal of the subsoil deposits 503, 504 and 506 had revealed a number of features, mainly postholes and gullies (fig 9). All of the postholes were within the area enclosed by the two gullies 547 and 548. Both of these gullies were sampled by the excavation of segments and were found to have fills of orange-grey silty clay (the segment numbers for each feature are indicated on plan). Every segment excavated contained sherds of medieval pottery and this material was particularly abundant in 549, 544, 559, 604, 609 and 610. Surface finds present between the excavated segments were recovered under the overall number for each gully, with the exception of those occurring between segments 609 and 610 of gully 548 — here surface finds were more prevalent and were collected under the number 611. Feature 547 was a maximum of 0.16m deep and 548 was a maximum of 0.19m deep.

Several additional points of interest arose from the excavation of gully 548. At its western end 548 cut the large pit 593 and towards its eastern end the feature divided into two parts. The southern fork continued for a short distance before terminating and remained a similar width to the rest of the feature to the west. The northern fork widened and curved to the south before terminating. There was no difference in colour or texture between the fills of each fork. A line of closely spaced stake holes, 629A–J, ran through and beyond segment 609, but the relationship of these features to the gully could not be established and their purpose is unknown. The southern terminal of 548 contained a small area of burnt material which appeared to be *in situ*. When the excavation of this segment began it appeared no different from the other segments of the gully and finds were initially recovered under the segment number, 600. However, after about 0.06m of the fill had been removed a small area of dark charcoal overlying a thin layer of red burnt clay was revealed. This material (602), was situated in the central part of the segment and was surrounded by silty grey clay (603) which was no different from that removed as 600. The maximum depth of the feature was only 0.12m and all contexts contained sherds of medieval pottery. It seems most likely that the cut for the end of the gully was used for a makeshift hearth which later became covered by the same infill deposit as the rest of the gully. Unfortunately, insufficient burnt remains survived for archaeomagnetic dating to be attempted.

Eight postholes, 545, 551, 552, 553, 577, 578, 605 and 608, and a small pit or posthole (594) were found within gullies 547 and 548. Three of the postholes, 552, 605 and 608, were quite shallow, measuring between 0.10m and 0.13m deep, but the remainder were substantial features with depths which ranged between 0.26m (545) and 0.52m (577). Each feature had a fill of orange-grey clay and yielded sherds of medieval pottery. 578 contained a large stone which was pressed hard against the southern side of the feature and had presumably been used as a packing stone. 551 and 533 contained medium-sized stones which were found in random positions within their fill and may either have been dislodged packers or stones used to backfill the postholes after removal of the post (as there were no other indications of post removal the latter suggestion seems less likely). 577 was cut by a post-medieval field drain (not shown on plan) and 605 had a gently sloping and rather indistinct northern edge, which suggested that the post may have fallen over or been removed in this direction.

Feature 594 was no more than a shallow scoop which measured a maximum of 0.10m deep and had a fill of orange-grey clay which contained several sherds of medieval pottery. This feature is roughly on the same alignment as postholes 577, 545 and 551, but whether it served as a posthole, or a small pit, or had some other function remains unknown.

The interpretation of these features as representing a small building and associated features is considered in the Discussion at the end of this report.

The waster dump and area to the east of the building (figs 8 and 9)

The excavation of the second dark soil area exposed during the machining of the site began with the removal of a layer of darkened topsoil containing numerous sherds of medieval pottery; this was reduced in two spits, 508A and 508B. Beneath 508 was a layer of darker, siltier, more charcoal-rich soil which also contained numerous sherds of pottery and was removed as context 541. Below this was a similar layer (560) which was possibly marginally darker in colour than 541. During its excavation 560 appeared to contain a higher proportion of sherds per square metre than 541; its removal revealed natural clay scarred with plough lines (which had cut through the waster dump in the post-medieval period). Each of these layers covered a smaller overall area than its predecessor. A maximum depth of 0.15m of stratigraphy was removed between the top of 508A after machining and the natural clay — layer 508 occupied approximately 0.10m of this (fig 7).

The dark soil deposits were surrounded by the subsoil areas 507, 509 and part of 504. There was no distinction between 507 and 509, and although 504 was marginally lighter in colour than 507 this was simply due to the influence of the dark layers nearby. Despite repeated examinations it was not possible to establish a reliable relationship between the dark soil layers and the subsoil. There was a suggestion that the subsoil may have overlain 560 around its extremities, but elsewhere it appeared that the dark soil may have overlain the subsoil, and the problem was heightened by the shallow depth of the subsoil in this area and its similarity to the natural clay.

It seems most probable that the layers of dark soil containing numerous sherds of medieval pottery represent the remains of a waster dump which was associated with the pottery production taking place elsewhere on site. The original dump presumably formed a small mound on the contemporary ground surface (centring on 560) and was probably higher but less widespread than the excavated remains. The stratigraphy encountered presumably results from disturbance of the dump by the combined forces of natural erosion and agricultural ploughing

The removal of the layers described here revealed several features (566, 574, 575, 576, 579, 580, 581, 582, 583, 595, 597) which were cut into the natural clay. All of these features were filled by orange-grey clay, with quite frequent flecks of charcoal in the case of 566 and 579, and all contained sherds of medieval pottery. 595 was a short gully from which two segments, 596 and 599, were excavated — this feature was a maximum of 0.12m deep. 576 and 580 were little more than shallow scoops (0.05m and 0.07m deep respectively), but 580 was interesting because it was filled almost entirely by a fragmented pottery vessel. The lower half of this was complete (though badly cracked) and was filled by sherds from the remainder of the vessel. The feature may have been used as a posthole, otherwise its function is unknown. The remaining features were all reasonably convincing postholes but were quite unremarkable and make no structural sense on plan. 597 was the most substantial of these, measuring a maximum of 0.25m in depth, while the remainder varied between 0.07m (581) and 0.16m (582). 566 was cut by a post-medieval field drain. 582 contained some medium-sized flints which were possibly used as packing stones.

Feature 536 (fig 9)

Feature 536 was a small pit with a fill of orange-grey clay which contained several sherds of medieval pottery. The feature was located in the north-west corner of the site and was a maximum of 0.26m deep. Its function is unknown.

Feature 544 (fig 9)

This was an isolated posthole which was found after the removal of layer 502B and lay approximately 3.25m to the north-west of kiln 542. This feature was lined on all sides with fist-sized and smaller packing stones (angular pieces of flint and ironstone) in a matrix of grey clay which surrounded a very clear postpipe of dark charcoaly soil (possibly derived partly from layer

502 as the post decayed). The feature contained quite frequent sherds of medieval pottery and was 0.25m deep.

Feature 557 (fig 9)

Feature 557 was a ditch which entered the site area from the west and curved to a south-facing termination. The feature was sampled by the excavation of four segments, 558, 601, 607 and 613, which showed its fill and profile to be variable. Segment 558 had a simple U-shaped profile and a single homogeneous fill of orange-grey silty clay. Next to this, segment 607 was found to have a similar profile at its western end but a stepped profile with two distinct basal levels towards the east. At the eastern end three fill layers were encountered, an upper fill of dark grey-black silty clay (607A), a central fill of orange-grey clay (607B), and a primary fill which was very similar to 607B but contained marginally more pebbles and was only found in the lower of the two base levels. 607A gradually decreased in depth and was not present at all in the western (east-facing) section. The next segment, 613, had a wide U-shaped profile and two layers of fill: 613A, which was equivalent to 607A, and 613B, which was equivalent to 607B and 558. The terminal segment, 601, contained the same sequence of fill layers as 613 (numbered 601A and 601B here), and had a stepped profile similar to 607, though this time there was an indication that three base levels may have been present. Away from the section line the profile became more uniform and what appeared to be a square posthole was revealed in the base of the feature. This was excavated as 601C but was found to be no more than a shallow hollow and is probably of no significance. There was no difference in colour or texture between 601B and 601C.

All the excavated contexts of ditch 557 contained sherds of medieval pottery, though the vast majority were found in the upper fill layers of segments 601, 607 and 613 — this indicates that the final infilling of the feature was influenced by the presence of layer 502 (the soil layer associated with the kiln). The variations in profile and the occurrence of more than one base level within certain segments suggest that the feature was recut at least once, though cut lines were not visible in the sections to confirm this. At its western end 557 crossed another ditch, 555, and, although no differences could be detected between the fills of these features at this point it has been suggested (above) that 555 pre-dates the kiln site. If this was the case it must have been cut by 557.

3.5.4 *Features of medieval or later date* (fig 9)

Full details and an extended discussion of these features are given in microfiche 4–6. It is sufficient to say here that the main line of postholes must represent a fence-line which, despite a lack of incontrovertible evidence, is considered to have been of relatively modern date. There is a greater possibility that postholes 536, 539 and 540 are contemporary with the kiln, but there is no obvious indication of their purpose.

3.5.5 *Post-medieval features* (fig 9)

Other than the narrow terracotta pipe field drains, which crossed the site at regular intervals cutting all the medieval features in their path, and the features of uncertain date discussed above, one feature of clearly post-medieval date was excavated on site. This feature, 510, was a pit which appeared to be associated with the field drain in some way, though exactly what its purpose was remains unclear.

Chapter 4: The pottery, by Phil Jones

4.1 INTRODUCTION

In all, 427kg of pottery was recovered from the southern site and 265kg from the northern site. Larger quantities than these were removed during machine stripping or were left within features

after sufficient sherd samples had been retrieved. Much of the pottery from both sites is of a sandy coarseware with grey, brown, or orange surfaces. Although most vessels were wheel-thrown, some, and perhaps many, had been made by hand. A restricted range of utilitarian coarseware vessel types is represented, but a significant proportion of the vessels at both sites has a finer sand temper, and most of these are jugs. Only a handful of glazed sherds were found but these are, most probably, from vessels that were not made at either of the sites.

A consideration of the vessel forms, and some dating evidence provided by an archaeo-magnetic determination and a reasonably stratified coin fragment, suggests that the Titsey South site had probably been in operation during the second half of the 13th century and that production at Titsey North may also have begun in the late 13th century, but continued in use into the early part of the 14th century, after the abandonment of the southern site.

The excavation strategy employed at the two production areas at Titsey has provided more comprehensive samples of pottery than have usually been excavated at such rural manufacturing sites in the Home Counties. The past record, especially in Surrey, is largely of chance discoveries of kilns or waster heaps, and of a few, more considered, excavations of single examples of the same. The immediate environs of kiln(s) and waster dumps have not often been excavated, and it was for this reason that relatively large areas around the concentrations of pottery revealed by trial trenching at Titsey were also dug. Details of workshop structures and other sunken features that were found at the two sites have been described in chapter 3. The pottery samples from these features, as well as those from the kilns and waster dumps, have provided a good opportunity for understanding any changes that may have taken place in the production of pottery during the working periods of the two production areas, and an attempt has been made to investigate whether any chronological seriation of types could be detected.

The pottery was examined and recorded in four context groups in accord with the basic stratigraphy of the two sites:

a) pit, posthole or linear features buried below waster dumps
b) the infills or structures of the two kilns, which were also buried below waster dumps
c) the seriated deposits of the dumps
d) plough soil

Very few differences between these context groups could be discerned, however, either in the forms or their frequency; because of the quantities involved, it was decided to present the pottery data as if it were from only two stratigraphical groups, and to compare one with the other. The two groups are those from the closed assemblages of all sunken features, including the kilns (Group A) and those from the waster dumps and subsoil layers that overlay them (Group B).

4.2 METHODS

The pottery of Groups A and B, as defined above, was studied separately and differently.

The larger of these at both sites was of Group B material from the dumps and subsoil layers, but the sherds from these are much smaller and more eroded than those from buried features. Most rim sherds could not be accurately measured and many sub-form variants, and even some of the forms, were not easily distinguished. For these reasons, and because of the quantities of sherds of Group B from both sites, only basic vessel form types were catalogued by rim count, and no other method of quantification was employed, except for a weighing of sherds by context. Many rims and other interesting sherds from the dumps and subsoils were selected for drawing for the archive, however, (995 from Titsey South and 806 from Titsey North), and several are figured in the illustrations that accompany this report. Rare forms were always noted, and all handle fragments were as closely examined and quantified as those from the sunken features.

The Group A pottery assemblages from sunken features were more comprehensively analysed and quantified. At Titsey South these represent 24% of all pottery recovered, by weight, and 44% of the collection from Titsey North. The relative proportions of the vessel forms and sub-forms as shown in tables 1 and 2 are based only upon the data provided by the 'stratified' assemblages, ie, in large part, the earlier material from the two sites. The impression that was

gained during the less-exhaustive study of the waster dump/subsoil assemblages, however, was that there are few differences of any significance between Groups A and B at either site.

Type series of forms and sub-forms were established after the preparation of a drawing archive of all 'stratified', and selected dump/subsoil rim sherds and other interesting fragments from both sites. This sample is of nearly 1600 drawn sherds; the 493 that are published as illustrations in the figures of this report were chosen as the best examples to demonstrate the full range of forms and sub-forms. Nos 1–277 (figs 12–20) are from Titsey South, and nos 278–469 (figs 21–27) from Titsey North. Some examples of the kiln furniture from the southern site (nos 470–485) and the northern site (nos 486–493) are shown on fig 30, and the typology of handle decoration at both sites is presented in figs 29A and B.

Analyses of the clay and inclusions of the pottery were undertaken only on the example of sherds illustrated in this report, and identified fabric types have, therefore, not been quantified. There was no justification for undertaking such a time-consuming analysis since the only significant variant was a finer fabric in which most jugs, but few other vessel forms, were made. Fabric analysis was at x20 magnification, and of freshly broken sherd breaks.

4.3 ABBREVIATIONS IN THE TEXT AND THE ANNOTATION OF THE ILLUSTRATIONS

CLN Clacket Lane North production site
CLS Clacket Lane South production site
eves estimated vessel equivalents, but based only on rim fragments (after Orton 1975)

In the illustrations that accompany this report, each sherd has a report number in bold type, but other information is provided, such as the pottery drawing archive number (which corresponds to the numerical sequence in the pottery drawing archive, and is that which is also marked on the sherds), the context number which is shown below the archive number, and the fabric code which is provided below that. Sherds figured only as cross-sections have their diameter in centimetres shown outside the leading edge of the rim. Those that are preceded by a *c* are approximate to within 6cm of error; those preceded by a '+' indicate that the diameter of the vessel was probably more than is given; and those with a '?' are uncertain. Fully drawn-out rim sherds sometimes have a broken rim-top line to the left of the central axial line. These imply that the diameter as shown is only approximate, or a best guess.

4.4 FABRIC

Sub-rounded quartz sand was the principal tempering medium employed at both sites, and is abundant in all sherds. Almost always it is accompanied by rare to sparse, angular or sub-angular fragments of ironstone, but these may have been accessory inclusions within the quartz sand source, rather than having been deliberately added. The sand grains vary in colour depending on whether they are within a reduced or oxidized sherd (ie they show clear, opaque or pale grey on a dark-fired ground, and pink, red-brown, or rose on brown to orange-fired ground). Since this is largely the result of the presence of iron minerals on their surfaces and within their crystalline structures, it is most likely that the source for both quartz sand and ironstone fragments is the Folkestone Beds which outcrop only 150m south from the Titsey South site, and where several other medieval pottery kilns have previously been discovered (Hope-Taylor 1949).

At the beginning of the study, it was decided to record and catalogue all aspects of the pottery before that of fabric differentiation. It was felt that only an overview of all sherds would indicate how best a sample could be chosen to provide significant information concerning the variations that exist in the collection. Not all sherds could, or even should, have been more closely examined and quantified, but the dilemma had been what to sample. It was finally decided that the 470 sherds that are illustrated in the report were as reasonable a sample as any other that could have been chosen, and all were examined at ×20 magnification in fresh breaks.

Four fabric 'types' were identified on the basis of a perceived grading of sizes of quartz sand grains, but two of these are rare, and it is doubtful whether either had ever been intended as a consciously-preferred temper mix. Nearly all the pottery, except most of the jugs, had been made in a coarse sandy fabric (grade 2), with grains of between 0.4 and 1.0mm diameter, and with some up to 1.5mm. A few sherds seemed to contain an even coarser mix, with grain sizes of between 0.4 and 2.0mm, but with most between 0.8 and 1.5mm. This very coarse fabric could not be consistently distinguished from grade 2, so it was decided to refer to it as grade 1/2. Although it had been suspected that larger vessels, such as storage jars, may have been exclusively coarse-tempered, this was found not to be so, and some relatively small vessels also have a grade 1/2 suite of quartz grains (eg nos 332–335).

Most of the jug sherds from both sites have a relatively fine temper (grade 4), with grains of between 0.2 and 0.4mm diameter, and a rare few up to 0.8mm. Few other form types have such a fine temper, but they include all the lid-seated jars from CLN (nos 409–414, see 4.6.11), a small storage jar from CLS (no 86), and a large storage jar or related form from the same site (no 13). Most jugs from CLN have grade 4 sand-tempering with only a few in the coarser grades of 2 and 3 (the latter being a loosely defined intermediate classification that may be less real than imagined), but those of grades 2 and 3 at CLS seemed about equal in numbers with those of grade 4. Grains of grade 3 are between 0.3 and 0.8mm diameter, with some up to 1.0mm. A few examples of several different vessel forms have been classified as having a grade 3 temper, but here, the author may have fallen victim to 'over-classification' of the sample. Be that as it may, there are several rim sherds that seem not to have the profusion of small grains that is typical of grade 4, but which appear to be less coarse than the majority of sherds from the sites that are of grade 2. For this reason the classification of sherds as having a grade 3 temper has been retained in this report.

4.5 COLOUR

The majority of coarseware sherds from both sites have patchy mid-to-dark grey or mid-to-dark orange/brown surfaces, but there are also many sherds that are orange or dark grey, both in surface and core. The pottery that never left these production sites, therefore, is so variously coloured as to make it uncertain whether there had ever been a single surface colour that the potters were trying to achieve. On account of their frequency, it could be argued that dark grey or dark brown had been the intended surface colour, produced by a firing in a somewhat reduced atmosphere. The very many orange sherds, of coarsewares as well as jugs, may represent failures of firing in which clamped-down firings had been breached, allowing oxygen to circulate. Alternatively, many of the orange sherds may have been chemically altered, since proportionately more were found in the waster dumps, where percolating rainwater could have precipitated iron migration from the Gault Clay that is also present within the heaps.

There is a strong possibility, however, that either some vessels were deliberately fired orange or that there may not have been any serious attempts at sealing the kilns during the final stages of firing or during the cooling process. Bearing in mind that the remains of the two kilns indicate that they may have been relatively flimsy structures, even in comparison with some that have been found nearby in the Moorhouse sandpit (Hope-Taylor 1949), it could well be that any pot that had survived the firing process would have been considered as marketable, irrespective of its surface colour of orange, orange-brown, brown/grey or dark grey.

The pottery from CLN and CLS challenges the notion that a classification of East Surrey/West Kent medieval sandy wares from consumer sites can be reliably based upon surface colour. Pottery of the BGQ brown/grey sandy ware tradition is the most common pottery type in 12th and 13th century contexts across North Surrey (Jones, forthcoming) and was also the most commonly made product of the Clacket Lane kilns. There are also, however, examples of the fully reduced dark grey wares of 13th and 14th century coarseware pottery that have been identified at several local domestic sites in East Surrey and West Kent and which is sometimes regarded as being typical of the 'Limpsfield Industry' (Saaler 1976, 34; Williams 1983, 68;

Dunning 1958, 37), and of orange wares of East Surrey Betchworth/Reigate type (Jones 1991–2, 125). The only possible conclusion to be drawn from this is that all of these should no longer be regarded as being separate wares unless there are other grounds, such as may be gained from form analyses, to differentiate between them. It could also be inferred from this that the production and distribution of medieval coarsewares in southern England may not have been as simple as the results of cumulative work through the 1970s and 1980s would appear to suggest. The Clacket Lane material clearly illustrates the difficulties that persist in typology and terminology in Surrey (see Discussion, 4.9).

4.6 FORM TYPE SERIES

The illustrated examples of the various forms and sub-forms have been separated into those from CLS (figs 12–20: nos 1–77) and from CLN (figs 21–27: nos 278–469), but the descriptions of these from both sites are provided below as a single type series. This seemed the best way to demonstrate the similarities and differences between the two collections.

4.6.1 Cooking pot jar and bowl types (CPJ/B)

This is, by far, the most common class of vessel represented in both of the Titsey collections, representing *c* 75% of Group A rim sherds from CLN, and only a slightly smaller proportion of similar material from CLS (tables 1 and 2). The samples are of 907 and 343 rim fragments respectively, but very many more examples were recovered from the Group B waster dumps of both sites. The CLN Group B sample of CPJ/B rim sherds is of 1536 fragments, and 3738 were recovered from similar assemblages at CLS. Of these, as many as 1200 from CLN and over 3000 from CLS could have been from cooking pot/jars rather than from a bowl-type sub-form (see below). Very many of the sherds from the dumps are small, however, and it was not possible to identify sub-forms consistently or to measure rim diameters accurately. Because of this, no further work of classification or quantification of the CPJ/B populations of the dumps was attempted. Very many CPJ/Bs are represented in the Group A samples from both sites, and it was thought possible that the proportions of the form and sub-form types that were more carefully distinguished and quantified in these populations are much the same as those of the Group B samples. This remains uncertain, however, and whatever subtle differences there may be, between the earlier and later assemblages of CPJ/Bs from the two sites, could not be discerned.

All 'stratified' CPJ rim sherds from both sites were classified as belonging to one of four vessel form types: large storage jars (ST); large jars, or possibly storage jars (LCP/ST); 'standard' cooking-pot/jars (CP); and smaller jars or related forms (SCP). This classification was not based upon an arbitrary division of the differently sized rim diameters, but was conceived as the result of a consideration of the numbers of fragments of each size that are represented, and of details, such as the presence or absence of applied strips. Tables 1 and 2 are two histograms that show the sized populations of measurable CPJ rim sherds of Group A at both sites. In both, a single major unimodal distribution is apparent, with very minor bumps towards the smaller, and larger, ends of size variability. Standard-sized CPs, with rim diameters of between 20 and 26cm (inclusive), represent up to *c* 66% of CPJs from CLS, and *c* 70% of those from CLN. The fewer examples with larger rim diameters than 26cm were separated into those with applied strips (STs) and those, the majority, without (LCP/STs). STs with vertically applied strips were only intermittently ribboned, so some rim to shoulder sherds from vessels of this type would not have carried them. There are also a few rim sherds of large diameter that do not extend to the base of the neck, making it uncertain whether the vessels to which they belonged had ever had such strips. Although one can surmise from this that rather more CPJ rim sherds with diameters of above 26cm had probably belonged to STs (most especially, perhaps, the more robust examples with diameters of over 30cm), one cannot conclude that all had been from such ribbon-strapped storage jars. Because of the numbers of unstrapped CPJ rim sherds of over 27cm diameter that are represented, it is possible that a minor sub-form of large CPJ was made at both sites, but, because of the uncertainties in distinguishing them from strapped STs, most examples have been classified as LCP/STs.

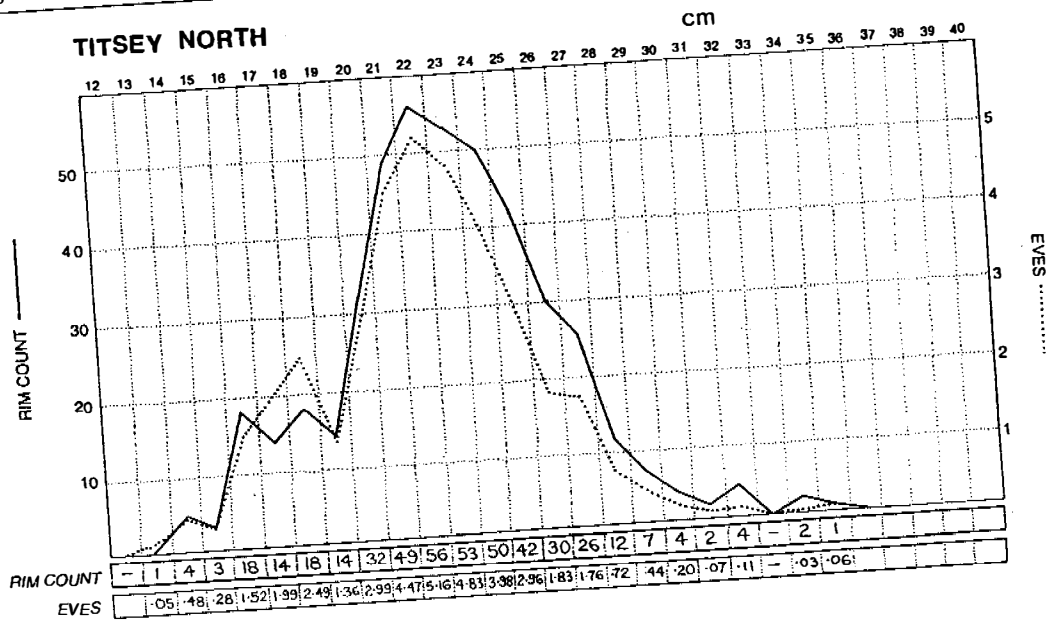
CPJs with rim diameters of less than 20cms include the smallest vessels of the standard CPs, but may also include examples of other vessel forms, such as skillets or pipkins. These are very rarely represented by handles or by feet, however, and no rim sherd was found that included a part of any such handle. Although it is very possible that Titsey skillets had CPJ type rims of small diameter, this could not be demonstrated. All rim sherds of less than 20cm diameter, therefore, have been classified as SCPs.

RIM FORMS

Some earlier published studies of 'Limpsfield Ware' cooking pots have identified rim-form types and attempted to quantify them (Prendergast 1974, 62; Russell 1989, 140–2). After due consideration the Titsey material was found to be so variable that it was thought unlikely that anything of chronological or functional significance would be forthcoming from any slavish

continued on page 42

TABLE 1 Clacket Lane, Titsey: the diameters of measurable SCP and CPJ cooking pot rim fragments in the Group A samples



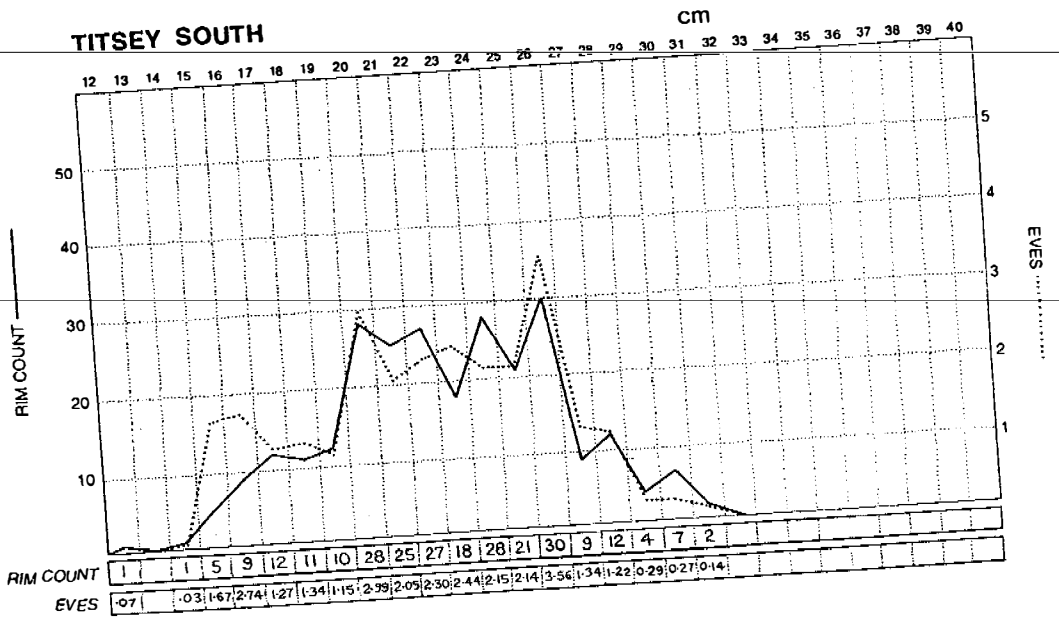
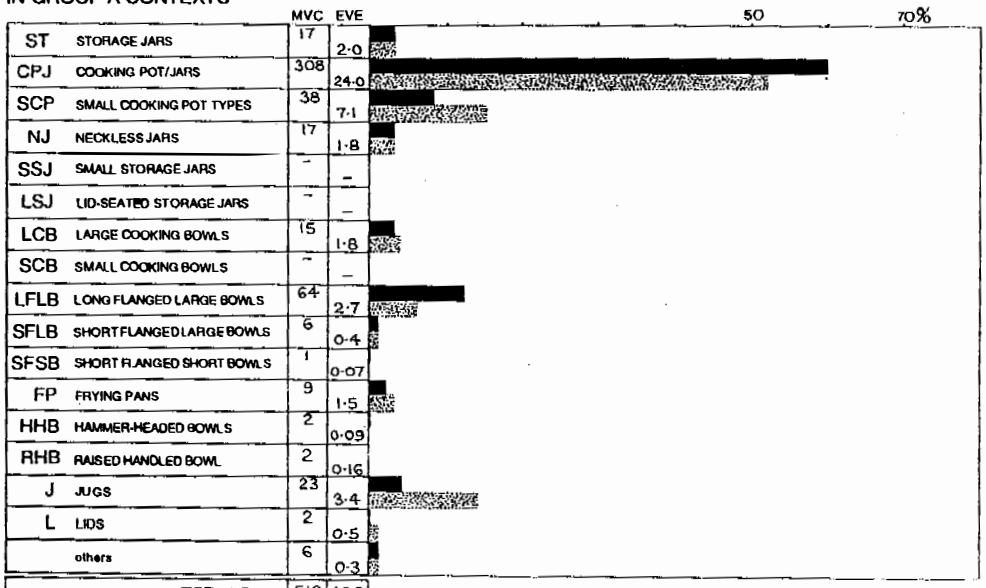


TABLE 2 Clacket Lane, Titsey: vessel types and their quantification in the Group A samples

VESSEL QUANTITIES IN GROUP A CONTEXTS

TITSEY SOUTH

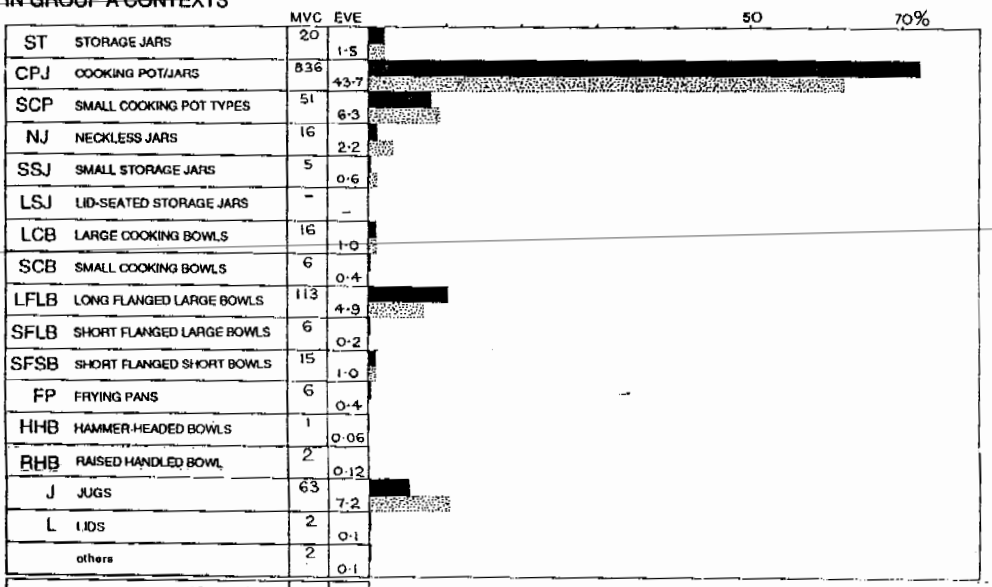
		MVC	EVE
ST	STORAGE JARS	17	2·0
CPJ	COOKING POT/JARS	308	24·0
SCP	SMALL COOKING POT TYPES	38	7·1
NJ	NECKLESS JARS	17	1·8
SSJ	SMALL STORAGE JARS	-	-
LSJ	LID-SEATED STORAGE JARS	-	-
LCB	LARGE COOKING BOWLS	15	1·8
SCB	SMALL COOKING BOWLS	-	-
LFLB	LONG FLANGED LARGE BOWLS	64	2·7
SFLB	SHORT FLANGED LARGE BOWLS	6	0·4
SFSB	SHORT FLANGED SHORT BOWLS	1	0·07
FP	FRYING PANS	9	1·5
HHB	HAMMER-HEADED BOWLS	2	0·09
RHB	RAISED HANDLED BOWL	2	0·16
J	JUGS	23	3·4
L	LIDS	2	0·5
	others	6	0·3
	TOTALS	510	46·2



VESSEL QUANTITIES IN GROUP A CONTEXTS

TITSEY NORTH

		MVC	EVE
ST	STORAGE JARS	20	1·5
CPJ	COOKING POT/JARS	836	43·7
SCP	SMALL COOKING POT TYPES	51	6·3
NJ	NECKLESS JARS	16	2·2
SSJ	SMALL STORAGE JARS	5	0·6
LSJ	LID-SEATED STORAGE JARS	-	-
LCB	LARGE COOKING BOWLS	16	1·0
SCB	SMALL COOKING BOWLS	6	0·4
LFLB	LONG FLANGED LARGE BOWLS	113	4·9
SFLB	SHORT FLANGED LARGE BOWLS	6	0·2
SFSB	SHORT FLANGED SHORT BOWLS	15	1·0
FP	FRYING PANS	6	0·4
HHB	HAMMER-HEADED BOWLS	1	0·06
RHB	RAISED HANDLED BOWL	2	0·12
J	JUGS	63	7·2
L	LIDS	2	0·1
	others	2	0·1
	TOTALS	1160	70·6



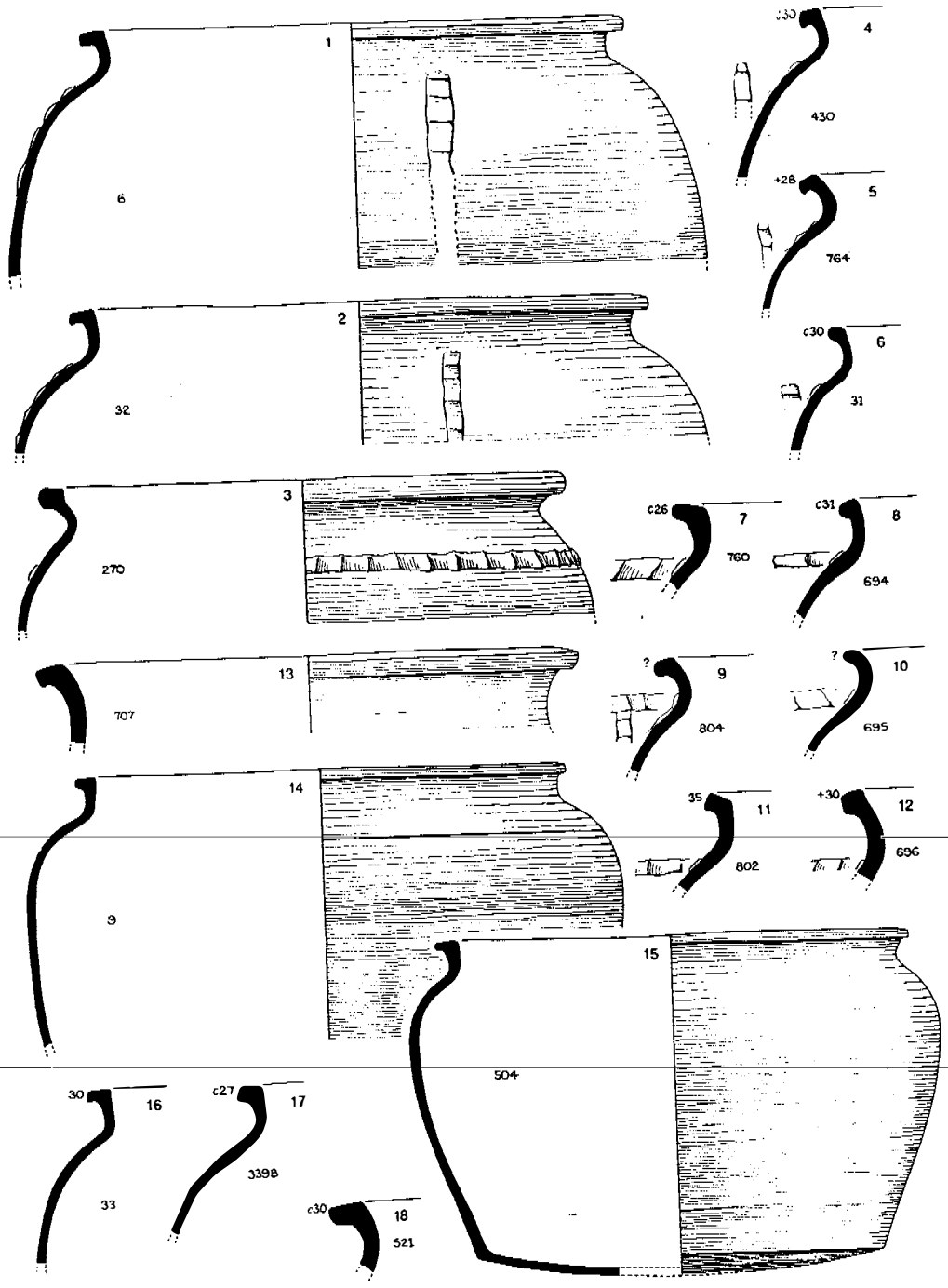


Fig 12 Clacket Lane, Titsey (South): storage jars nos 1–12; large cooking pot/jars nos 13–18. (1:4)

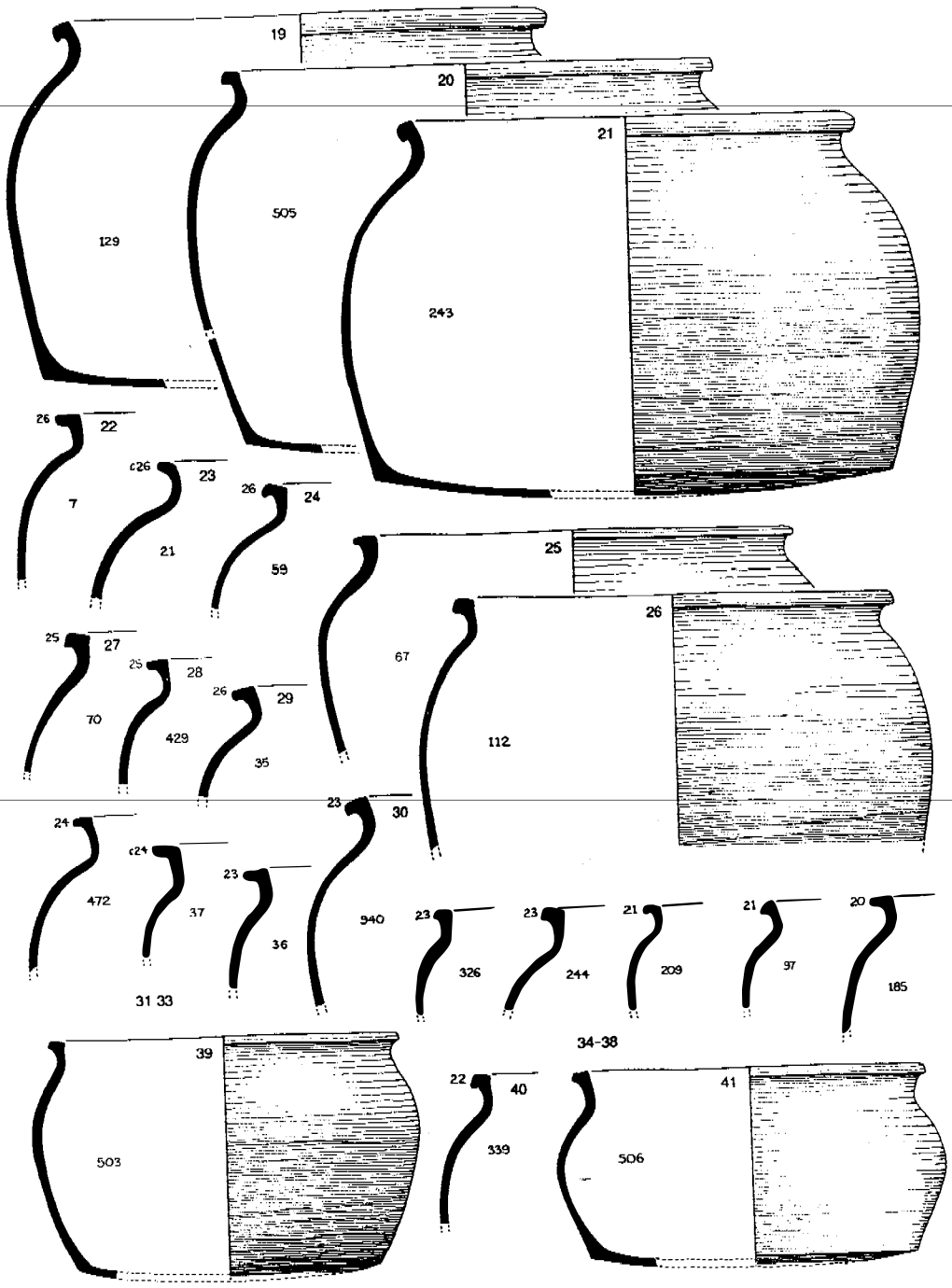


Fig 13 Clacket Lane, Titsey (South): large cooking pot/jars nos 19–21; standard cooking pot/jars nos 22–38 and 40; smaller cooking pot/jars nos 39 and 41. (1:4)

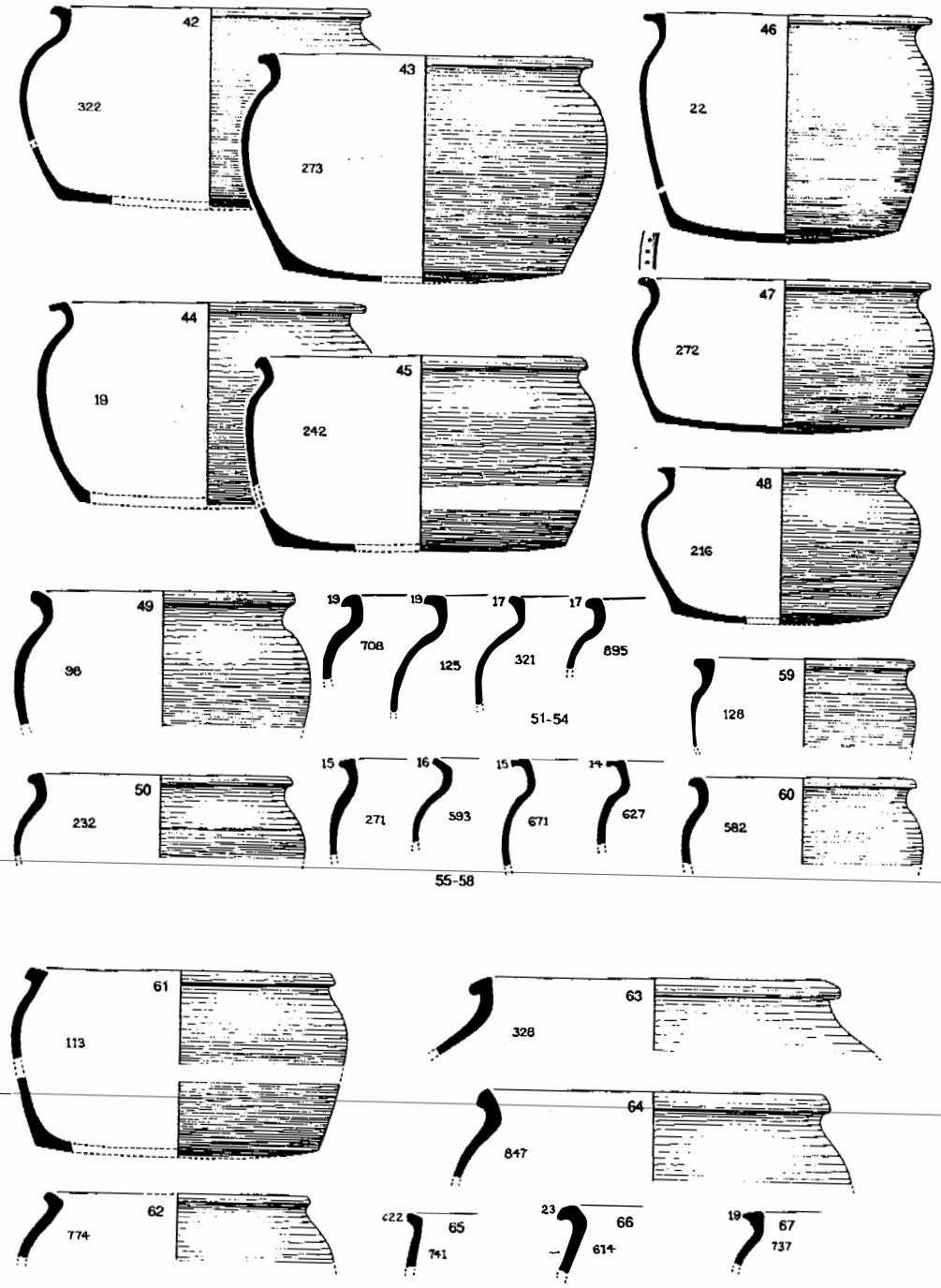


Fig 14 Clacket Lane, Titsey (South): smaller cooking pot/jars nos 42–60; neckless jars and related forms nos 61–67. (1:4)

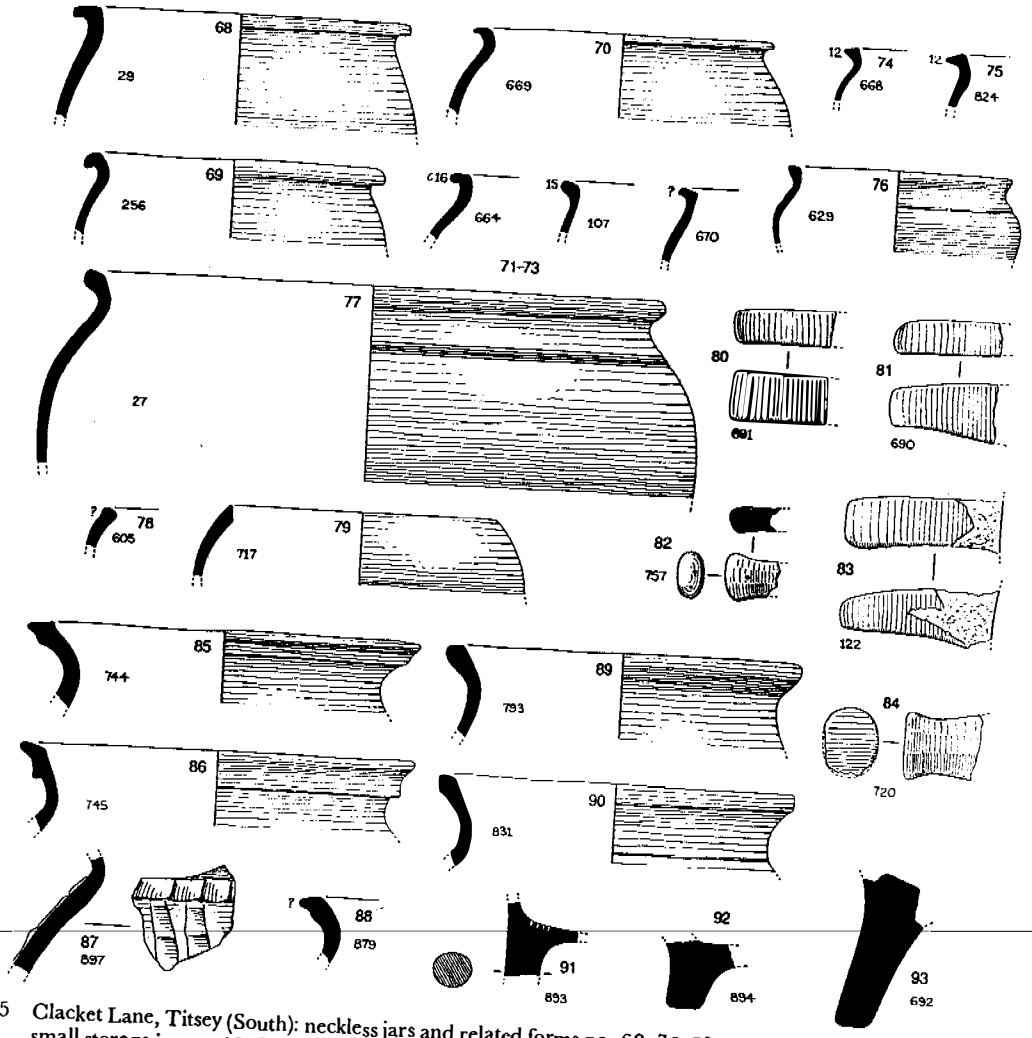


Fig 15 Clacket Lane, Titsey (South): neckless jars and related forms nos 68–76, 78 and 79; neckless storage jar no 77; small storage jars no 85–90; skillet handles nos 80–84; pipkin or cauldron feet nos 91–93. (1:4)

determination of rim types, or any quantification of such perceived types. Instead, the waster dumps of CLS were chosen as the proving ground for a loosely-based classification, and it was possible to divide all of the 3738 CPJ/B rim sherds into six types. Figure 28 (page 55) provides sketches of these and their relative proportions within the CLS Group B sample. The classification of these rim types remains valid for the 'stratified' CPJs of the site, and for those from the dumps and Group A deposits of CLN, but it is less useful as a tool for determining significant differences, because of the numbers of 'hybrids' that do not quite accord with even this loose typology.

The rim moulding of CPJs seem always to have been done on a turntable, and they may also have been made with the aid of forming tools to accentuate their angularity.

VESSEL PROPORTIONS

The few full profiles of 'standard' CPs and smaller SCPs that could be reconstructed include tall and squat vessels, but these variants could not be identified from amongst the rim sherds, and there were no obvious differences in the sizes of their rim diameters. It seems likely that these body shape differences may be as important as rim diameters in establishing the different CPJ sub-forms that are present.

FORMING

Handmade CPJs were found at both sites, but clear signs of such forming were only readily identifiable on the lower internal body wall surfaces of a few 'standard' CPs and larger types of CPJs. Many more CPJs could

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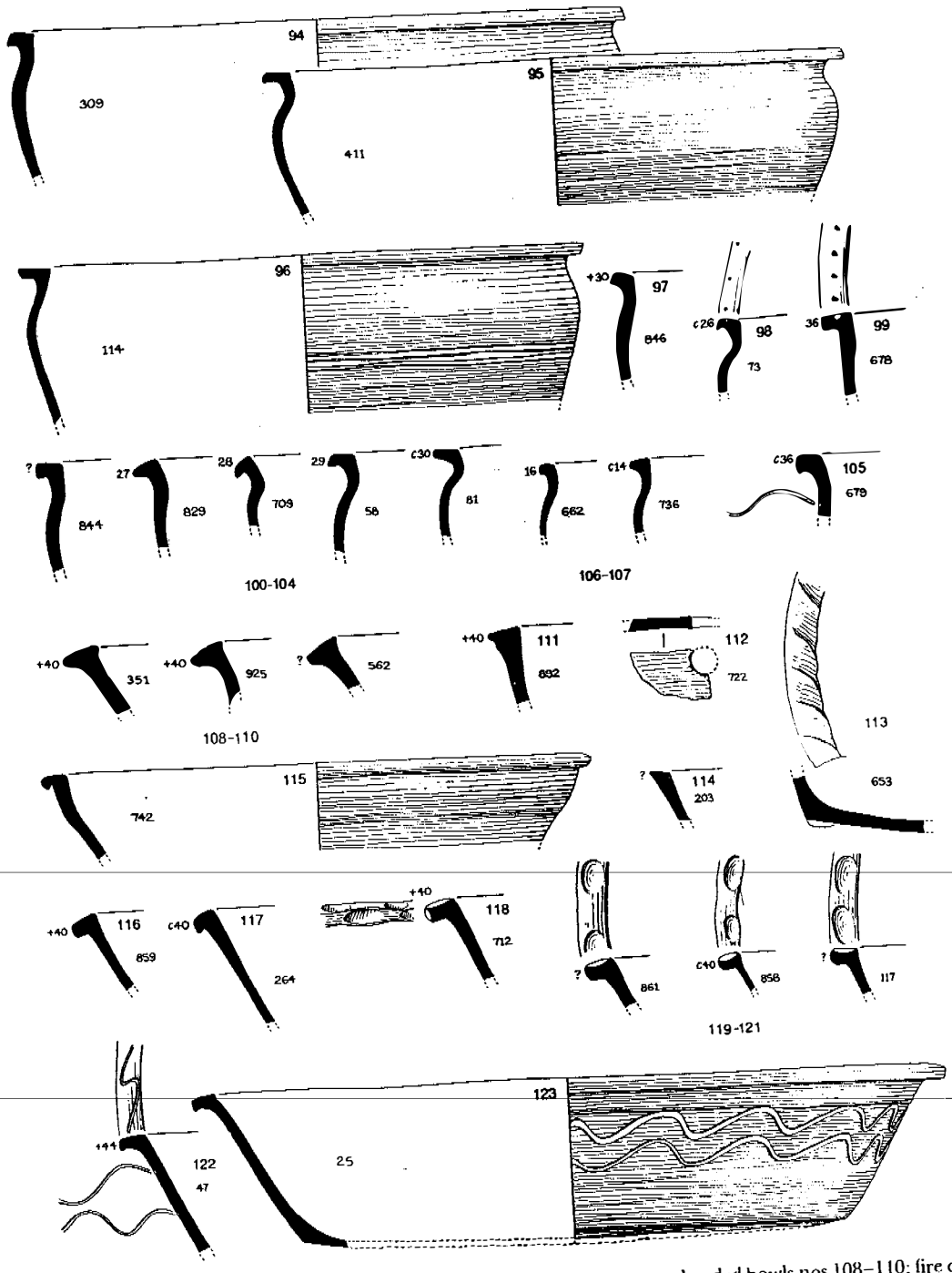

Fig 16 Clacket Lane, Titsey (South): cooking pot/bowls nos 94–107; hammer-headed bowls nos 108–110; fire covers nos 111–113; odd bowl no 114; short-flanged large bowls nos 115–123. (1:4)

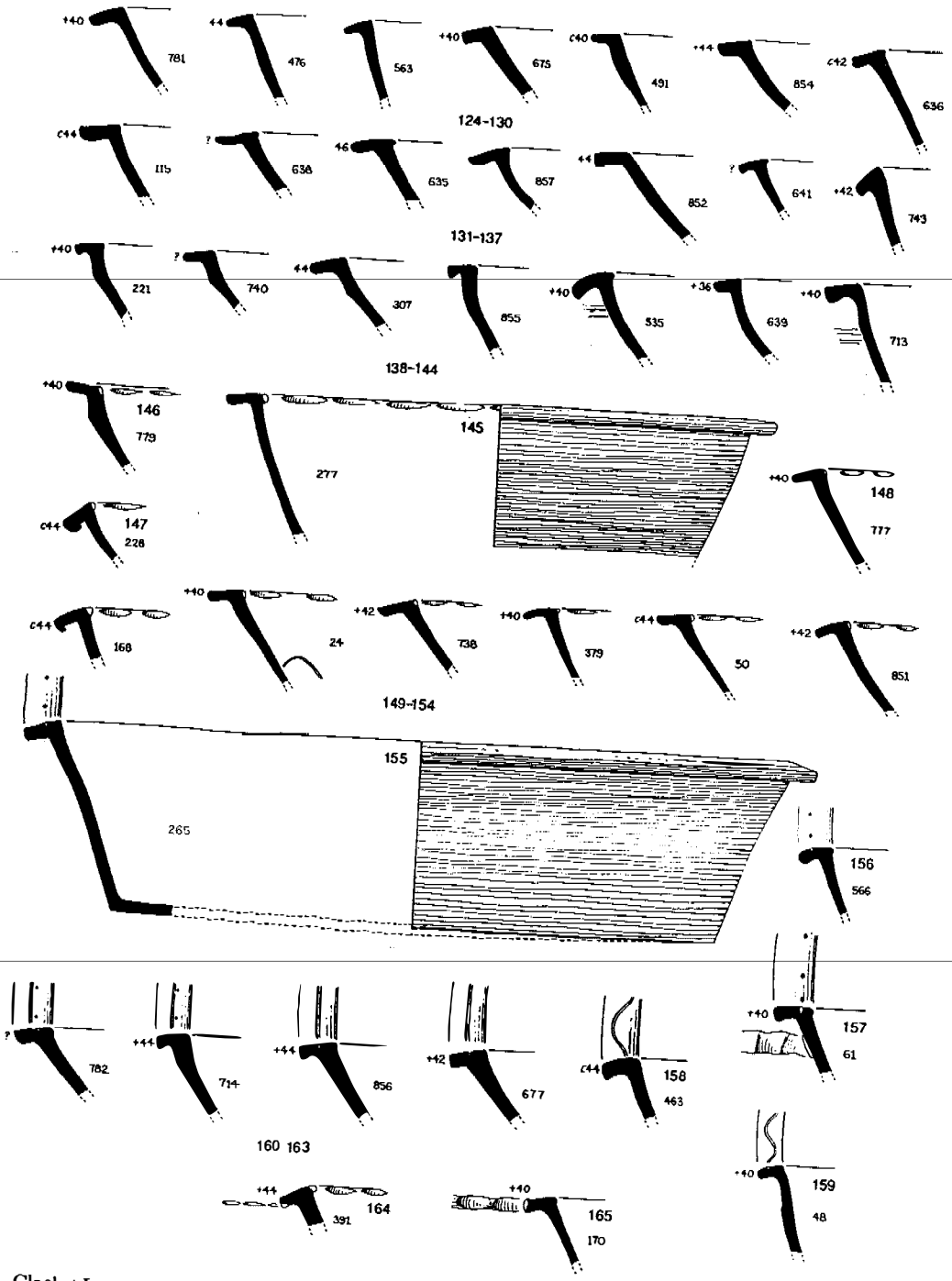

Fig 17 Clacket Lane, Titsey (South): long-flanged large bowls. (1:4)

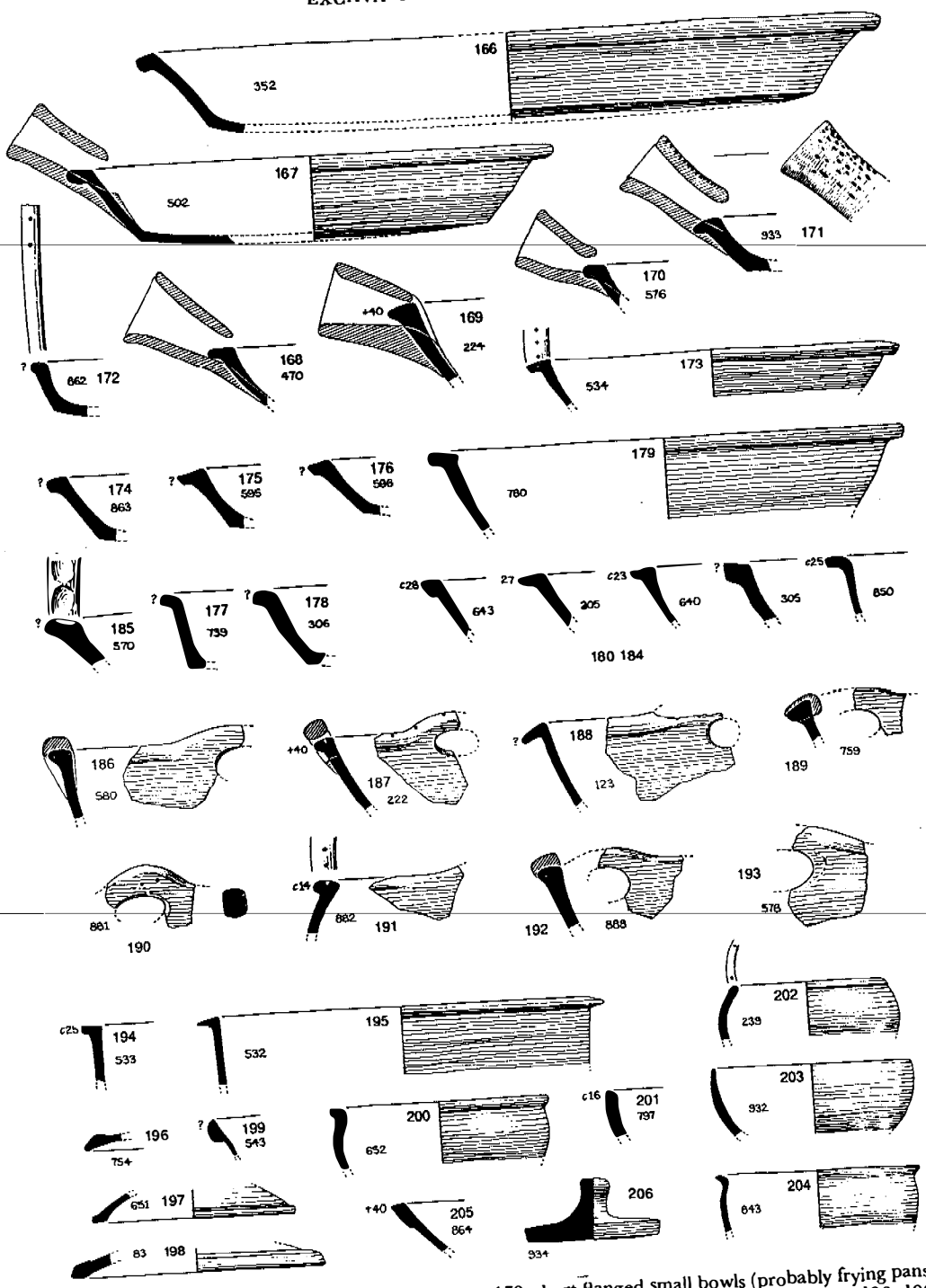

Fig 18 Clacket Lane, Titsey (South): frying pans nos 166–178; short-flanged small bowls (probably frying pans) nos 179–185; raised-handled bowls nos 186–193; vertically-walled bowls nos 194 and 195; lids nos 196–198 and 206; small cups or bowls nos 200, 201, 203 and 204; bead-rimmed jar or bowl no 202; odd bowls nos 199 and 205. (1:4)

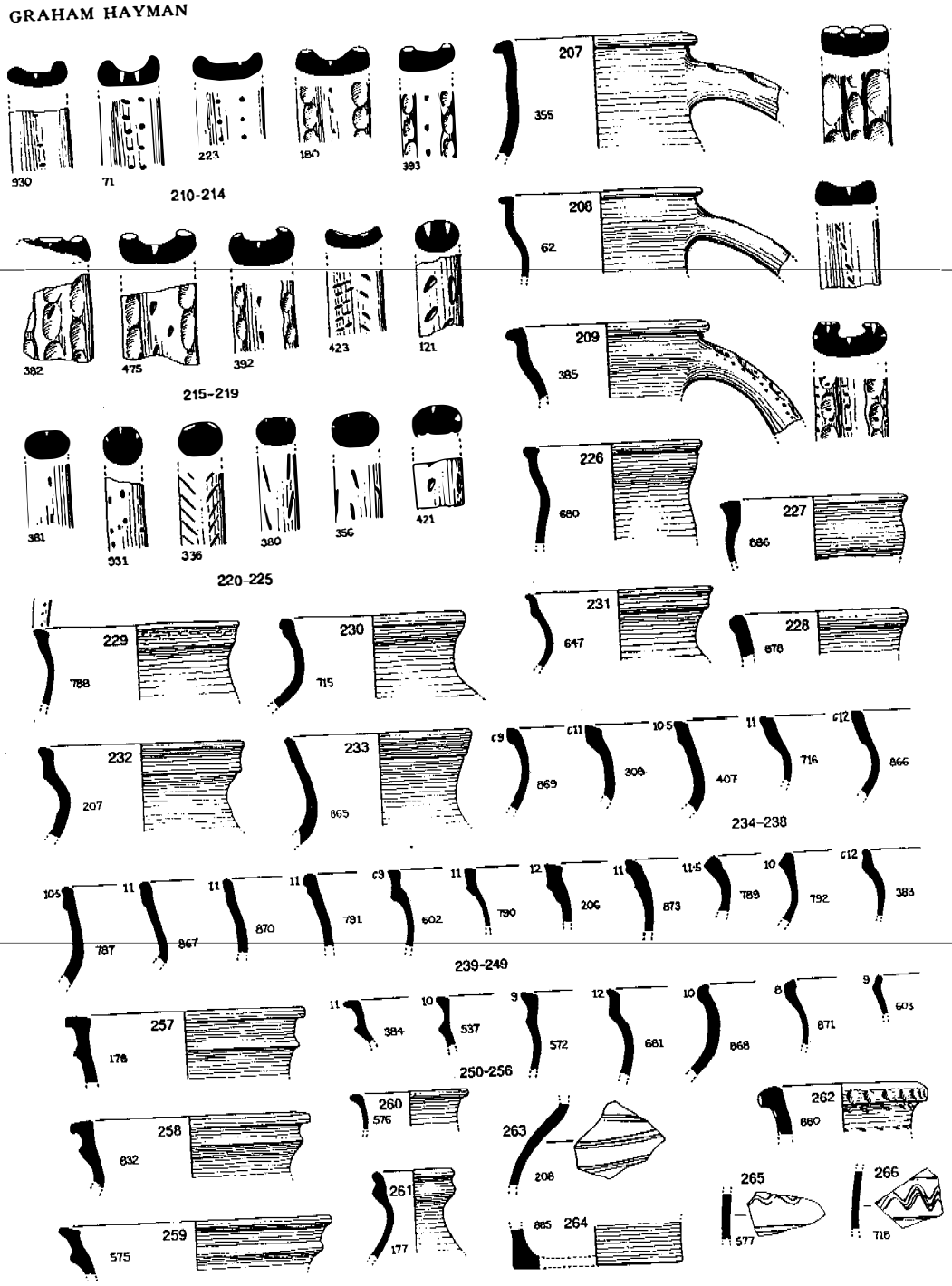

Fig 19 Clacket Lane, Titsey (South): jugs and a bottle form no 261. (1:4)

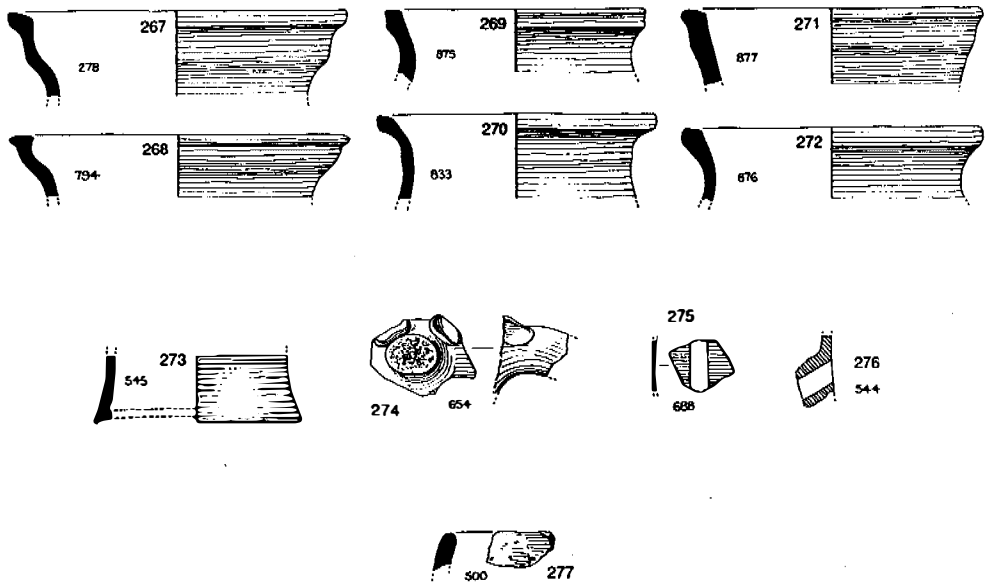

Fig 20 Clacket Lane, Titsey (South): larger jugs nos 267–272; medieval pottery from other sources nos 273–276; prehistoric rimsherd no 277. (1:4)

be discerned as having been wholly wheel-thrown, with body walls of even thickness, regularly angular rims that must have been tooled on a turntable and, sometimes, close-set horizontal throwing lines. Indeed, at both sites, all except for the obviously hand-formed larger CPJs could have been thrown, although there must remain some doubt as to whether they had been. This is partly because most CPJ sherds were from the waster dumps, where damage caused by chemical erosion of surfaces made it impossible to discern any such marks. The best-preserved surfaces of CPJ ware occurred on the Group A material, and it was apparent on many examples that there had usually been a final turning after the rims had been moulded, with a self-slipping of the exterior surfaces to finish them off. The point should not be laboured, but needs to be summarized. Some CPJs from both sites were handmade. Most others may have been wheel-thrown, or perhaps only some of them, since turntable finishing could have removed all evidence of hand-forming. The Titsey sites are the only manufactories of the Limpsfield pottery industry in which hand-forming has, as yet, been identified. All the other discovered sites may only have produced wheel-thrown wares, but the published descriptions of forming techniques do not make this clear.

4.6.2 Storage jars (ST)

These include all CPJ-type rim sherds with diameters over 26cm, which also bear applied strips on the neck and/or shoulder. A few other rim sherds of vessels that were as large, and which also had very thick rim terminations, are also included, even though they do not bear applied strips. They may have had such strips, but their intermittent application, and the vagaries of rim sherd breaks, mean that it is not possible to be certain that they had. Most of the other examples of large CPJs that are without strips or heavy rims are separately described below as LCP/STs.

Storage jars of CPJ type are relatively uncommon in the CLS Group A material (*c* 4.5%), but even fewer are represented in the similar material from CLN (*c* 2%). Similar small proportions seem also to be represented in the waster dump assemblages of both sites.

Twenty-two of the 45 ST rim sherds from CLS, and 14 of the 34 from CLN that have been drawn for the archive, bear fragments of applied strips (including nos 1–12, 278–284, 289 and 290). The archive sample includes almost all such rim sherds that were recovered from both sites. In all instances, the strips are relatively thin and shallow, and were fixed to the body by finger impressions that have often depressed the strips flush with the surface of the pot. These cannot have provided as robust a protective girdling as the more substantial finger-impressed ribbons that are typical of Saxo-Norman storage jars of the district (eg Jones 1986, fig 15, nos 264–270). Perhaps their vestigial presence on the Titsey examples, and on many other storage jars of this later period across southern England, served only to signify their intended function rather than to afford any real protection from breakage. The strips on the Titsey STs did not extend to their lower walls, and seem only to have been applied, sparingly, to the necks and upper parts of the vessels. Body sherds that include parts of such strips were relatively uncommon at both sites (433 from CLS, 254 from CLN). The schemes of application are, usually, either a girdle at the junction of the neck and shoulder, and/or intermittent vertical strips from the neck to just below mid-girth, where they peter out. Only a few sherds display other schemes, such as an additional horizontal ribbon along the shoulder, and diagonally-crossing strips on the shoulder (not

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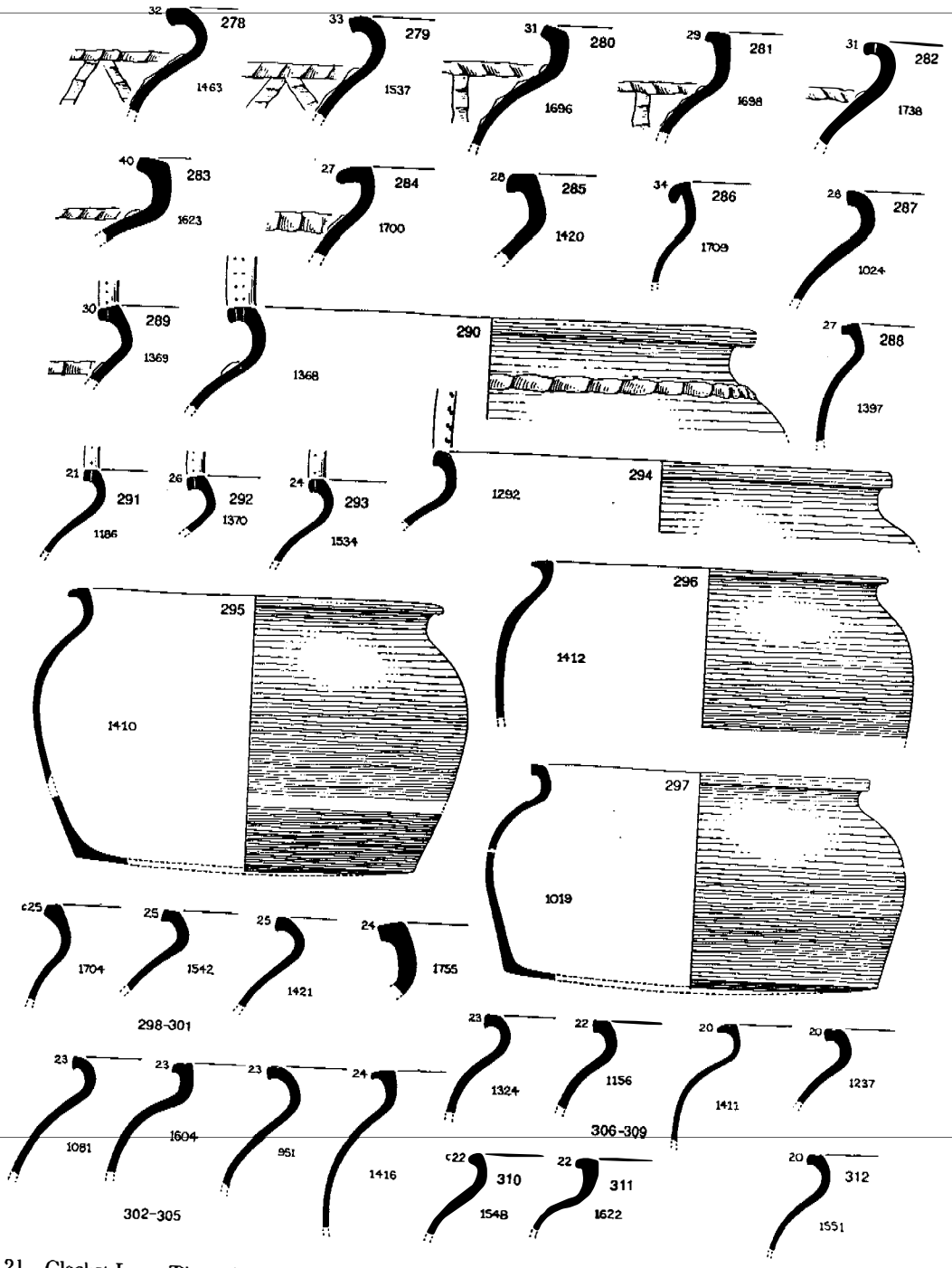

Fig 21 Clacket Lane, Titsey (North): storage jars nos 278–284, 289 and 290; large cooking pot/jars nos 285–288; standard cooking pot/jars nos 291–312. (1:4)

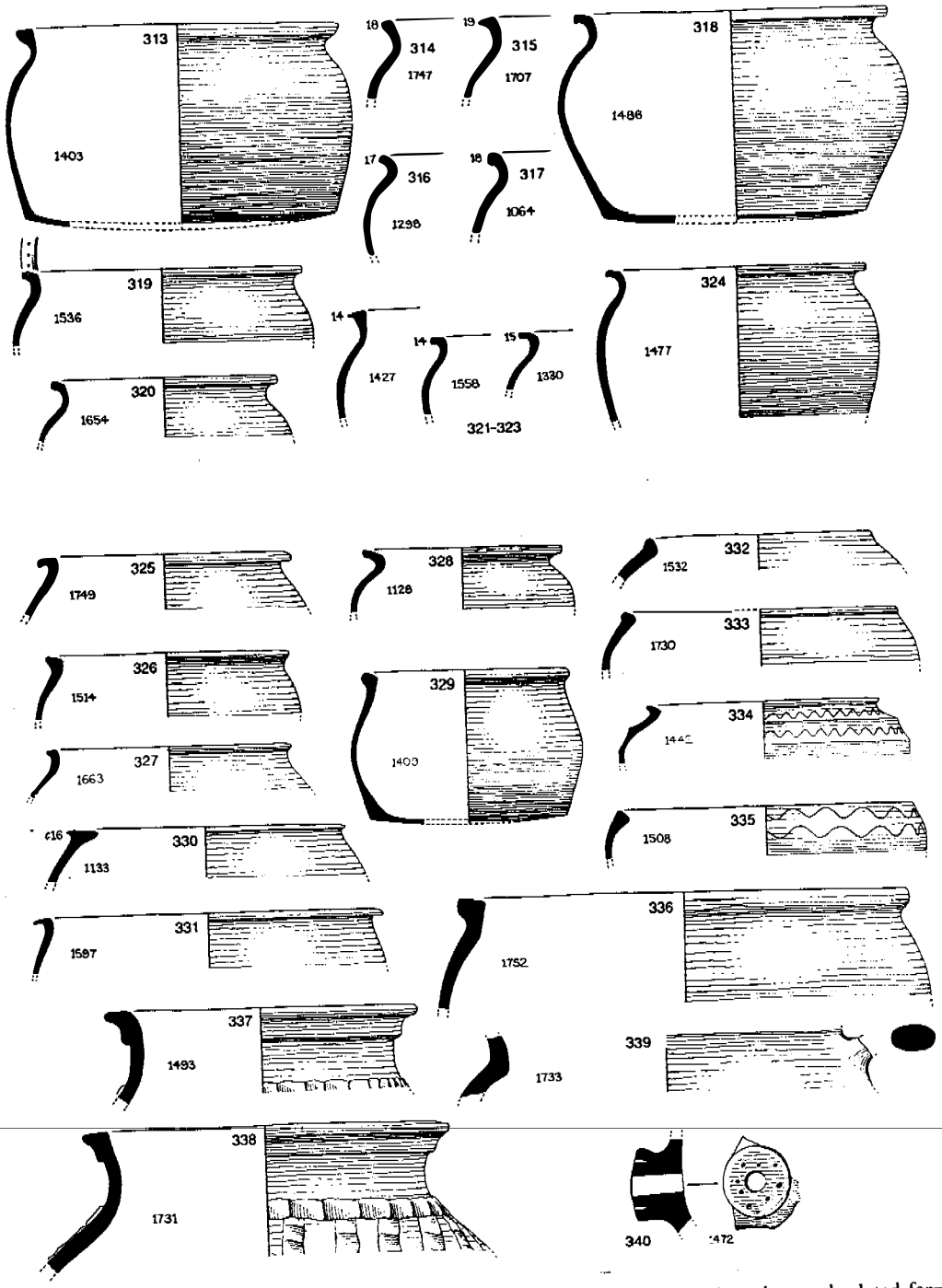

Fig 22 Clacket Lane, Titsey (North): smaller cooking pot/jars nos 313–324; neckless jars and related forms nos 325–336; small storage jars nos 337 and 338; skillet or pipkin no 339; bunghole no 340. (1:4)

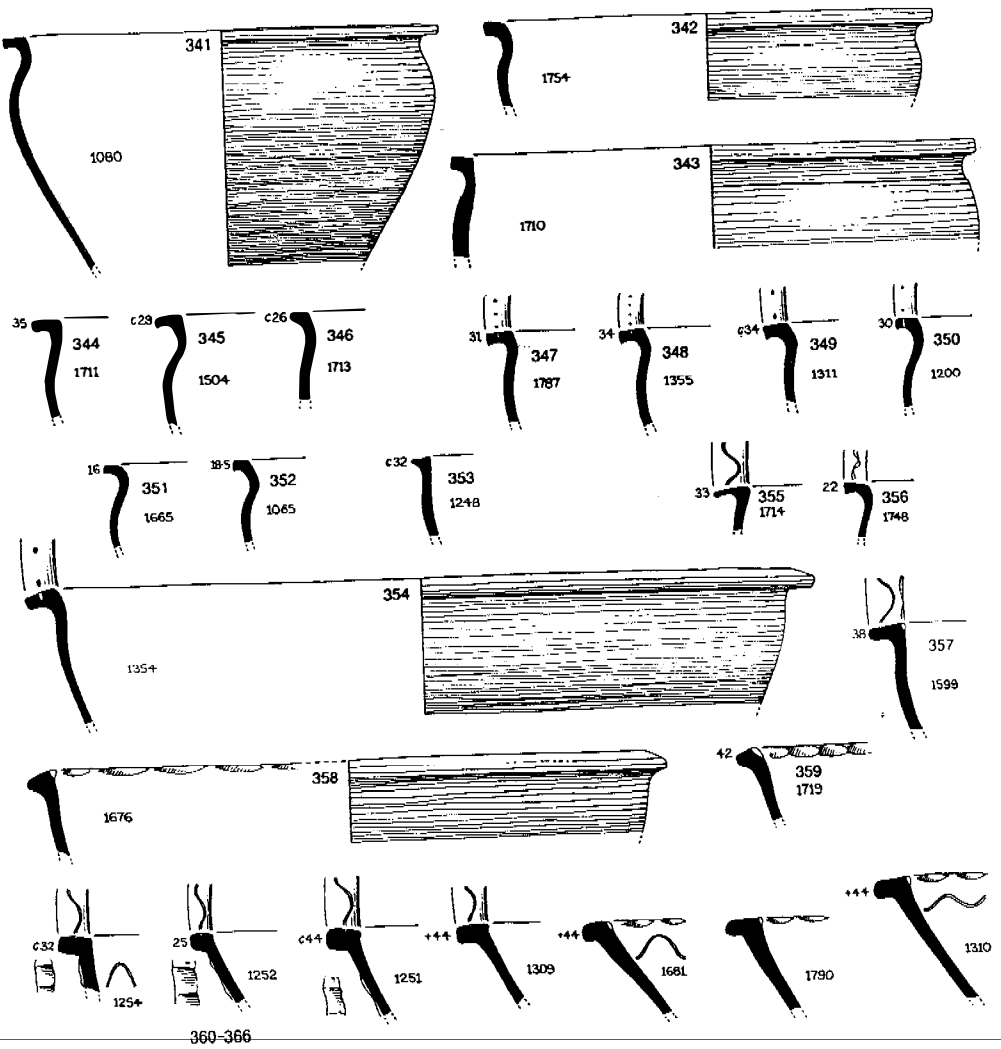

Fig 23 Clacket Lane, Titsey (North): cooking pot/bowls nos 341–353, 355 and 356; short-flanged large bowls nos 354, 357–359, 362–366; short-flanged smaller bowls nos 360 and 361. (1:4)

illustrated). The numbers of ST sherds with parts of applied strip schemes is too small to detect any fundamental differences between those from CLN and CLS; at both sites, all of the schemes noted above were employed.

Eight ST rim sherds from CLN differ from any of those from CLS, but only in the same manner as many other vessel types that had been made there: the tops of their rims had been 'pin-punctured'. Five of the eight have a single series of these through their square-headed rim terminations (including nos 282, 289), and the other three have a double row (eg no 290). Three of the five rim sherds with single pin-puncture rows, and two of the three with double rows, also carry applied strips at the neck and below.

Also of note is that, at both sites, despite the large size and bulky rims of STs, their body walls through from the neck to their lowest parts were no thicker than those of 'standard' CPs.

The largest measurable rim sherd of an ST from the South site was of 35cm diameter (no 11), and that from the North site was of *c* 40cm (no 283).

4.6.3 Large jars (LCP/ST)

This is a catch-all category for most CPJ rim sherds of large diameter that do not bear applied strips (eg nos 13–21 and 285–288). Some are, most probably, from ST storage jars, but many represent the largest examples of the 'standard' CP form. All have diameters of more than 26cm, and all but one have rim terminations that are no bulkier than most of those of the 'standard' type. The exception has a heavy short flange and is, curiously, of the finer fabric mix 4 (no 13 from CLS).

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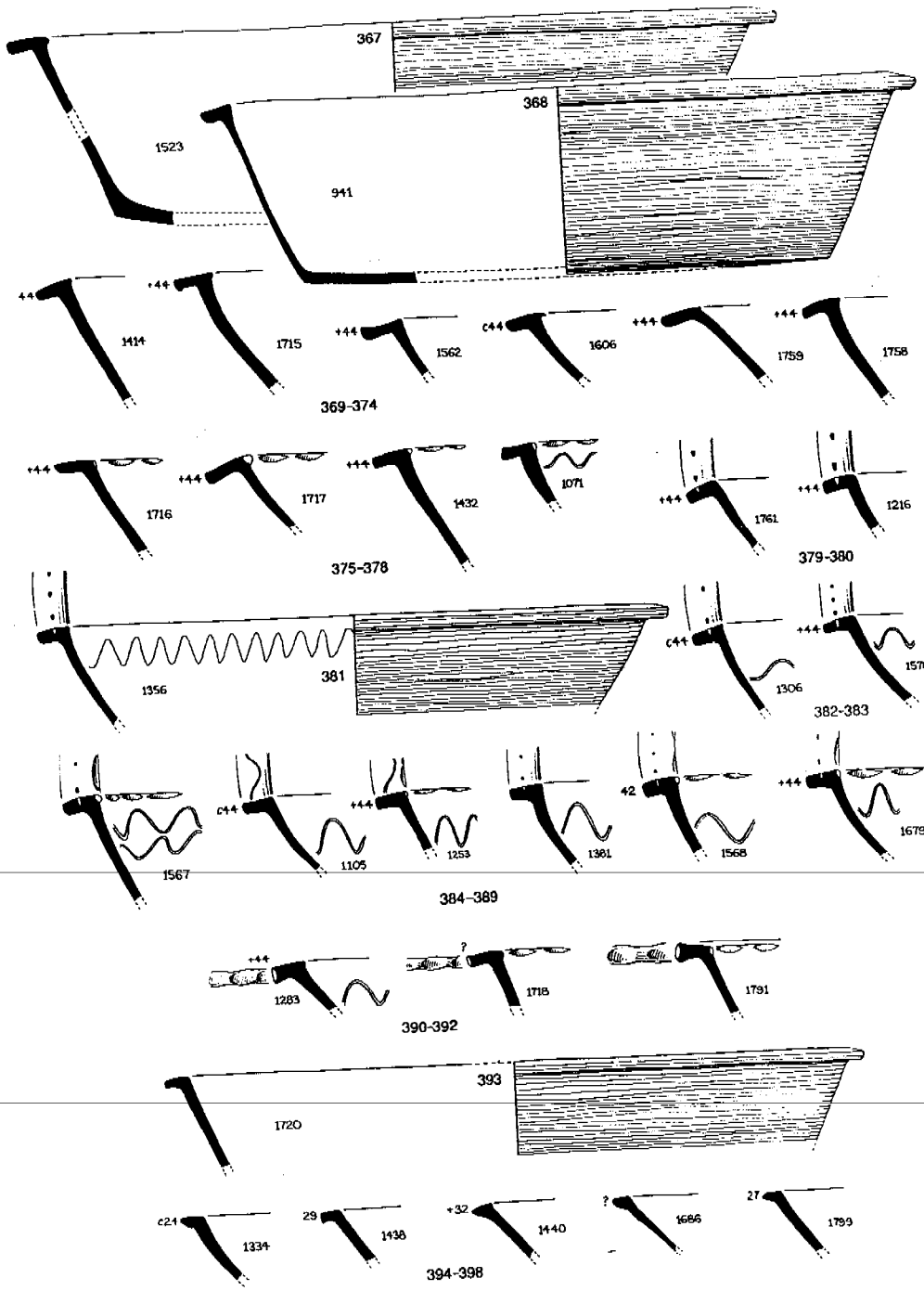

Fig 24 Clacket Lane, Titsey (North): long-flanged large bowls nos 367–393; short-flanged smaller bowls nos 394–398. (1:4)

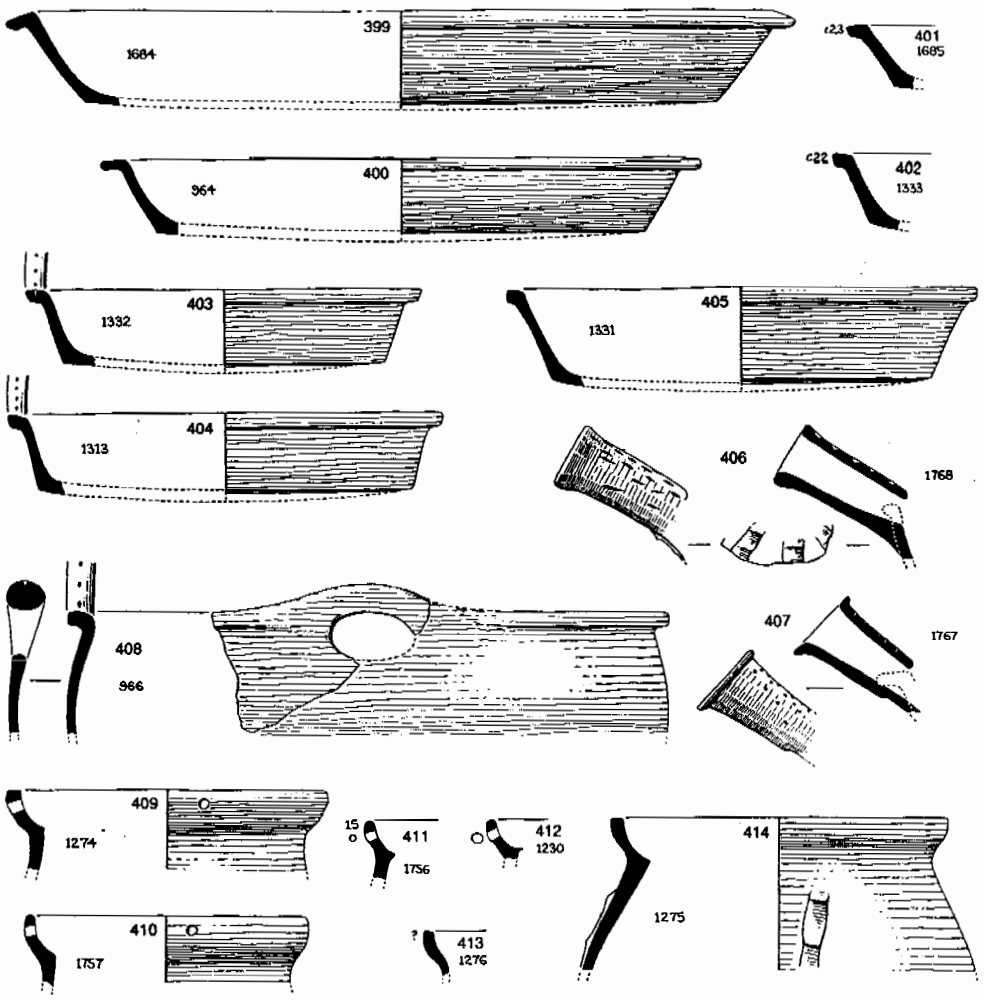

Fig 25 Clacket Lane, Titsey (North): frying pans nos 399–407; raised-handled bowl no 408; lid-seated small storage jars nos 409–414. (1:4)

4.6.4 'Standard' cooking pot/jars (CPJ)

Almost three-quarters of all CPJs have rim diameters of between 20 and 26cm (see figs 13 and 21). These 'standard'-sized jars (CPs) represent 68–70% of the Group A CPJs from CLN (312 examples; 26 eves) and 57–66% of those from CLS (177 examples; *c* 17 eves). The proportions in the waster dumps are probably very similar and have been estimated at *c* 61% at CLS. All have everted rims that curve into the shoulders of the pots, and thickened rim terminations that are, most often, square. It was evident from the full profiles of a few that some had been deeper than others (compare no 41 with no 46, or no 295 with no 297, for example), but such a division into sub-form types could obviously not be established for the greater bulk of the samples, which are of rim fragments.

Very few CPJs from CLS were 'decorated'. The stratified material includes one rim of 23cm from context 554 that has a horizontal groove along the shoulder (not illustrated; archive no 244), and another of *c* 22cm from context 589 that has an applied vertical strip on the shoulder (not illustrated; archive no 434); the latter may be from an ST if the estimated diameter is wrong). Of the nearly 4000 rim sherds of the CPJ/B class from the CLS dumps, the few that are 'decorated' have applied strips and are most likely to have been from STs. Only two have pin-punctured rim tops, and these may have been from CP bowls rather than from closed jar forms (see below). There is only one CPJ from Titsey South that is definitely pin-punctured along its rim top, but this is a small vessel and is described below with the SCPs.

By contrast, a more significant minority of CLN CPJ rim sherds were punctured through their rim tops (eg nos 291–294). These include up to 25% of CPJs from the Group A assemblages and *c* 12% or more of the

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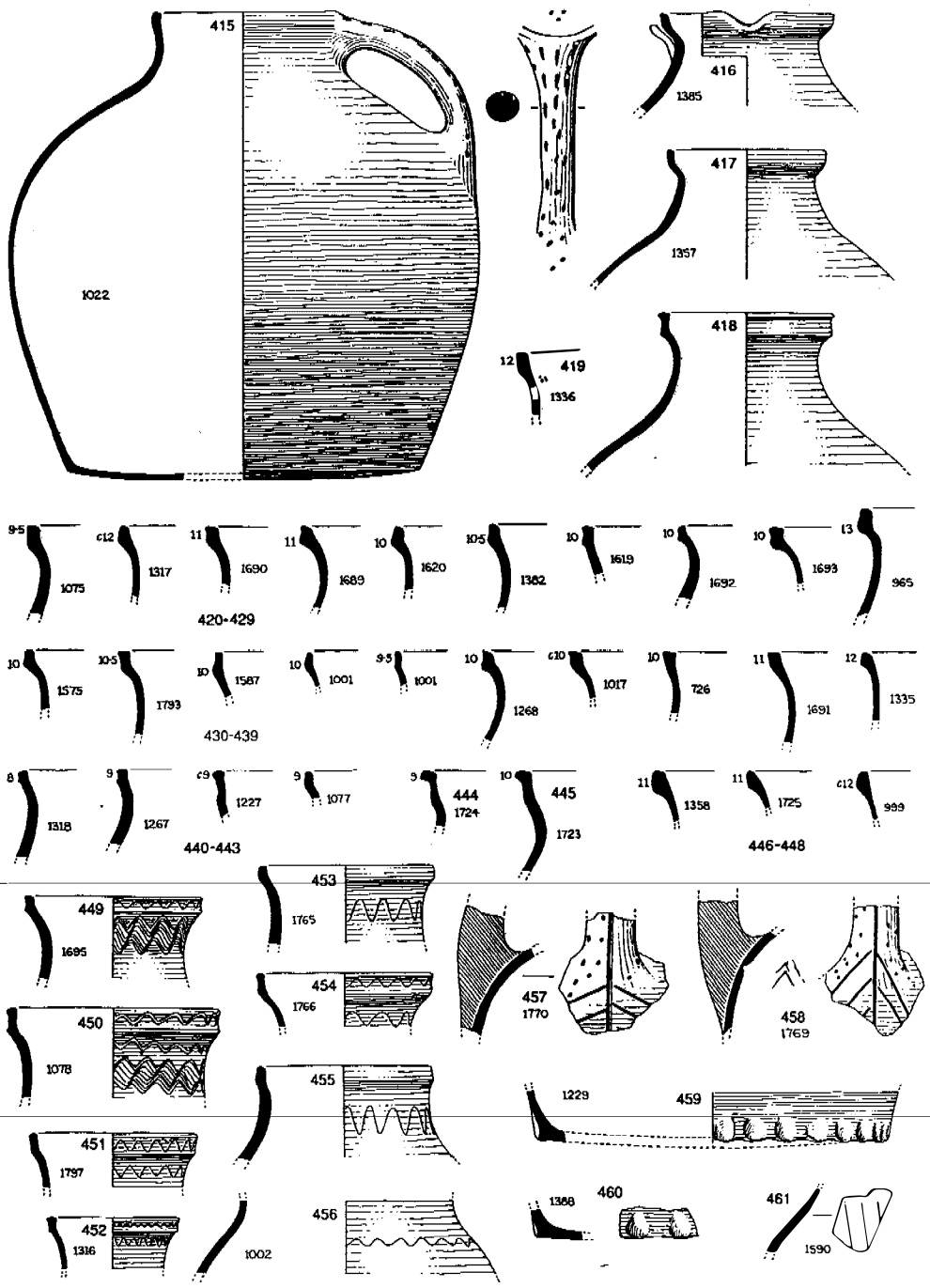

Fig 26 Clacket Lane, Titsey (North): jugs and decorated sub-forms. (1:4)

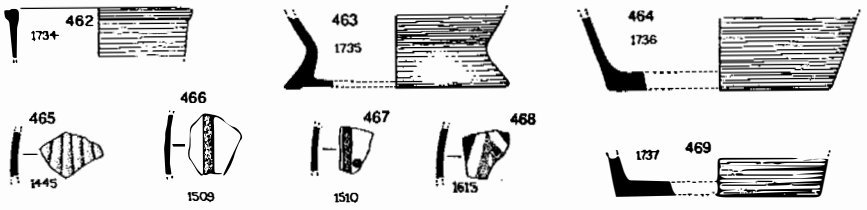

Fig 27 Clacket Lane, Titsey (North): medieval pottery from other sources. (1:4)

collection of over 1500 CPJ/B rim sherds from the waster dumps. All of those with pin-punctures had rim diameters of between 22 and 28cm, and so include some ST storage jars (see above). It is suspected that many more CPJ rims from CLN had been pin-punctured than have been identified. This is because of the small size of many of the piercings. They are called pin-punctures because that is what they appear to be in the many rim sherd breaks that expose their full lengths. Such punctures have straight bores of between 1 and 2mm thickness, and are evenly circular in cross section, with pointed ends. These vertical stabbings often extend through the full thickness of the rim terminations, and several CPJs with pin-puncturing were identified, not from any holes along the rim top, but by the presence of little spikes of fired clay on the underside of the rim extremity where the tip of the piercing tool had broken through. Such puncturing seems likely to have been achieved with metal pins, but should not be perceived as being a decorative device. The holes would have helped to prevent mishaps during the firing of this thickest part of the bodies of CPJs and other vessel forms.

4.6.5 Smaller cooking pot/jars or related forms (SCP)

CPJs with rim diameters of less than 20cm represent between 16 and 22% of all vessels of this form from Group A deposits at CLN (72 examples; 8.2 eves), and 18–27% of those from CLS (49 examples; 8.3 eves). Whereas some, or perhaps most, may represent only smaller examples of CPs, other forms may be included, such as skillets, since a few handles of this vessel type were also found (see below). Single examples of SCPs at both sites were found to have been pin-punctured along the rim (nos 47 and 319).

4.6.6 Cooking bowls (LCB and SCB)

A conventional form type series would not usually describe a bowl form after that of a jar, and before that of yet more jar types. One of the principles upon which such type series are elaborated, is, after all, an assumption that distinctions between jar and bowl classes had been intended by the potters. After an examination of the full range of vessel types that were made at Titsey, however, it was felt that such a simple determination of classes at Titsey would obfuscate the close similarity that exists between the principal jar and bowl types, and marginalize the many 'hybrid' vessels that are represented. One such 'hybrid' form is the Cooking Bowl (CB), which was made at both sites at Titsey, and which usefully illustrates the problems of classification, since the only difference that it has in comparison with CPs and other CPJ types is that the rim diameter is the same or smaller than that of the maximum girth of the shoulder. Although, therefore, examples of this type are bowls *sensu strictu*, they are more similar to CPJs than to any of the other bowl forms from Titsey, which is why they are described here (nos 94–107 and nos 341–356).

Identified rim sherds of CBs account for between 3 and 4% of the Group A material of CLS, and nearly 1% of that from CLN. Most had been large (LCBs), with rim diameters of between 26 and 36cm and with at least one at 42cm, but a few at both sites had been smaller (SCBs). Some SCBs may simply represent the smaller end-of-range of the LCBs, but a few could be from a different vessel type or types, most especially those with the smallest diameters of between 16 and 19cm.

At CLS, LCBs account for all of the CBS that could be recognized amongst the Group A material (15 examples; 1.83 eves), and only seven SCBs were positively identified amongst the waster dump samples (eg nos 94–107). Three LCBs and one SCB were noted as having been stab-punctured along their rim tops (eg nos 98 and 99). A few other CPJ/B rim fragments from the waster dumps had been treated in a similar fashion, but none could be positively identified as being from a jar or bowl form. One LCB rim sherd also has an incised wavy line along the shoulder (no 105).

The CBs from CLN differ from those of CLS in the same way as do the CPs and many other forms. Pin and stab-punctured rim tops are much more prevalent, and represent the majority of CBs that were identified. Of 16 LCBs from the Group A sample, 10 rims are either pin or stab-punctured, but only one of the six Group A SCBs is stabbed and none were identified in the waster dump assemblages (nos 347–350).

It is important to note that probably more CBs are represented in the Titsey collections than have been positively identified. Very many rim sherds with little that survives below the neck were classified as CP/CBs for the archive, and their numbers have been included in the totals for CPJs that were prepared for the purposes of this report. Having closely examined all material, however, it is the author's opinion that the quantities and proportions of CBs at both sites may be very little more than of those that could be positively identified. Their proportions, relative to all other vessel types, are probably no more than *c* 4% of the CLS collection and *c* 1% of that of CLN.

Proportionately more of the CB rims are flanged rather than square-beaded, and this is another aspect of

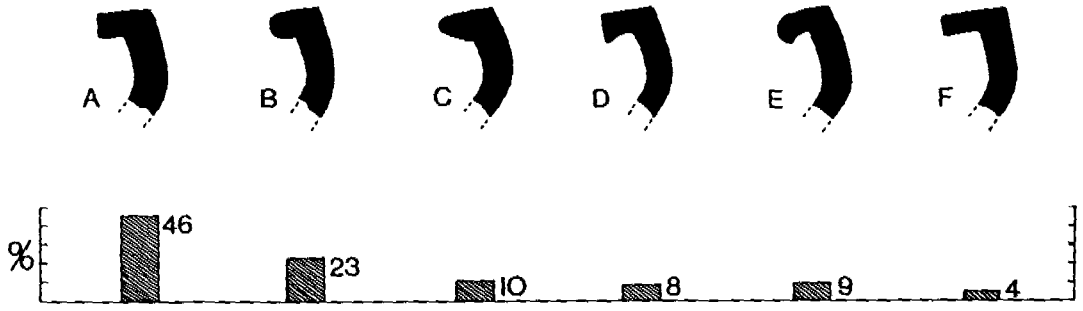

Fig 28 Clacket Lane, Titsey (South): cooking pot rim forms in the Group B sample of 3738 rim fragments. A sharply angled square; B externally rounded; C tapering or triangular; D sharply angled square with undercut; E rounded with undercutting; F sharply angled flange.

difference from the CPJs, of which the majority are squared. Approximately 50% of Group A LCBs from CLS and over 75% of those from CLN are flanged. By way of comparison, of the nearly 4000 CPJ/B rim sherds from the waster heaps of CLS, only *c* 4% are flanged. This preference for a flanged rim provides grounds for believing that CBs had been intended as bowls, and that they were not merely CPJ variants with slack shoulders. The punctures that are so prevalent on the rim tops of those from CLN confirm the link, since the two features are also characteristic of the second most common form that is represented at both sites: the long-flanged large bowls (LFLBs; see below). There are two other stylistic details that serve to link CBs with the bowl series proper: a few examples from both sites have slightly carinated shoulders, as do some LFLBs; and there are two CB rim sherds from Titsey North with incised wavy lines along the tops of the flanges (nos 355, 356), like a few of the LFLBs from that site.

4.6.7 Neckless jars and related forms (NJ)

These are vessels with rim diameters that are less than that of the shoulder or maximum girth, and which have square, triangular, round-beaded, or slightly flanged rim terminations that spring direct from the body without a neck. The basic form is represented by *c* 3% of all rim sherds from both sites, but there is some sub-form variety. Some examples may only represent variants of the CPJs, perhaps especially the few examples with large rim sizes of between 17 and 22cm (there are also some CPJs with barely a neck but which were classified as such); see nos 61, 63, 65–68. The majority of NJs from both sites were from small jars, however, and it seems much more likely that they represent different forms, perhaps several, from those of the CPJ/B family. Whereas some may be from simple neckless jars, others could be from handled vessels, such as skillets (see below).

At CLS, 23 NJs were positively identified (including nos 61–76) of which eleven were from Group A deposits. Fourteen of the 23 have triangular rim terminations; four have beaded rims, including one that is pin-punctured; four are square-headed; and one is slightly flanged.

In contrast, of 16 NJs identified at CLS (including nos 325–329, 331, 332, 335) of which eleven were from Group A deposits, only two have triangular rims, three are beaded, two are square-headed, and eight are slightly flanged. One example is unique in having no external protuberance of the rim termination, as well as lightly tooled wavy lines incised around the shoulder (no 335). The only other small jar that bears similar decoration is also neckless, but is so unique that it has been separately catalogued as a skeuomorphic form (no 334; see 4.6.8).

4.6.8 ?Skeuomorphic neckless jar (SNJ)

There is a unique rim sherd of a vessel of this form from CLN context 240 (no 334). It has a triangular-beaded rim, and is ribbed on the shoulder by means of at least two carinations that are separated by concavities of the body wall. Lightly tooled wavy lines girdle the two upper panels. The vessel may be a copy of a metal vessel form.

4.6.9 Neckless storage jar (NSJ)

A single rim sherd from CLS was thought to qualify for definition as a distinctive sub-form of storage jar, because of its (almost) neckless rim profile (no 77). It may only have been an end-of-range variant of the STs, but it is further distinguished by a panel of rilling on the shoulder that is almost never seen on any vessels of the CPJ/B family of forms.

4.6.10 Small storage jars (SSJ)

These are globular jars with everted necks and collared rims of between *c* 18 and 25cm diameter, of which at least some were generously adorned with horizontal and vertically applied strips on the shoulder. Their smaller size and rim form make them very distinctive from the larger STs, and the elaborate ribboning of strips seems more purposefully intended as protective strapwork than the vestigial strips of the larger storage jars.

Examples of the form are rare, but because of their distinctive collared rims, most of those that are present in the collections were readily identifiable.

Three rim sherds were positively identified at CLS (including nos 85 and 86), but the only sherd that may be of this form, and which bears applied strips, was one from the relatively narrow neck of a vessel with profuse, and pronounced, strapwork (no 87). All examples were from the waster dumps.

At CLN, three rim sherds were identified amongst the Group A pottery, and another two were from the waster heaps (including nos 337 and 338). In addition, a sherd from the relatively narrow neck of one of these storage jars has exceptionally pronounced applied vertical strips, that are moulded into the body wall as raised ribs (not illustrated).

The profusion and robust nature of the applied strips on SSJs lend support to the possibility that these vessels may have been intended as containers for transportation. The strapwork would have prevented breakage during travel, and the collared rim form is ideally suited to the complete closure of the mouth by membrane or lid.

4.6.11 Lid-seated storage jars (LSJ)

This type of jar does not appear to have been made at CLS, and only eight rim sherds were positively identified at CLN (nos 409–414). The form has a long everted neck which is cupped internally, ie it has a lid-seating. Four of the rim sherds bear circular holes that were carefully pierced through at the leather-hard stage, and because the total eves of all of the eight examples only amounts to 0.57%, it seems likely that each vessel had a series of such holes set at regular intervals around the rim. Their purpose may have been to assist in the securing of a lid or other sort of cover. Only one of the rim sherds includes a reasonable area of the body of the vessel, and this bears a vertically-applied finger-impressed strip (no 414). It is possible that this vessel form always had such protective strapwork.

CLN was not the only medieval kiln site in Surrey to have made this unusual form. At least one example was found amongst the pottery production debris at Ashtead, although it may not have had a pierced rim and it appears, from the illustration, to have been more robust than the examples from Titsey (Frere 1941, fig 5, no 16).

4.6.12 Bowls and other vessels of open form

It has not been possible to present any precise figures as to how many bowls, dishes, pans, or other vessels of open forms are represented in the collections of the two Titsey sites, or to give details of their relative proportions. Because so few full profiles could be reconstructed, it was impossible to be certain about the original depth of the majority of such vessels that are only represented by rim sherds, and in any case, there is as yet no consensus as to how such forms should be separated from one another; at what height should a dish be called a bowl, for example, and by what criteria could it be called a pan? At Titsey, it was not even possible to distinguish these vessel types from differences in their rim forms, since most of the more common forms shared the same range of styles of termination.

A few full profiles of open forms do, however, provide evidence that at least four form variants are represented amongst the Titsey material: large and deep vessels with flanged rims; large and deep vessels with shorter square-headed rims; large, but shallower vessels with square-headed rims; and smaller, shallow vessels with square-headed rims. These variants do not in themselves represent unique form types, however, since other aspects, such as their shape, were used to elaborate a more formal type series which can be summarized thus:-

Cooking Bowls (CB): usually large (LCB), but sometimes smaller (SCB), and with either a flanged or square-headed rim. These have been described above with the CPJ family of related forms.

Long-Flanged Large Bowls (LFLB): almost always very large. The most common bowl type at both sites. The lack of any slight shoulder and their unusually large size distinguishes them from LCBs.

Short-Flanged Bowls (SFB): often of large size (SFLB) but sometimes smaller (SFSB). Some SFLBs may only be variants of LFCBs, and others may be from other forms such as firecovers. Some SFSBs may represent a type of small, deep bowl, but most were probably frying pans (see below).

Frying-Pans (FP): always shallow, and, nearly always, relatively small and with a square headed or short flanged rim. The form has a single, long, hollow handle, and a pinched pouring lip.

Raised-Handled Bowls (RHB): only recognized from handle fragments. The form probably had two opposing pierced lugs that were raised from the rim. Other rim sherds are most probably included with CBs and SFBs. Very few examples are represented.

Hammer-headed Bowls (HHB): very large vessels with both internal and external rim flanges. Few examples are represented, and some may have been fire covers.

These principal forms are described in greater detail below. There are also a few miscellaneous oddities, but these have been described below as Other Uncommon Vessel Forms (see 4.6.19). Bowls, pans, and other related vessels of open form represent between 15 and 19% of the Group A pottery from CLS, and between 11 and 13% of such material from CLN. There did not appear to be any significant differences between the relative proportions in Groups A and B.

COOKING BOWLS (LCB, SCB)

These have been described previously since they are more closely related to the CPJ/B class of vessels.

LONG-FLANGED LARGE BOWLS (LFLB)

This is the most common bowl form represented in the collections from both sites. It is also second only in quantity to the CPs, with rim sherds representing between 6 and 12% of the Group A material of CLS, and between 7 and 10% of that from CLN.

The form is a deep bowl of large diameter (most commonly over 40cm), with a straight or slightly curving body wall. The rim is terminated with a long external flange which is, almost always, slightly down-turned. Only two full profiles could be reconstructed (nos 155 and 368). Both were of vessels that were *c* 10cm deep from their rims to the base angles of their slightly convex base plates.

There are a few LFLBs that differ slightly from the standard form. Single examples from the Group A material groups of both sites have slightly more curved bodies (eg no 143); and some examples from CLN and CLS have a slight carination of the upper body (including nos 138–140, 142, 144, 146). Some from both sites that have a more pronounced rounding of the upper part of the body serve to link the basic LFLB form to LCBs which have similar 'shoulders'.

There is, also, little variation in the rim form. The most common flange type is generally of even thickness and squared-off at the tip and is, almost always, between 15 and 25mm wide. At CLS *c* 11% of Group A LFLB rim sherds are slightly hooked and undercut, and proportionately more of these may be represented in the overlying waster dumps (of 678 flanged rim sherds from the dumps *c* 27% were catalogued as being undercut, but this also includes some that could have been from LCBs or other bowl forms).

There are, however, almost no hooked and undercut LFLB flanges from CLN. The reason may be related to the purpose of such undercutting. The reduction of this very thick part of the vessel may have helped to prevent firing mishaps, but at CLN this had more often been achieved by pin-puncturing, which would also have allowed the dispersion of heat throughout the thickness of the rim. More than half of all LFLB rim sherds from CLN are punctured through the rim, whereas only three of the 64 Group A LFLB rims from CLS had been similarly treated.

In addition to pin-puncturing, other devices had sometimes been employed on LFLBs that could have served a decorative function, but which may also have served to signify the intended purpose or origin of the vessels. Two devices were used almost exclusively on LFLBs: one is a scalloping of the internal edge of the rim by means of a series of long and shallow finger or tooled impressions, and the other is a wavy line incised around the interior surface of the body wall. Both devices are typical of LFLBs from all the other pottery manufacturing sites of the Limpsfield industry. At CLS only eighteen of the 64 Group A LFLB rims have scalloped impressions, with few others identified in the dumps (nos 145–154); and only one example with an internal wavy line was identified (no 150). By contrast, at least 31 of the 113 Group A LFLB rim sherds of CLN carry an internal wavy line, and in one instance two lines (no 384). Since many of these are fragments with very little of the body wall still attached, it is likely that the proportion of bowls with this device had been much higher. Only eighteen of the 113 Group A LFLBs from CLN had scalloped internal rim edges, but although this is proportionately less than those of the southern site, there seems to be a larger quantity represented in the waster dumps of CLN than in those of CLS. Although, therefore, there is some ambiguity as to the relative proportions of LFLBs with scalloped rims from the two sites, there can be no doubt that internally incised wavy lines were almost never employed at CLS, but were commonly used on LFLBs at CLN.

Both devices were sometimes used together at CLN and also, occasionally, with the other less common decorative or utilitarian schemes that are found on a few LFLBs from both sites. Fifteen rims from the Group A deposits of CLN have wavy lines incised along their rim tops (including nos 357, 385 and 386); two examples from each site have finger-impressions along the external edge of the rim flanges (including nos 164 and 165, and 390; see also nos 391 and 392 from the southern waster dumps); a single example from CLS has an applied finger-impressed strip on the exterior of the body wall (no 157); and another from the same site has an incised wavy line on the outside of the body wall (not illustrated). Another distinctive rim-top motif was identified only amongst the Group B material of CLN: five examples have a linear groove with pin-punctures set along it (including nos 160–163).

SHORT-FLANGED BOWLS

Several different forms and sub-forms are included within this loose grouping, but because it was not usually possible to be certain whether any particular rim sherd had been from a vessel of shallow or deep draught, they could not be adequately classified. A simple division could be made at both sites, however, into larger examples with rim diameters of over 35cm and with most over 40cm (SFLBs), and smaller types with diameters of between 21 and 32cm (SFSBs). These categories are separately described below, but it should be noted that each of them includes more than one form or sub-form.

Short-Flanged Large Bowls

At CLS six rim sherds of this type were found in Group A deposits, and only another seven were identified amongst the Group B material. They represent less than 1% of all vessels, but there may be up to three sub-forms that are included. Some may simply be more stubby-rimmed variants of LFLBs and these include three possible examples from the Group A deposits and about the same number from the dumps (including nos 115–117).

A few others are more distinctive, and possibly two sub-forms are represented. The first of these is exemplified by a full profile and the rim sherds of two others, all from 'stratified' deposits. The sub-form has a stubby square-headed flange, and straight everted walls that are relatively deep in draught. The full profile bears two horizontally scored wavy lines that girdle the body (no 123), one of the rim sherds has the same decoration and an incised wavy line along the rim top (no 122), and the other has similar rim-top decoration (not illustrated; archive no 23). This sub-form may only have been made during the early firings of CLS, since no other sherds were positively identified amongst the waster dump material. There are no other body sherds with external wavy-lined decoration from either of the two sites, that cannot be demonstrated (from their size, body wall thickness, and fabric) to have belonged to jugs or a specialized jar form.

Another possible SFLB sub-form identified at CLS is finger-impressed along the rim top, and one of the few rim sherds of this type is also impressed along the outer rim edge (nos 118–121). Five rim sherd examples were recognized in the dumped material; none were recovered from Group A deposits. Their classification as a

sub-form of SFLBs is speculative, however, since for only two examples is it fairly certain that their diameters had been very large (*c* 40cm or more), and it cannot be known how deep any of them had been. Some, therefore, may have been from smaller bowls, in diameter or in draught.

SFLB-type rim sherds are even less commonly represented in the collection from CLN. Only seven were identified and all but one was from the Group A sample. All appear to have been from bowls with diameters as large as that of LFLBs (usually *c* 42–44cm and larger), and three examples also bear the characteristic motifs of that form: long scalloping of the internal rim edge, and incised wavy lines around the internal walls. Two of the three examples carry these in combination (nos 364 and 366). A less commonly-used device on the LFLBs from CLN was a wavy line incised along the rim top (11 examples), but it is also found on a few SFLBs of distinctive type from CLS (see above), as well as on some of the SFLBs from CLN (nos 357, 362, 363). No SFLB-type rim sherds with finger-impressed rim tops, like the few found at CLS, were identified at CLN, but there is one that has an incised wavy line along the rim top, and a vertically-applied finger-impressed strip that begins at the neck (no 362). A few of the smaller SFSB-types from the site have similar ribbons, and although this larger example may be unique, it could be related to the smaller types, and perhaps to the handled sub-form of pan-type (see SFSBs and FP frying pans below).

Short-Flanged Small Bowls (SFSB)

A few SFSB-type rim sherds from CLS, so closely resembled those found on handled frying pans that all of them have been described together. Some of those from CLN, however, resembled more closely the SLBs from the site, and it was thought prudent to describe them here, although some, or many of them, may also have been from handled pans.

Twenty-two SFSB-type rim sherds were identified at CLN, of which fifteen were from Group A deposits. Their rim diameters vary between *c* 20 and 32cm, and they have either a short square-headed rim termination, or a slightly tapered, triangular flange. Thirteen rim sherds were plain (including nos 394–398); and there are two Group A examples that have incised wavy lines along their rim tops (nos 360, 361). These last two sherds are very likely to have been from smaller examples of SFLBs, since that form also sometimes carried such decoration. One of them has, in addition, an incised wavy line around the interior of the body wall (no 360), a motif that links this sub-form to the principal bowl series of LFLBs. Both rim sherds, however, also carry vertically-applied finger-impressed strips that start from below the rim, a device that was not employed on any LFLBs from either site. The only other open form that is known to have sometimes carried such applied strips is the Frying Pan, and these two SFSBs may have been from larger versions of these (see below).

FRYING PANS (FP)

The form was of shallow draught and had a reasonably large rim diameter (mostly between 21 and 32 cm), with a tubular handle attached at *c* 45° anti-clockwise from a pinched pouring lip. The single example that displays such a configuration of handle and lip indicates that the vessel was intended to be held with the right hand and poured to the left.

Frying pans seem to have been slightly more common at CLS, with nine rim sherd examples from Group A deposits, including five full profile sherds, three complete handles, and fragments from three others (nos 166–178 include most of these and some others from the waster dumps). Of eleven complete handles recovered from the site, most are plain but one is stabbed over its upper surface (no 171). One full profile sherd has two pin punctures on the rim top, and the part of the vessel which is represented is curious in being almost straight (no 172). Although this could have been from the straight side of a D-shaped pan or fish dish, no right-angled rim fragments of such a form were identified, and it is perhaps more likely that the rim sherd had warped during firing. It is to be noted that all complete handles are between 40 and 55cm long (measured along their top surfaces), and are slightly conical, with a larger mouth and a narrower bore where they had been inserted into the body.

In addition to the more certain examples of FPs from CLS, it is likely that some, and possibly all, of the nine SFSB rim sherd fragments had also belonged to this handled pan form (including nos 179–184). This is partly because of the similarities of their rim terminations in being either square-headed or slightly flanged, but also because of the imbalance that exists between the numbers of FP rims that have been positively identified (because they are attached to handles), and of those that have not. FP and SFSB rim sherds together account for between 2 and 3% of the Group A material from CLS, and 37 examples were drawn for the archive.

By contrast, only eleven FPs were positively identified at CLN (including nos 399–407), and probably only a few of the SFSBs had belonged to such handled pans rather than to other bowl types. FPs represent much less than 1% of the Group A material from the site. As with most other forms, proportionately more FPs from CLN had been modified to prevent thermal shock by pin-puncturing, than those of CLS. Two of the five full profile sherds from Group A deposits have pin-punctured rims (nos 403 and 404), and of the three complete handles (all from the waster dump material), one was pin-punctured and another was slashed over its upper surface (nos 406 and 407). The slashed handle demonstrates that the body of the pan to which it belonged also carried applied finger-impressed strips. There is a type of base angle sherd, fairly common at CLS but less so at CLN, which has a finger-impressed strip applied around the edge of the base plate. Some examples of these of large diameter may not have been from bases, but from the upper edges of fire-covers (eg no 113), but those of lesser diameter may have been from FPs. This could not be proven to have been so at the Titsey sites, but there is at least one FP with basal ribboning from another Limpsfield area pottery production site (Ketteringham 1989, fig 8 no 38). It is possible that the ribboned strapwork of no 406 had also been applied to its base.

RAISED-HANDLED BOWLS (RHB)

This rare vessel form was only positively identified from rim sherds that also carried part of the handle. These had been raised from the rim as lugs that are pierced with large oval openings. There had probably been two of them on opposing sides of each vessel. Eight rim sherds with parts of such handles were found at CLS, of which two were from Group A deposits (nos 186–193). Only two were recovered from CLN, and both were from Group A deposits (including no 408). Only this last rim sherd was large enough to provide a reasonably accurate orientation of the vessel, and a measured estimate of its diameter. The vessel was over 30cm wide at the rim, and its rim has a short square-headed flange which is pin-punctured along its upper surface, even over the handle. There are also signs of pin-puncturing along the internal surface of the handle. The orientation of the vessel as shown may be reasonably accurate, but it could possibly have been shallower, with the maximum girth of the body less than that of the rim. Five of the eight rim sherds from CLS are illustrated as open bowl types, because, after careful examination, that is what their profile orientation appeared to have been. It should be understood, however, that the forming of such handles must have altered the shape of the adjoining parts of these vessels, so that it is uncertain that they have been accurately orientated. The correct shape of these vessels, therefore, remains uncertain, although it would seem most likely that if a bowl form with raised handles had been required, it would have been better that the upper part of the body was relatively upright so that their handles projected vertically. There is only one CLS rim sherd that is illustrated as a closed form (no 191), but this may be a mistaken orientation. On balance, it seems more likely that RHBs had been large bowls with short flanged rims that were of slightly larger diameter than that of the upper body. Three of the eight examples from CLS, and the only significant rim sherd from CLN, have pin-punctured rim tops, and it is probable that most of the handle-free rim sherds from vessels of this form have been included amongst the LCBs.

HAMMER-HEADED BOWLS (HHB)

Four rim sherds from CLS and two from CLN were identified as being from very large open form vessels with heavy rims that have both internal and external short flanges (including nos 108–110). Single examples of the form were found in the Group A deposits of both sites.

4.6.13 Jugs

Between 4 and 7% of the Group A rim sherds from CLS and between 5 and 10% of those from CLN were from jugs. The southern site produced 351 rim sherd and 537 handle fragments (23 and 17 from the Group A samples), and 173 rim sherds and 166 handle fragments were recovered from CLN (63 and 50 from the Group A samples). Despite the recovery of all these and other sherds, it was only possible to restore the complete profile of a single vessel (no 415), and there are only a few rim sherds that followed through to the shoulder to allow positive identification as to whether they had been from globular or other forms of jug. The body shape of these few rim sherds, and of the complete profile, was globular, however; there is also enough evidence provided by the many lower-handle spring sherds to suggest that most, if not all, jugs made at both sites had been of similar round-bodied form. The fully restored profile may not have been typical, however, since it is more wide-mouthed than most, and has a simple cylindrical neck that is not commonly represented amongst the others. Many jugs could have been smaller and more squat. What the complete profile has in common with all, or almost all, of the other jugs is a cylindrical neck, and a plain base angle with sagging base plate. Only two base angles from CLN, and one from CLS, have finger-impressed 'pie-crusting', and all three are in a coarse sandy fabric that was used relatively infrequently for the manufacture of jugs at both sites.

RIM AND COLLAR FORM VARIETIES

Most jug rim sherds from CLS with a fine sand temper (grade 4) have externally moulded rim terminations in a great variety of sub-forms, but all are on the long collared ends of cylindrical necks. A rare few have simple beaded rims on convex rounded necks, and these are usually those that are made of the more coarse sandy fabrics (grades 2 and 3; including nos 207–209 and 226). Another uncommon rim form sub-type found only on coarse-tempered jugs has a square flange and a pronounced cordon or carination on the neck (including nos 250 and 257–259).

At CLN there are also a few rim sherd examples of simple beaded types with convex rounded necks in relatively coarse fabrics, but square-flanged/cordonned-necked types were not identified. Proportionately more of the standard jug rim sherds are in the finer sand mix (grade 4) than those of CLS, but there is a similar variability of the collared rim form.

BODY DECORATION

Very few decorated jugs are represented at either of the two sites. All such body sherds were noted and, although it is suspected that the light tooling and combing techniques that were sometimes used had probably been eroded from the surfaces of some of those from the waster heaps, the rarity of decorated sherds in the Group A deposits may be a reliable indicator that such devices had been uncommonly used at either site.

There are, however, some significant differences. At CLS, 79 body sherds from jugs display a rilling of the shoulder (fourteen from Group A deposits), but none were identified at CLN. The only other decorated body sherds from CLS are one with slightly curvilinear combing (no 263), and two from the waster debris that have a wavy combing around the body set within horizontally incised lines (nos 265 and 266). No similar examples were found at CLN.

At the northern site there are other decorative schemes on jug sherds that are not represented at CLS. One of these is represented by a single sherd with a series of slightly diagonally-incised lines down the body

(no 461). The others have either single or multiple series of incised wavy lines that girdled the body and/or neck, or similar schemes of wavy lines achieved with a comb, or else combinations of the two. Nine sherds bear the former device, including seven from Group A contexts; 21 sherds have the combed version, of which 15 were from Group A deposits. Included amongst these sherds are the rims of seven jugs that carried such incised wavy decoration on their collars and necks (nos 449–455). Most body sherds with such decoration are usually from the shoulders of such jugs (eg no 456, although it should be noted that this has an uncharacteristically coarse sand temper). These decorated vessels represented by rims are very distinctive, but it should be emphasised that they are very poorly represented amongst the majority of jugs from Titsey North that were otherwise left plain and unadorned.

There is less than a handful of glazed jug sherds from the Titsey sites, and none were from vessels that need necessarily have been made there (see under Non-Titsey Pottery, 4.8).

HANDLES

A careful study was made of all handle and handle attachment sherds from both sites. The CLS sample is of 537 fragments that include 113 upper and 129 lower springs; that from CLN is comprised of 166 fragments, including 45 upper and 45 lower springs.

Handle Attachments

Irrespective of handle type (see below), almost, or perhaps all, upper springs terminate with a short rod that was luted through a hole made in the neck just below the rim. The join had been smoothed over, but, almost invariably, the internal wall has a series of stabs that penetrate deep into the handle attachment itself. This puncturing had presumably served the dual purposes of securing the adhesion of the handle, and assisting in the prevention of firing mishaps. Most of the lower handle springs may also have been luted through with the aid of a projecting rod but there was less clear evidence because of the degree to which they had been smoothed over. Some may simply have been pressed firmly against the body wall but this remains uncertain, despite the relatively large sample of such fragments that was found. Whereas all, or almost all, of the upper springs from both sites had been internally smoothed to conform with the regular cylinder of the neck and stabbed from the inside, no lower spring is internally punctured. Instead, the majority of lower springs had been smoothed internally but with a hollow depressed into the handle. A few had been more consistently smoothed inside, but had then been criss-cross knife-slashed through the handle/body wall junction.

Handle Forms

Almost all handle fragments from both sites are either rod or strap-like in cross section, and the few exceptions are 'hybrids' that are oval, but which have been included in the totals given for rods.

Strap handles usually have a shallow U-shaped cross section with slightly pronounced edges. Flat straps are rare. Rod handles are circular or slightly oval in section.

Only seventeen handle fragments were recovered from the Group A deposits of CLS and of these, six are rods and eleven are straps. From the overlying dumps, 445 of the 462 fragments could be identified as to form type, and of these, 55% are rods and 45% are straps. Since the Group A sample is so small, however, comparisons between the proportions found in the dumps, where rods are slightly better represented, would be unwise. It must still remain a possibility, however, that there had been a trend towards a greater use of rod handles in the manufacture of jugs.

At CLN, 31 of the 41 handle fragments from the Group A deposits that could be assigned as to type are rods, as are 86 of the sample of 103 from the waster dumps. Strap handles only represent 23% and 17% of the Group A and Group B samples, and this seems to be a significant difference from the jug assemblages of CLS where they are relatively more common.

Handle Decoration

Only ten fragments from plain handles were found at CLS (of which nine are straps), and three at CLN (all rods). All other fragments are 'decorated', although the primary purpose of such modification had probably been to prevent firing mishaps. At both sites, knife-slashing, pin and stick-end puncturing, finger impressing, notching, and the use of applied finger-impressed strips, had all been employed in regular patterns, and often in combination. Forty-one different schemes of handle decoration were identified in which one or more of the various methods had been used. Fig 29A illustrates each of these schemes, and Fig 29B provides the numbers of rod and strap handles that carry them at both sites. From these figures it can clearly be seen that some single schemes, and most multiple schemes, are represented by very few examples, but the absence of any of these rare types from Titsey North or South need not necessarily be of significance in determining any development of styles from one site to the other. A few of the patterns were very commonly employed at both sites, but there are some differences in the relative proportions of these schemes on rod and strap handles that may imply that one of the Titsey sites had been producing jugs before the other, and that the later manufactory may have continued after the abandonment of the earlier. CLS could possibly have been the earlier site, but such differences as exist need not necessarily imply stylistic development or increasing technical expertise, since the assemblages are not so different that they could not simply have been the result of practices of different potters operating contemporaneously.

Of the 537 decorated handle fragments from CLS, the schemes of 412 were recognizable (on 188 rods and 224 straps), and of the 166 from CLN, 120 could also be classified (on 103 rods and only 17 straps).

HANDLE DECORATION: A TYPE SERIES (figs 29A, 29B)

A Plain

Ten fragments from unmodified handles were recovered from CLS, all but one of which were straps. All three of those identified are CLN rods.

B Slashed knife-cuts

This was the most popular method of handle decoration at both sites. Most examples clearly indicate that the various schemes had been achieved with a typical 'personal' knife of medieval type, with a flat-backed cross-section and a curving of the blade edge towards the tip. Various schemes were employed (B1–B10), sometimes in combination with other devices (eg those of C, D, F, G2, H2 and I2; see below).

B1 Central vertical series
B2 Double vertical series
B3 Triple vertical series
B4 Quadruple vertical series
B5 Irregular
B6 Central diagonal series
B7 Double diagonal series
B8 Herring-bone: opposed diagonal series
B9 Double curvilinear series
B10 Double horizontal series

At CLS, B8 had been the most commonly used scheme and was found on 109 of the 188 rod fragments, but on only 35 of the 224 strap handles. Although also a common type at CLN, only 22 of the 103 rods and one of the 17 strap handle fragments carried this motif.

The next most commonly used knife-cut pattern was a combination of B1 and B8, ie a herringbone slashing with an axial line of similar knife-cuts. Roughly equal numbers of rod and strap handles from CLS carry the B1/8 scheme (27 rods and 20 straps), but all of the 38 examples from CLN are on rod handles. The single example of a B8 motif in combination with an axial row of punctures (D1, see below) was found on a strap handle from CLN.

All other knife-slashed schemes were much less commonly used. B4, 7, 9 and 10 were only identified at CLS, but there are no B schemes that were identified only at CLN. Of only six examples from CLN, two are on oval-sectioned rods and the others are on strap handles.

C Continuous axially slashed knife-cuts

Lengthwise slashes are only present on a few handle fragments that also carry B2 double vertically-slashed series, or D4 four-row pin-punctures (see below). All twelve B2/C fragments from CLS are on rod handles, and no examples of this combination were found at CLN. Only two D4/C handle fragments were found, and both are from the lower springs of rod handles from CLN.

D Pin-puncturing

This was the second most common method of handle modification at CLS, and was used, most especially, on straps. Far fewer examples were recovered at CLN although it was still the next most common device. Almost all sherds that were broken through the profile of these punctures showed that they had usually penetrated more than half-way through the thickness of the handle, and that they had probably been achieved with the same type of pin as was used to pierce the rim tops of bowls and several other forms. The various schemes of pin- puncturing include:

D1 Central vertical series
D2 Double vertical series
D3 Triple vertical series
D4 Quadruple vertical series
D5 Irregular

At CLS the most common of these motifs is the single row D1, but there are also several with double rows D2, and with random pin-puncturing D5. The great majority of these were on strap handles.

Most pin-punctured schemes at CLN are represented by only a few examples, except those with random punctures, D5. Eleven fragments bear this motif and all are from rod handles. This differs markedly from the CLS sample in which 23 of the 24 fragments with the D5 scheme are from strap handles. The only examples of the four-row D4 motif are on the lower springs of two rod handles from CLN that also have central axial slashes (D4/C type; fig 26 nos 457 and 458).

E 'Stick-end stabbing'

Nine handle fragments from CLS and one from CLN were deeply stabbed with a relatively thick, pointed instrument. This could have been a purpose-made tool of wood or bone. The devices used include:

E2 Double vertical series
E3 Triple vertical series

The numbers of rod and strap handles from CLS are roughly the same. There is only a single example from CLN: a rod handle with three rows of stabs (E3). No example with a central row was found at either site, but it was thought expedient to allow for such a type (E1) to accord with the general classificatory system.

F Edge-notching

Some handles that bear slashed or pin-punctured motifs and in one instance, an axially-applied finger-impressed strip, also have notched edges. All of the eighteen notched handles were straps, except for two rods of more oval section than most; one each from CLS and CLN. This last mentioned handle was one of only three examples with notched edges from CLN. The most common hybrid style that incorporated edge-notching was B2/F1, which also has double-slashed rows; seven fragments were found at CLS, all but one of which was a strap handle.

G Edge finger-impressing

Three strap handle fragments from CLS bear shallow, contiguous finger-impressions along their raised edges, but are otherwise plain (G1 type handles). All others with this decoration also carried other devices, such as slashed schemes (B1/G1, B1/G2, B2/G1, B6/G1, B7/

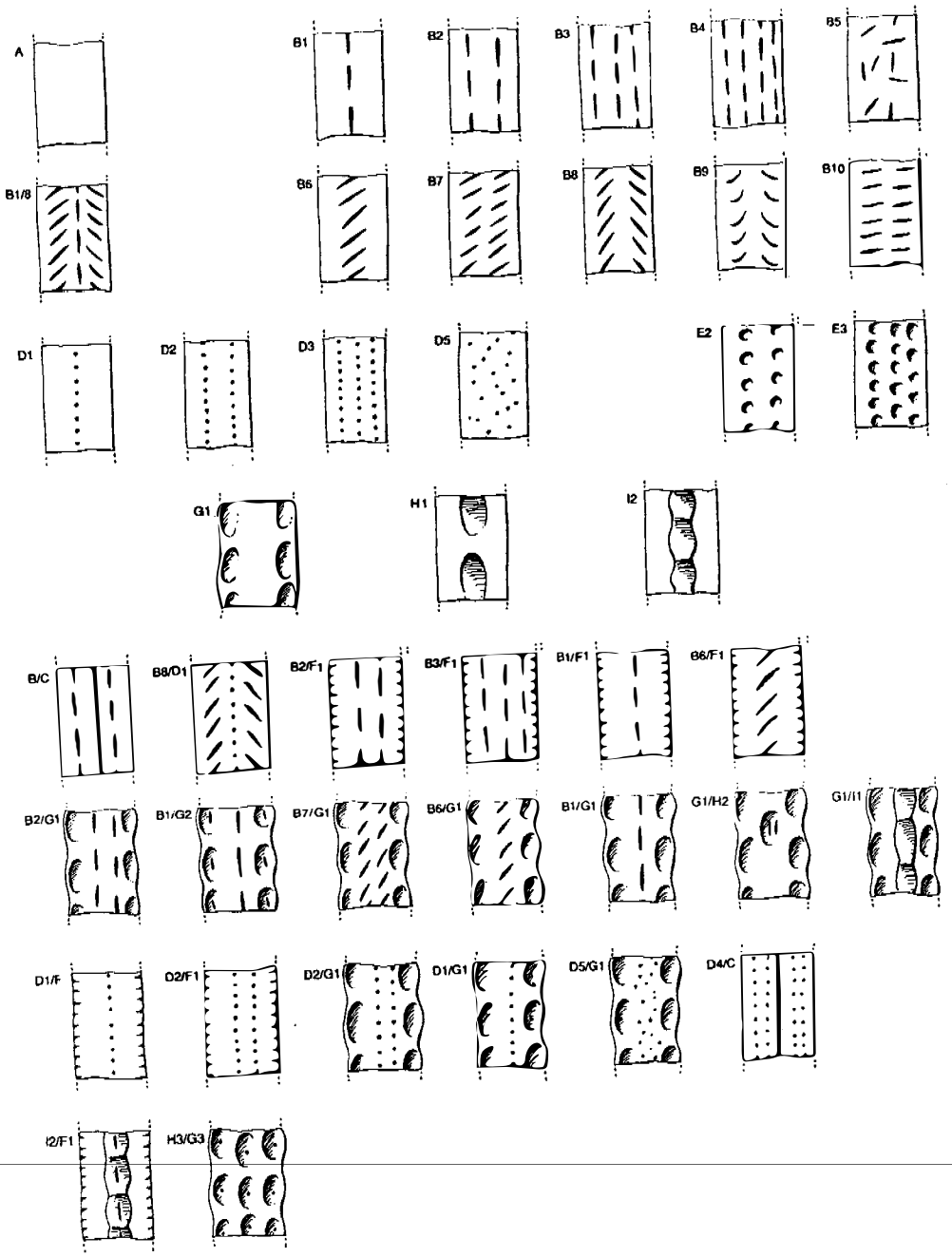

Fig 29A Clacket Lane, Titsey: typology of handle modifications.

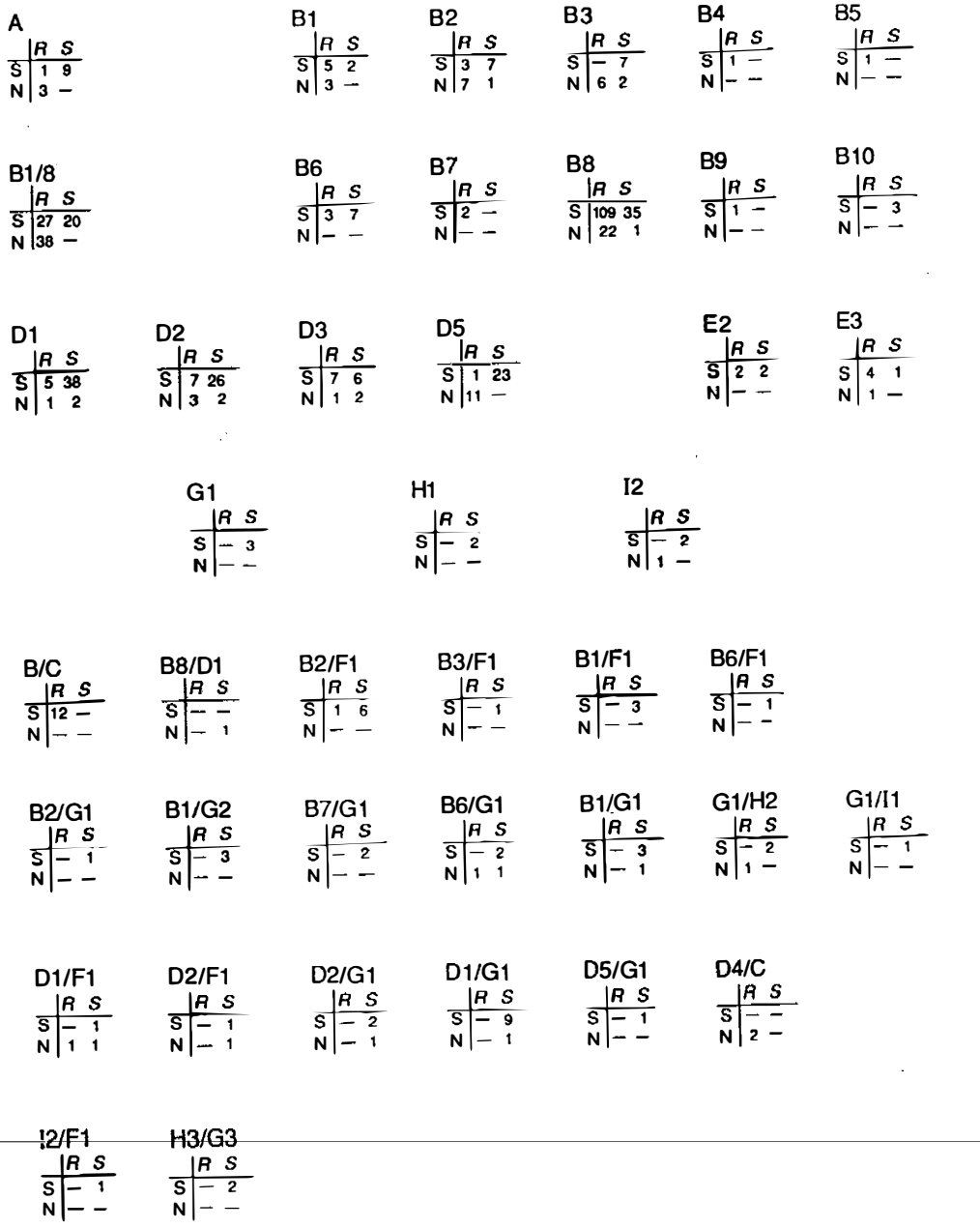

Fig 29B Clacket Lane, Titsey: quantification of handle types. The number of rod (*R*) and strap (*S*) handles from the south (S) and north (N) sites is given for each type shown in fig 29A.

G1), pin-punctures (D1/G1, D2, G1, D5) and, much more rarely, finger-impressed strips (G1/I1) or axial rows of finger-impressions (G1/H2, H3/G3). Thirty-four handle fragments were identified, but the great majority are straps from CLS. Of only six from CLN, two were classified as rods, but are distinctly oval in cross-section. The finger-impressions along the edges of a few strap handles from CLS also carry the same motifs as appear in the axial zone. Thus, three B1/G2-type fragments have a central row of slashes, and similar knife-cuts are present within each of the impressions; and two G3/H3 examples have pin-punctures within their impressions, including that of the central row.

H Central finger-impressing

Six strap handle fragments from CLS have an axial row of finger impressions, and of these, two are otherwise plain (H1), two also have finger-impressed edges(H2/G1), and two have finger-impressed edges that are pin-punctured, as is the central row (H3/G3). There is also a rod from CLN with three rows of finger impressions, but they are shallow, and the cross-section of the handle fragment is distinctly oval.

I Applied finger-impressed strips

The only example of a plain, finger-impressed strip on a handle is that of a strap fragment from CLS that also has finger-impressed edges (G1/I1). There are two strap fragments from the same site that also have centrally applied strips, but each of their impressions is slashed (I2 type). The only handle fragment from CLN that carries part of an applied strip is also of I2 type, and is a rod of flattened oval section.

4.6.14 Lids

Only a handful of rim fragments are from lids, and all were from CLS. Another two rim fragments from CLN could be from lids but may have been from other forms. Of the five examples from the southern site, three have diameters of between 12 and 14cm (nos 196–198); one may be from a larger lid (not illustrated), and the last is unique in being so small and having such an extended cylindrical handle (no 206).

4.6.15 Skillets or pipkins

The terminal ends of five handles from vessels that are presumably of these types were found at CLS (nos 80–84), and a handle fragment and a body sherd with the scar of another such handle were identified at CLN (no 339). Since these are rare, and as none found had been attached to the vessel bodies, the appearance of the form(s) cannot be known, other than that they had straight handles that protruded from the neck or from the top of the shoulder. The only body sherd that was positively identified as having belonged to a skillet or pipkin bears the scar of a handle at the base of an everted neck (no 339). This suggests that the vessel may have resembled a small SCP cooking pot. Perhaps all of the handle terminals from CLS had also been from such a skillet SCP sub-form. Three are square or rectangular in cross section (nos 80, 81, 83), one is oval and has a rounded and pin-punctured end (no 82), and the last is of rounded rod section (no 84).

4.6.16 Pipkin or cauldron feet

Four pedal fragments were recovered from CLS, but none were found at CLN. One is relatively short (no 92), and another, that is much longer and tapered, may have been from a tripod cauldron (no 93). Another fragment, which may also have been part of a long foot, has pin-punctures stabbed into it from the interior of the vessel (no 91); and there is another possible fragment of a foot (not illustrated).

4.6.17 Cisterns/bunghole pitchers

A bunghole was recovered from the waster heaps of Titsey North (no 340). It has a relatively narrow bore and was pin-punctured around the aperture and, perhaps unusually for such a vessel, its fabric is fine and sand-tempered (grade 4). Most other vessels of fine fabric are jugs, and it is possible that this bunghole may have been from one of the larger examples of these. The only complete jug profile is of large capacity (no 415), and although this vessel did not have a bung, a rare few others of similar size may have had. There is another vessel type made exclusively of grade 4 fine sandy fabric, however, which was also made only at CLN: lid-seated small storage jars (SST; see above). The bunghole could have belonged to one of these vessels, which have been conjectured as having been containers intended for transportation. They may have carried liquids, in which case the rim opening may have been intended to be permanently sealed, with the contents drawn-off through a bunghole. Unfortunately, all this is conjecture. There is also a spout or bung fragment from CLS, but this is described with the non-Titsey pottery, since it is doubtful that it had been made on site, not least because the bore is internally glazed (no 276, see 4.8).

4.6.18 Fire covers

There are some sherds which suggest that these may have been made at CLS and perhaps also at CLN. They include a few 'base' plate sherds with perforations, others with finger-impressed strips that had been applied around the underside edge of such 'base' plates, and a very robust, finger-impressed handle that could have belonged to a fire cover rather than a jug. The rims of these possible fire covers were much less easy to identify.

At CLS four thick 'base plate' sherds from Group A deposits, and another six from the waster dumps, include round holes that had been pierced before firing (no 112 is an example). The same site has produced ten 'base' angles from Group A deposits, and 107 from the waster dumps, that have finger-impressed strips applied around the outer edge (no 113 is an example). Some may be from the upper edges of fire covers, since this vessel form is often associated with such strapwork. Several of them, however, may genuinely have been from bases of FP frying pans. Only two examples could be reliably measured as to their diameter; one was of

17cm and the other of 32cm. The former is too small to have been from a fire cover but the latter could have been. Because of the uncertainties about the identification of the form to which they had belonged, a quantification by base eves of these angled sherds is of little value. If all but the one large example had been from FPs of *c* 17cm diameter then about four vessels are statistically represented; if all but the one small example had been from fire covers, then as few as two may be represented.

Six similar 'base' angle sherds with finger-impressed ribboned fringes were found at CLN. The only reliable diameter measurement, of 26cm, was of the only example from a Group A deposit, and this is large enough to have possibly been from a fire cover. No perforated 'base' plate sherds were found, however, so it remains uncertain as to whether the form had been made at the site.

Fire covers may also be identifiable from the forms and sizes of handles and rims, since they were large heavy bowls used upside-down, and required strong handles that could be securely attached to their upper surfaces. Only one example was thought to be massive and robust enough to be considered as a possible fire cover handle: a strap fragment with finger-impressed edges from CLN (not illustrated). Other 'jug' handles, however, may have sufficed just as well.

The hammer-handled bowl (HHB) rim sherds from CLS could have been from fire covers (nos 108–110), as could another thick and heavy rim sherd from the same site (no 111). No similar heavy rims were noted at CLN.

4.6.19 Other uncommon vessel forms

The complete range of both common and unusual vessel forms made at CLN has all been described above, but there are several rare forms that are only represented in the CLS collection. These include the rim sherds of two vertically-walled bowls (nos 194 and 195), two straight-sided open bowls (including no 114), and three small bowls or cups (nos 201, 203 and 204). No 202 may be another small cup, although this has been described earlier as a possible small bead-rimmed jar.

4.7 KILN FURNITURE

4.7.1 Flue-pipes and/or pedestals (fig 30)

Many fragments from thick-walled pipes of narrow bore were found at both sites. Some have slightly expanded ends, and others have thickened or heavily-beaded ends. All were made with a coarse sand temper (grade 1/2). A few fragments have round holes pierced through the body of the pipe before firing, and many from CLN are intermittently stabbed. Only one complete profile could be reconstructed, and this has a flared end and a bead-rimmed end, and was 25.5cm long.

Because of their thickness and shape, all sherds of these pipes could be readily identified. From CLS 142 fragments were recovered and 112 from CLN. The pottery drawing archive includes 46 rims from CLN (including 18 from Group A deposits), and 78 from CLS (including 11 from Group A deposits). The only significant difference between the examples from the two sites is that most of those from CLN are randomly stabbed in order to prevent firing mishaps, whereas very few stabbed examples were recovered at CLS.

More flue-pipes are represented at CLS than at CLN, but because of the relative sizes of the collections, the proportions are about equal. Eight of the rim fragments with beaded terminations also had a round hole of 8–11mm diameter between 3 and 4cm below the rim. None of the examples with flared ends had holes in the same position. Because of the rarity of sherds with holes it is possible that some pipes may not have had them, or that they only ever had a single hole that was close to the beaded end. The external diameters of the bead-rimmed ends varied between 6.5 and 12cm, and that of the flared ends, between 10 and 12cm. Only two pipe fragments from Titsey South were randomly stab-punctured with a knife (nos 478 and 479). Very many, if not all, of the pipes from CLN had been randomly stab-punctured. Twelve of the bead-rimmed ends from the site were also stabbed around and through the top of the rim. Only one example of a pipe sherd with a circular hole was found.

These short pipes had probably been used to vent gases around the kilns during firing, but they could have been arranged in a number of different ways. Laid end to end and slightly socketed into each other on both sides of the central platforms of the kilns, they could have circulated gases through the shallow troughs that surrounded them. They could also have been stood on end to serve as pedestals upon which the pottery was stacked. No examples were recovered in an *in-situ* position within the kilns.

Most pipe fragments from both sites are orange to brown in colour, with only a few that are grey to brown, or grey in core and surfaces. If they were from flue-pipes it is odd that the colour of the surfaces of the bore are never significantly more reduced than that on the outside. Is it possible to presume from this that dark-grey surfaced wares had not been the intended products of the kilns? If they had been, the clamping down of the kilns during the final stages of firing and cooling, to create an oxygen-free atmosphere, would surely have generated gases that would have reduced the bores of the pipes to a dark grey colour.

4.7.2 Tiles

At least 52 fragments of flat tiles were recovered at CLS, and 145 from CLN. There are also a few other sherds from both sites that may have been from tiles but could be from thick base plates of large vessel forms. These have not been included for the purposes of this report. Most fragments from the southern site are from roof tiles and seven are from floor tiles, and it seems more likely that they had been used, for various purposes, during the manufacturing or firing processes rather than as building materials in the workshop structure (see Discussion below). By contrast, none of the fragments from CLN could be positively identified as being from floor tiles, and perhaps all of them could conceivably have belonged to a tiled roof of the rectangular timber-framed building that may have stood to the north of the kiln.

Most of the 45 roof tile fragments from CLS have a very coarse sandy fabric (grade 1), but a few have a

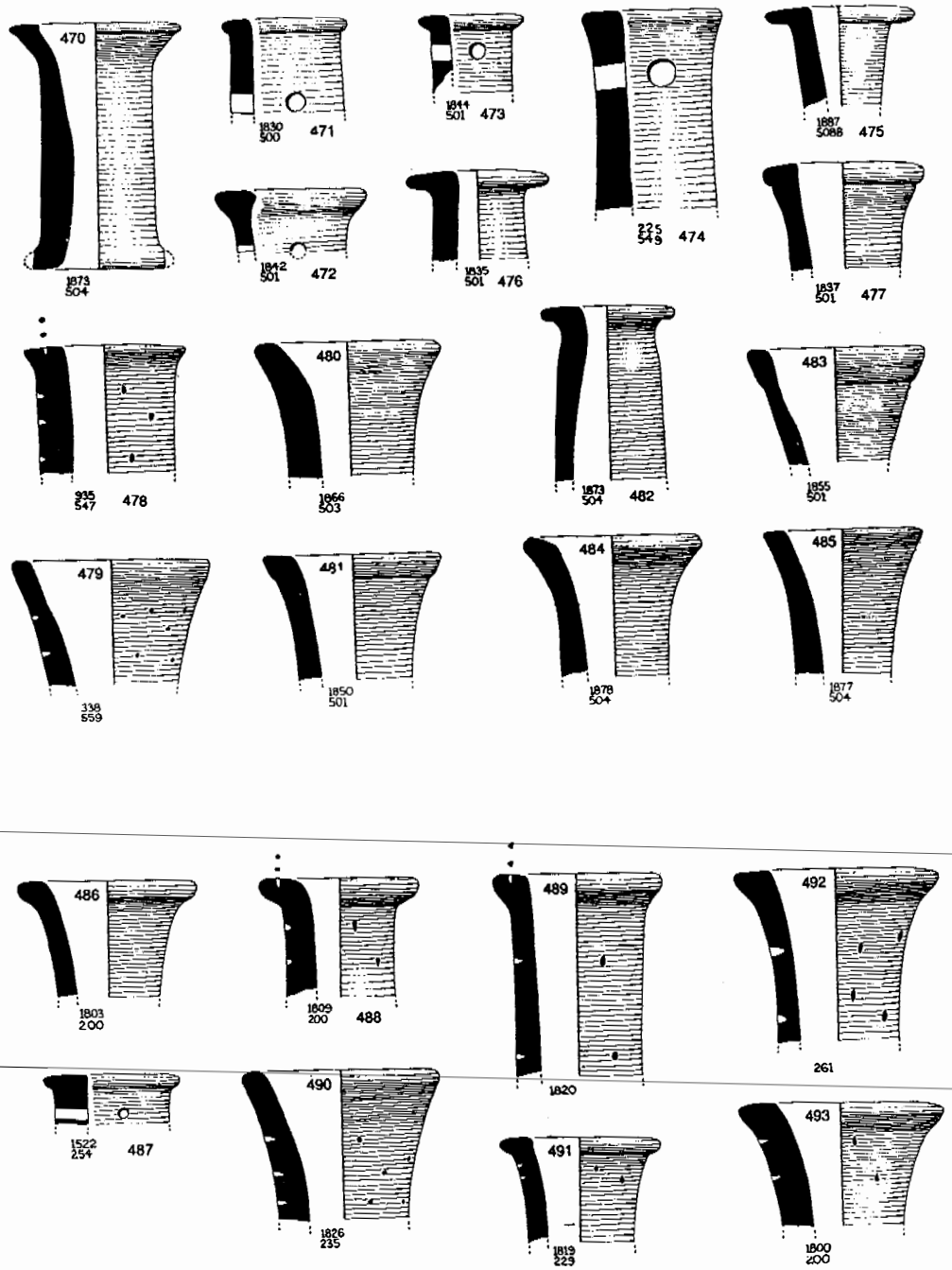

Fig 30 Clacket Lane, Titsey: kiln furniture from the southern site nos 470–485, and from the northern site nos 486–493. (1:4)

relatively fine texture (grades 2 and 3). Their average thickness is between 12 and 14mm. The sample includes five squared corner fragments, and three with parts of round peg holes. Most were recovered from the waster dumps or the subsoil, but two were found in the Group A contexts of ditch 557, and two in those of gully 609. Floor tile fragments were identified by their thickness (between 17 and 19mm), and because four of the seven examples also include parts of their obliquely-cut knife-trimmed (chamfered) edges. Three corners are also included in the sample of floor tile fragments. Although none were recovered from any of the Group A contexts, two floor tile fragments were included in the deepest stratified waster dump assemblages of 541 and 560.

Nearly all of the tile fragments from CLN are also of a very coarse sandy fabric, and have thicknesses of between 12 and 14mm. Of only two that are thick enough to have possibly been from floor tiles, both were recovered during the machining of the subsoil, and need not necessarily have been contemporary with the medieval industrial use of the site. A little over 50% of the roofing tile (77 fragments) was recovered from contexts that were directly associated with the rectangular building (240, 240NE, 240C), and the remainder was from the machining and subsoil collections. Since none were found in any Group A context, all could represent debris from the roof of the ?workshop building that was found on site. The sample of roof tiles includes eight corner fragments (including five from context 240), seven with parts of circular peg-holes (including three from 240), and a fragment from the machining context 200 that bears two holes.

No tile fragment was recovered from any context within, or directly associated with, either of the kilns, and it may, therefore, be unlikely that any had been made on site. The local tileries that made the floor and roofing materials that were used for other purposes at CLS, and for roofing the workshop at CLN, have yet to be discovered.

4.8 NON-TITSEY POTTERY (fig 20, 272–7; fig 27)

Nine sherds from CLS and ten from CLN are sufficiently different in form, fabric, or surface treatment from all of the others found, as to suggest that they may have been from vessels made at other manufactories that had been carried to the Titsey sites and broken there by the potters themselves.

The nine from CLS are the only glazed sherds from the site, and all but one were made with a fine sand temper (grade 4). Four are body sherds with external green glazing, and there is another body sherd from a jug with a vertical white-slip stripe below the glaze (no 275). Two others are base angle sherds, of which one, with traces of eroded external glaze, is from the only finger-impressed 'pie crust' base from the site (not illustrated), and the other is from a baluster-type jug (no 273). There is also an upper handle spring from a jug that has applied oval pads on either side of the top of a rod handle (no 274), and a rolled fragment from a spout or bunghole that is green-glazed over the internal surfaces of the bore (no 276). The orientation of the latter is uncertain, as is the identification of the vessel type to which is belongs. It is possible that it had been from the long spout of some skeuomorphic form, in which case it is illustrated upside-down.

Only five of the ten non-Titsey sherds from CLN are glazed, but all were made with a fine sand temper (grade 4). The glazed sherds include a square-headed rim of a jug that had a cylindrical neck (no 462), a plain base angle of a jug (no 464), the splayed base of a baluster-type jug (no 463), and two body sherds. The externally applied glaze was green, but on most sherds it is considerably eroded. Three of the unglazed sherds are of a distinctive redware type with white and self-slip striped and pelleted motifs. These schemes vaguely resemble those of Rouen-type jugs, and the vessels to which these sherds belonged had probably been copies of these, or more degenerate examples of the type that was made at, possibly, several sites in southern England. Two of the sherds that are grey in core and have white-slipped surfaces may be from a single vessel. Both have vertically-applied red/brown slipped stripes, and one also has a red/brown pellet (nos 466 and 467). The other Rouen-type sherd is from a buff-bodied jug with a diagonal scheme of red slip panels that has diagonal buff slip stripes; these were later applied to delineate such zones from the grey/buff coloured surface of the vessel (no 468). The other two unglazed sherds are: a body sherd, probably from a jug, that has shallow-moulded vertical fluting (no 465), and a base angle, probably also from a jug, that is cream/white in colour. The latter is not like a Surrey whiteware of any recognisable type, and it may have been part of an experimentally fired piece (no 469).

It could be argued that not only the last-mentioned sherd, but all nineteen sherds described above, may have been from vessels that were experimentally fired on site. The presence of a few odd and glazed sherds has been noted at several of the other kiln and waster dump sites in the Limpsfield area (Cunnington 1932, 119; Prendergast 1974, 63), but since glazed vessels seem never to have been produced in quantity in the district, there seems no reason to suppose that they represent trial pieces. It may be possible that they represent a restricted production of glazed and/or finely decorated jugs, for the use of the potters and their families or by special order, but this seems unlikely since, if they had such expertise, why would they not have used it more often? With the great demand that existed for glazed jugs in the 13th century it is curious that large scale production of them does not seem to have been undertaken in the Limpsfield area. If the potters did not produce them in quantity, there is no reason to suppose that they had made them at all.

In addition to some being glazed, several of the non-Titsey sherds display forms, or parts of forms, that are not otherwise represented in the general population of jugs from the sites. These include baluster bases, applied pads at the tops of rod handles, white slip stripes, and red slip stripes and pellets. Rouen-type derivative jugs were, almost certainly, made in the London area during the 13th century (Pearce *et al* 1985, 28), but were probably also made elsewhere in southern England. The white slipped and glazed sherd could be from an Earlswood-type jug, since the type site kiln where similar decoration was applied to orange-bodied jugs, is only

15km distant (Turner 1974). There are not many jugs from the Home Counties that have pads applied to both sides of the top of the handle. The only production sites in the region where they were employed on a significant proportion of the jug populations are in the Mill Green area of Essex (Meddens & Redknap 1992). The Titsey example may have come from there, but too little is known of pottery production in the Lower Thames Basin during the medieval period to be certain that it had.

4.9 DISCUSSION

The discovery of the kilns at Clacket Lane extends the range of known production sites further north into the parish of Titsey, and directly on to the band of Gault Clay where none have been found before. Their excavation has also provided the best representative samples of pottery of any of the Limpsfield ware manufactories that have been discovered so far, since they include collections from all three focal areas of production: kiln, workshop and waster heap.

The products of the two kiln sites share enough of the characteristics of the pottery from other kilns and waster heaps of the Limpsfield ware manufacturing area to confirm a close stylistic relationship. They belong to the same tradition, in that many of the same forms and form elements were shared, and since some of these are, apparently, unique to the scattered production sites on the edges of Limpsfield Chart, one could reasonably assume 'Limpsfield Ware' to be a valid concept, and that the Clacket Lane sites had produced variations of the same. The ceramic tradition is likely to have been sustained through familial links, although how many dynasties of potters were involved, and for how long, is as yet unclear. No records of medieval potters operating within Titsey parish have so far been located. There is a problem, however, in that characteristics that have served to identify Limpsfield ware in past studies have sometimes been details of form, and sometimes a perception that it has been a hard grey sandy ware. Some studies have made a clear distinction between hard grey sandy wares and Limpsfield wares but for reasons that are not made clear or else do not seem valid. One of the most interesting aspects of the pottery collections from the Titsey sites is their variable colour, without any obvious preference. Dark grey, dark brown, and orange/brown pottery was found at both sites, and there seems no reason to assume that vessels that had survived firing and been marketed were not also of various colours. There is variability in the colour of the pottery from other kilns and dumps of the Limpsfield area, but, perhaps, not as great as that of the Titsey manufactories. It is also not possible to define Limpsfield ware by the criterion that a common clay source was used, or a single grade of quartz sand, or a common method of manufacture. It can reasonably be assumed, for example, that the potters at Titsey had used the Gault Clay and that the temper came from the adjacent ferruginous sands of the Folkestone Beds. It seems much less likely that the southernmost production sites of Vicars Haw and Scearn Bank had used such sources, however, and at a kiln site in Prendergast's middle zone of kilns and dumps (Prendergast 1974, 58) a lump of Wealden clay is reported to have been found within a kiln near Ridlands Farm (Cunnington 1932, 119). At both of the Titsey sites, the sand temper that was used for most vessels was of a slightly coarser grade than that which was employed at the other discovered kilns and dumps next to the Chart. Jugs at Titsey and elsewhere, however, were usually tempered with finer sand grains. This is not remarkable: the different grading of grains for use in fine and coarser vessels is typical of most sand-tempered wares in southern England during the medieval period, but it does mean that such differences can never be used, in isolation, as criteria for distinguishing wares. Streeten found significant differences between Limpsfield ware and some greyware pottery from West Kent on the basis of grain size analyses, but his Surrey samples were only taken from the Scearn Bank waster heaps, which are not as coarse as most pottery from Titsey, and need not be typical of the size variability of any of the other production sites of the Limpsfield area (Streeten 1982, 93).

Much of the pottery from the Titsey sites had been wheel-thrown, but some vessels, mostly cooking pots and storage jars, could be demonstrated to have been hand-made, with only their rims and upper parts trued-up on a turntable. The same may also be true of the other manufactories next to Limpsfield Chart, although it will require a re-examination of the available samples to confirm whether this had been so. Nevertheless, because some, and perhaps

many, vessels had been hand-made at these two northern kiln sites, wheel-thrown manufacture cannot be used as a criterion for defining Limpsfield ware.

It is, most probably, only a few of the idiosyncratic details of forming that can be said to be typical of the production sites that lie close to Limpsfield Chart, and which do not, as yet, appear to have been employed elsewhere. These details, which include intermittent long knife cuts on the internal bevels of large bowls, and incised wavy lines around the inside of other large bowls, have not been identified at every one of the kiln and dump sites, but this may be because of the small size of some of the retrieved samples. There are other details of forming that collectively distinguish the vessels made in the district from most others made elsewhere in Surrey, or London, but which are known to have been sometimes used elsewhere in the South-East. These would include the extensive use of stabbing or pin-puncturing in handles and rim-tops, the collared rims of some of the jugs, and the tendency towards the use of wide flanged rims on bowls and some other forms during the 13th century.

Few differences were found between the assemblages of the two Titsey sites, and although some of these may represent the idiosyncracies of individual potters, others could indicate that there had been a development of the ceramic tradition over time. Pin-puncturing of the rims of vessels was much more commonly employed on the northern site, as was the long internal scalloping of the rim edges and internal incised wavy lines on bowls. The lid-seated small storage jars seem only to have been made at the northern site, and the only rim sherd from a skeuomorphic jar form was also found there. Although it is difficult to be certain with the small numbers involved, it is possible that SFLBs (short-flanged large bowls) and skillets were less commonly made at the northern site, and that frying pans and raised-handled bowls are slightly better represented at the southern site. There are also differences in the proportions of, and differences of detail between, the jug types that were made at both sites. The moulded collar is, by far, the most common type of jug rim at both sites, but the rare types at CLS with square flanged rims or carinated necks are not represented in the northern collection. So few of the bodies of jugs were decorated that it is difficult to detect whether there were any real differences between the two sites in this regard, but some from the southern site had rilled shoulders and others had curvilinear combing, whereas no such sherds were found at CLN; and incised sherds of wavy lines were found on the rims and upper bodies of a few jugs from CLN, whereas such multiple schemes were not present at CLS. Other differences can be discerned in the jug handles. Proportionately more were of rod section rather than straps at the northern site, whereas the reverse is true for CLS. Over 60% of all rod handles from CLS had been slashed with a herring-bone motif (B8), whereas only 21% of those from CLN had been modified in the same way. The same scheme but with an axial row of slashes (B1/8) was the next most common motif at both sites, but in the south it is only employed on rod handles, whereas at CLN it was employed on approximately equal numbers of rod and strap handles. Pin-puncturing was also only ever employed on rod handles at CLN, whereas all but one of the 24 examples from CLS are on strap handles. Another difference that may be significant is that all six handle fragments from CLS with an axial row of finger impressions were straps, whereas the single example from CLN is on a rod.

It is difficult to detect any differences in the relative proportions of the major classes of vessels from the two sites that could not, quite easily, be explained as the result of statistical vagaries, or else because of a bias that may be inherent in the samples that were chosen for quantification. Because of the comminuted nature of the material, it has not been possible to identify all of the sub-form types that were present in the Group B waster dump collections, let alone quantify them. Only the sealed Group A material was, therefore, analysed in detail and, although the relative proportions of types within the dumps seemed to be about the same, it was not possible to quantify this. Slightly more CPJ cooking pots are represented in the Group A material from CLN than in that from CLS, and LCB large cooking bowls and FP frying pans are more common in the southern collection than in that of CLN. For most of the other major forms, however, the proportions may be about the same, although it is difficult to be certain of this because the proportions vary according to whether the figures for vessel-count or eves are cited.

In fact, it is not so much the differences in the relative proportions of forms from the two sites that are striking, as their similarities (see table 2). Both of the assemblages from sealed groups are overwhelmingly dominated by 'standard'-sized cooking pots, with the next most common forms represented by smaller cooking-pot types and long-flanged large bowls, both of which barely account for 10% of the production debris at either site. The relative proportions of jugs are a problem, in that far more are represented if the data on eves is used, rather than of rim sherd counts. An assessment based on a simple count of rims would have the CLS jugs as representing 4% of Group A material, and those of CLN as representing 5%, whereas the data on eves would suggest twice as many at CLN, and almost twice as many at CLS. The reason for such a discrepancy is, undoubtedly, because jugs generate fewer rim sherds than larger forms and, in consequence, fewer of the jugs were counted more than once in the simple assessments of vessel numbers by rim sherd counts. The most representative figures for the relative proportions of jugs are, most probably, those based on eves, which suggests that they had probably been the second most common form after small and 'standard'-sized cooking pots at both sites, and present in greater numbers than long-flanged large bowls. Even so, it is noteworthy that they represent little more than 10% of the production at either of the two sites. None of the other forms that were recognized account for more than 4% of the Group A material from either site, and most are represented by considerably less. They include storage jars and neckless jars, both of which may be marginally better represented at CLS, small storage jars, small cooking bowls, raised-handled bowls, hammer-headed bowls, skillets and lids. Rarer forms such as a pipkin or cauldron form, and some odd bowl and cup-like vessels, were only identified at the northern site, whereas the lid-seated small storage jars seem only to have been made at CLN.

It is not certain whether these minor differences between the Titsey North and South assemblages reflect chronological developments or human idiosyncracies. That may only become clearer when more is known of the range of types at other kiln sites in the area. Nor will it be possible, without more analysis of larger samples, to be certain whether either or both of the Titsey kilns were older or younger than the material from those other Limpsfield ware manufactories. It is only possible to suggest, on the basis of frail and limited evidence, that CLS may have begun production before CLN and the latter site may have continued for longer, and that both may be relatively early in the sequence of discovered Limpsfield ware production sites.

Documentary sources suggest that the industry had begun before *c* 1266 in Limpsfield parish, and potters are recorded there down to the end of the 14th century (Percy 1970), although the frequency of potter names in 15th and 16th century documents that pertain to the adjoining Kentish parish of Westerham (Prendergast 1973, 6), may indicate a translocation of the industry rather than its demise. The archaeomagnetic determination of the date of the last firing of the kiln at CLS places that event firmly in the 13th century, and probably closer to the middle rather than the end of the century (see Appendix 1). The date of the crumbling kiln structure of CLN could not be obtained by such means, but a coin of 1248–50 was recovered from a subsoil layer that probably represents a ploughed-out waster heap or heaps. The coin, therefore, was not from a sealed context and need not have been associated with the period of pottery production, but since losses of medieval coins in rural environments are so rare, it seems safe to regard it as a loss by a potter, or by a visitor to the production site. Both sites may, therefore, have been in operation during the middle decades of the 13th century, and perhaps contemporaneously.

The contention that CLS may have begun earlier is based, in part, on the presence of a few rim sherds of a rare bowl form in Group A contexts, whereas no others of this type were identified in the Group B material from the site, or in any of the contexts of the northern site (fig 16 nos 122 and 123). This bowl form, which, uniquely amongst the bowls from either site bears incised wavy lines over its external surface, may therefore have only been made during the earliest firings of the CLS kiln, and not thereafter. There is also a greater variety of uncommon forms represented at CLS which could indicate that a period of experimentation might have been superseded by a standard repertoire of forms that was more strictly adhered to, as at CLN. One form that may have been an innovation at CLN, however, was the lid-seated small storage

jar. Its absence from CLS does not prove that the northern site was producing pottery after the demise of the southern site, although it may lend a little support to such a theory.

There are three other aspects of the Titsey pottery that support the notion that they belong to an early, and perhaps the earliest, phase of production of Limpsfield ware. These concern the preferred size-grading of temper, colour variability, and some similarities to another rural ceramic industry that was operating within the Thames Basin of the London region in the 13th century. The slightly coarser sand temper of the 'standard' fabric at Titsey is more similar to that of the ubiquitous grey/brown sandy ware (GBQ) which is the dominant ceramic tradition in East Surrey during the 12th and early 13th centuries, than it is to that of most of the pottery from all the other Limpsfield ware production sites next to the Chart. Not only is there a similarity in the coarseness of fabric, but in the range of surface and sub-surface colours, with many that are grey and/or brown, and some even resembling the orange variants of the GBQ tradition (OQ Type: Jones 1991–2, 125). These similarities could support the possibility that it may have been potters of this, essentially 12th century, tradition who had begun to develop stylistic idiosyncracies at new kiln sites that began operations on the edges of Limpsfield Chart in the middle decades of the 13th century. It is probably not a coincidence that the 'Whiteware' industry began to be developed in west Surrey at about the same time (Pearce & Vince 1988, 84). This ware had, almost certainly, evolved out of the same Grey/Brown Sandy ware tradition.

The pottery from Titsey also has some similarities with certain aspects of the dominant sand-tempered coarseware tradition that lay north of the Thames in the western and northern hinterland of London. The most characteristic product of late 12th and 13th century 'Hertfordshire Reduced Ware' is a jug with a strap handle that is deeply finger-impressed along both edges (Renn 1968), and which is very similar to motif G of the Titsey handle type series. Of the two sites at Titsey, the majority of such finger-impressed handles were from the southern site, which may have been the earliest. Since the first identification of 'Hertfordshire Reduced Ware' and the plotting of the distribution of its typical jug type, many more production and consumer sites have been excavated, and although much remains unpublished, the various collections suggest that these reduced sandy greywares of South Herts, North Middlesex and South Bucks belong to a tradition of manufacture rather than a ware (whatever that might be classified as having been), and that there may be many local variants that, for the most part, have not yet been characterized. One such, which may best be understood as perhaps a sub-regional variant of the tradition, seems to have prevailed west of the river Colne, in South Bucks, in the region immediately to the north-west of historic Surrey, and is characterized by a combing of the body of some cooking pots (so-called 'M40' ware; Hinton 1973). Two separate production areas of this variant have been sampled by excavation at Denham, where one of the kilns was archaeomagnetically dated to AD 1240 $\pm$ 20 at 68% confidence level, although it was suggested that production may have begun much earlier, but 'need not have continued very much later' (Farley & Leach 1988, 75). Some of the jugs and other forms, as well as the general range of vessel types and their frequency, are similar to those of Titsey. Many of the jugs have similar collared rims (*ibid,* fig 13 nos 1–10). Of these, 15% of the handles have deeply finger-impressed edges, 60% were slashed or stabbed, and there is a mix of strap and rod handles in the ratio of 3:1 (*ibid,* 74). Two forms of special interest are represented by nine raised handles from barrel-shaped vessels, of which both that are illustrated have stabbed rim tops (*ibid,* fig 17 nos 9 and 10), and thirteen fragments of 'cresset lamps' (*ibid,* fig 27 nos 1–9). The former are very similar to the RHB raised-handled bowls from Titsey, and the latter are a good match for the flue pipes from Titsey, and even include one that is stabbed. Their identification at Denham as lamp bases was tentative and 'was disputed by others who feel they are more likely to be items of kiln furniture' (*ibid,* 75). Some of the bowl rims from Denham were also stabbed (*ibid,* fig 23 no 6 and fig 24 no 4), and it is interesting to note that vessel forming had sometimes been by hand, and sometimes by wheel-throwing, although just as at Titsey, it was not possible to be certain for all vessels which technique had been employed. The repertoire of vessel forms and their relative proportions at Denham are broadly similar to those of the Titsey sites, with a preponderance of cooking pots, significant proportions of jugs and bowls, and small quantities of frying pans

(called skillets at Denham), skillets (with feet), bunghole pitchers, curfews, and odd storage jars. There are, of course, very many differences between the Titsey and Denham material, and it is not the intention to suggest here that there had been any direct links between the potters of the two industries, which are 50km apart. The linkage is only that of a common tradition, but of a widespread and pervasive one in which not only were similar methods of manufacture and firing employed but the same basic forms were made, and in the same relative quantities, at least insofar as can be judged from kiln debris. The publication of the Denham material was the first to draw attention to 'a family resemblance' to Limpsfield pottery (*ibid*, 96), and the Titsey material being, most probably, early within the duration of the industry, affords an even closer match to Denham than the products of the other kiln sites of the Limpsfield district. That this communality of style had been pervasive on both sides of the Thames Basin during the middle decades of the 13th century seems almost certain.

There is only a little scope for comparisons to be made between the Titsey material and the products of the other manufactories of Limpsfield ware. Although kilns have been excavated, totally or in part, at Scearn Bank, Vicars Haw, Loampits Field, Ridlands Farm, and Moorhouse Sandpits, and even more waster dumps have been dug, for only three of these sites are there published descriptions that identify the range of forms and their relative frequency on the basis of sufficiently large samples. At Watts Hill 1, 400 measurable rim sherds were recovered from the total excavation of a waster heap (Prendergast 1974, 59), at Loampit Field part of a kiln and adjacent waster heap yielded in excess of 560 measurable sherds, and 700 were retrieved from the fill of a kiln at Ridlands Farm (Kench 1989, 131). The repertoire of vessel forms at all three sites is very similar, and is much the same as that of the Titsey potters. At Watts Hill 1, the rim sherds were separated into jugs, cooking pots and dishes (flanged bowls at Titsey) according to a formula based on measurements of rim diameters and rim flange widths. Such calculations, however, were not able to distinguish sub-forms of vessel types, or even some standard forms such as frying pans, although one probable example was illustrated (Prendergast 1974, fig 6 no 37). A cistern form was identified from a single bunghole, however, and elsewhere other forms, such as skillets, pipkins, large bowls, and storage jars were acknowledged as having been made at Hope-Taylor's unpublished kiln site and workshop at Vicars Haw (Prendergast 1973, 14). A more comprehensive type series of vessel forms was established for the Loampits Field and Ridlands Farm material by Russell, in which cooking pots in two sizes, pitchers (jugs at Titsey), dishes (large bowls at Titsey), bowls (cooking bowls at Titsey), pipkin-type cooking pots with single stub handles (skillets at Titsey), skillets with hollow handles (frying pans at Titsey) and curfews, were recognized as standard forms (Russell 1989).

Prendergast calculated from his formula that jugs represented 57% of his sample from Watts Hill 1, followed by cooking pots at 33%, and dishes at 10%. These proportions are very different from those of the Loampits Field, Ridlands Farm and Titsey sites. Russell calculated proportional differences on the basis of rim eves and 'weight for body sherds' (Russell 1989, 140), and estimated that at Loampits and Ridlands respectively, jugs represented 36% and 26%, cooking pots 48.6% and 58.2%, and dishes 11.8% and 13.7%. Another 3.1% represented bowls at Loampits, and 1% of skillets at Ridlands. In the same publication, Kench used Prendergast's formula to arrive at figures that broadly agree with Russell's proportions for Loampits Field, with 38% of jugs, 50% of cooking pots, and 12% of dishes. Kench's figures for Ridlands Farm, however, accord less well, since he gives only 9% for jugs and has 78% for cooking pots and 13% for dishes. It is not clear why there should be such a difference, especially since there is such a good match for the Loampits Field sample. Whether nearer 9 or 26% at Ridlands, or 36 or 38% at Loampits, however, these proportions of jugs are significantly different from the 57% that is said to be represented at Watts Hill 1. At both of the Titsey sites, however, jugs in the Group A sealed group samples are even less well represented, at either 4% (vessel count basis) or 7% (eve basis) at the southern site, and either 5 or 10% at the northern site. What these proportional differences mean is as yet unclear. They may be due to statistical errors caused by comparing, perhaps, incompatible samples, or even to the possibility that one potter may not have been too successful in firing jugs. Such an assumption of incompetence is flippant, however, and although

it remains a possibility that the workshop associated with the Watts Hill waster dump may have specialized in the production of jugs, the sample of 400 measurable rims from the site, however, is probably too small to be certain that it is representative of the relative proportions of vessels that were made and fired nearby.

All of the illustrated jug handles of Prendergast's sample from Watts Hill 1 are straps, although some are slightly oval in profile. Most carry stabbed patterns, and there are some with slashed motifs, but none have finger-impressed edges. Of the material from Loampits Field, only oval strap handles have been published (Prendergast 1974, fig 10 nos 80–83; Ketteringham 1989, fig 6 nos 42–57), and over 75% were said to have stabbed patterns, with the smaller proportion bearing slashed motifs (Russell 1989, 144). At Ridlands Farm these proportions are reversed, with slashed handles representing over 88% of the sample (*ibid,* 144). Furthermore, of eleven illustrated examples from Ridlands, six are straps, or oval straps, and five are rod handles (Ketteringham 1989, fig 8 nos 28–37). A rod handle identified by Prendergast in his sample from three waster heaps at Scearn Bank was said to be unique, with no others in the collections from the other Limpsfield ware sites that he had seen (Prendergast 1974, 64), although he illustrated another possible example from Watts Hill 2 (*ibid,* fig 12 no 101). Rod handles, therefore, seem to have been rarely made at any of the discovered sites, except Ridlands and Titsey. At both of the Titsey sites there are differences in the proportions of rod and strap handles in the sealed features of Group A and in the dumps and subsoils of Group B. At CLS, eleven of the Group A handle fragments are straps and six are rods, but in the larger sample of Group B (445 identifiable fragments), 45% are of straps and the majority are rods. At CLN all but ten of the 41 Group A fragments are of rods, whereas only 17% of Group B (out of a total of 113 identifiable fragments) are of straps. Thus, it could be argued that there may have been a gradual change to a greater use of rod handles during the working period of the two kilns, and that Ridlands Farm, with its mix of rod and strap handles could have been in operation contemporaneously. There may not have been a general trend towards a greater use of rod handles in Limpsfield pottery, however, since there may have been a revival of the fashion for strap handles during later phases of the industry. No rod handles were included in the Loampits Field sample, for example, which was associated with a kiln for which its last firing was dated, within the 68% confidence limits, to the early 14th century (Ketteringham 1989, 130).

The impressed, slashed, stabbed, and pin-punctured schemes of handle modification of Limpsfield ware jugs had not previously been classified before the type series of such motifs was devised for the material found at Titsey. The schemes that were most commonly used there have been discussed previously, but there are so few published illustrations or descriptions of the various motifs employed at other Limpsfield ware manufactories that few useful comparisons can be made. Of the two most common schemes at both of the Titsey sites (B8 Herringbone slashing, and B1/8, the same, but with an axial row of slashes) for example, it is only certain that they had also been used at Ridlands Farm (Ketteringham 1989, fig 8 nos 31 and 32), but their absence at Loampits Field and Watts Hill 1 need not necessarily mean that they had not been used there.

A significant aspect of the jugs from Titsey is that only a few were decorated on the body. The number of jug body sherds that have combed or single incised wavy line schemes is large enough only to be counted in handfuls, and the illustrations of some from CLN (nos 449–456) represent the only such examples amongst a large collection of rim sherds. Prendergast describes decorated body sherds from Watts Hill 1 in a context that suggests he thought they were from jugs, and the majority of these are said to have combed and incised wavy lines, with about half as many with applied strips (Prendergast 1974, 63). No information is supplied as to whether such schemes were commonly found on the jug sherds from the site, which they might have been if Watts Hill 1 had specialized in their production. At Loampits Field, Russell calculated that 71% of jugs had been decorated on the body, with wavy combed schemes the most common, applied strips less common, and rare schemes of single incised wavy lines. A similar high proportion of the jug sherds from Ridlands Farm was also found to be decorated (about half), but only about a quarter of these have incised motifs of wavy or straight lines, and there is no mention of combed

schemes. Of decorated jug body sherds from Ridlands, 76% bear applied finger-impressed strips and an example is illustrated (Ketteringham 1989, fig 8 no 46). Thus in this respect as well, the jugs from Titsey differ from those of Loampits and Ridlands and, most probably, Watts Hill 1. Of the very few decorated body sherds of jugs from Titsey, none appear to have had applied strips.

Jugs from all five sites, however, share a common, simple base profile, and examples with finger-impressed 'pie-crust' angles are consistently very rare. They are also unglazed.

There is little to be said about differences between the cooking pots of the various sites under discussion. Published examples are too few to compare rim form variabilities, and such an exercise would probably not lead to the gain of any useful knowledge. Prendergast devised a type series for the material from Watts Hill 1, but the examples of rim forms 1 to 5 that he illustrated do not seem to prove the coherence of the scheme (Prendergast 1974, figs 5 and 6 nos 12–31). The CPJ rim form type series of the Titsey material was intended to be loose enough to accommodate all but the most odd examples from those assemblages, and nearly all of the published examples of such rims from other Limpsfield ware sites seem capable of being classified according to the same criteria. At Titsey a 'tri-modal' distribution of the diameters of CPJs was able to be plotted, although in reality, it may be best to imagine a unimodal distribution with minor peaks towards the larger and smaller ends of the size range that are mostly due to the inclusion of other vessel form types such as skillets and storage jars. Although there are a few cooking pots that are smaller, their numbers rise markedly above 19cm and fall off, equally markedly, above 26cm. Russell noted the same sharp rise in the numbers of rim sherds at around 19cm at both Loampits Field and Ridlands Farm, and he suggested that this marked the division between two basic sizes of cooking pot (Russell 1989, 140 and 142). It could be suggested, however, that larger samples may have provided evidence of the same tri-modal or unimodal distribution with minor bumps, as was found at the two Titsey sites. It was calculated that 15% of the cooking pots from Loampits had been decorated with finger-impressed strips, and that these had been applied to most of the cooking pots from Ridlands (*ibid,* 142). At Titsey, however, only a rare few of the 'standard'-sized vessels (between 20 and 26cm rim diameter) were found to bear such strips. At both sites their use on vessels of the CPJ family of forms seems generally to have been restricted to storage jars. As with the jugs, therefore, there would appear to have been significant differences between the cooking pots of Titsey and those from Ridlands Farm and Loampits Field.

The dishes mentioned by Prendergast, Russell, and others are, for the most part, the same vessel form as those described as LFLBs (long-flanged large bowls) in the type series of Titsey. 62% of those from Loampits Field and 40% from Ridlands Farm are said to have been decorated along the top of the rim flange, and the most common scheme at both sites was of combed wavy lines (Russell 1989, 143). No example with this type of decoration was found amongst the Titsey material. The next most common motif at Ridlands, but one which was not present in the Loampits sample, was a single incised wavy line, and although a few LFLB rim sherds from both of the Titsey sites carried such a scheme, it is relatively uncommon. About a quarter of the 'dish' rims at Loampits, and about 16% of those from Ridlands are said to have been stabbed along the rim top (*ibid,* 141 and 143). The illustrated examples imply that this may sometimes have been accomplished by stabbing with a knife (*ibid,* fig 5 nos 21 and 24), and sometimes by pin-puncturing in the same manner as was commonplace at Titsey, especially the northern site (*ibid,* fig 5 no 26, fig 7 nos 26 and 27). Rim decoration on the LFLBs from the southern Titsey site is relatively uncommon, whatever modification had been employed, but at CLN, at least 50% of rim-flanges, and possibly many more, had been pin-punctured or stabbed. Two other common methods by which the LFLBs from Titsey had been modified was by the use of long finger-impressed or knife-cut scalloped facets on the internal rim angle, and an incised wavy line that ran around the inside of the body wall. Of the Group A sample of LFLB rims from CLS, 28% bear such scalloped facetting, and 16% of those from CLN, although a larger proportion was recognized in the dump material from that site. This method of modification is not mentioned by Prendergast or Russell, although at least one dish (LFLB) from Ridlands Farm would appear

to have had some short facets (Russell 1989, fig 7 no 27). Only one example of an LFLB from Titsey South was found to have an internal incised wavy line, but at the northern site such decoration was relatively common. Again, there is no mention of such a motif on any of the dishes described by Prendergast and Russell, although one example from Ridlands Farm is illustrated (*ibid*, fig 7 no 23).

It would be unwise to compare any of the lesser forms represented at Titsey with those found at other Limpsfield ware production sites, since too few examples are known. Some that are of special interest, however, should be noted. Bunghole pitchers or cisterns appear to have been occasionally made at the Titsey sites, as well as at Watts Hill 1 and Loampits Field. In addition, several vessels from Titsey, and at least one from the Moorhouse Sandpit kiln complex that lay immediately to the south (Prendergast 1974, fig 12 no 95), are distinctive in having had finger-impressed strips applied around the underside of their 'base' plates, and it is suggested that these may have been from the upper parts of fire covers. No similar base angles were identified at Ridlands Farm or Loampits Field, but at the latter site, a flat sherd with applied strips, and another that is punctured, were suggested as possible fragments from the tops of fire covers (Russell 1989, 141). There is another vessel from Ridlands that has finger-impressed strips over its base, but this is a frying pan, with a much smaller base diameter than those of firecovers (*ibid*, fig 8 no 38). The multiple applied strips on the pan run straight across the base and are, therefore, unlike those from Titsey or Moorhouse Sandpit. It is also important to note that some of the rare forms found at Titsey, such as small storage jars, lid-seated small storage jars, and the skeuomorphic jar, have not been identified at any of the other manufactories under discussion. Furthermore, none of the distinctive flue pipes of Titsey are recorded as having been found in any of the Limpsfield ware production sites.

Four glazed sherds were included in the sample from Watts Hill 1, and although one of these is reported as having glaze in the fracture, Prendergast declared that none were typical of Limpsfield ware in either colour, texture, or form (Prendergast 1974, 63). He also identified glaze on the flange of a bowl from Watts Hill 2, and said of the material from Vicars Haw that few glazed sherds were recovered (Prendergast 1973, 16). No glazed sherds are mentioned in the reports on the collections from Loampits Field and Ridlands Farm. The only other 'odd' sherds from Limpsfield ware sites that have been identified are a sherd with an external white slip from Scearn Bank and a 'pie-crust' base angle from the same site that Prendergast conjectured 'may be imports' (Prendergast 1974, 64). Several glazed sherds and a few others that are atypical of the Limpsfield ware tradition were also recovered from both of the Titsey sites, and it is suggested in the main body of the report that none of these need necessarily have been made on site. The presence of such sherds, and in similar small quantities as at some of the other Limpsfield production sites, must lend support to the theory that these had probably not been parts of experimental firings, but are more likely to have belonged to glazed or other fine jugs that had been made elsewhere. Some of the sherds from Titsey look similar to white slipped jugs from Earlswood and others are from Rouen-type derivative jugs that may have been made in the London area. Yet another is a rim sherd of a glazed jug with applied pads at the top of the handle spring, for which the closest affinity is with Mill Green ware. These, and other traditions represented amongst the glazed and otherwise 'odd' sherds from Titsey, are very different from that of the Limpsfield ware jugs. Their presence at Titsey and some of the other production sites close to the Chart is an interesting phenomenon. It is possible to suspect that the potters, who had supplied the burgeoning local peasantry with unglazed kitchen and tablewares during the 13th century, had been more fortunate, perhaps as farmer/potters, and had access to finer jugs that had been made elsewhere.

4.10 CONCLUSION

Since detailed descriptions of pottery from Limpsfield ware production sites were first published (Prendergast 1974), large quantities of Limpsfield-type pottery have been recovered from town and rural sites in East Surrey, and the excavations of two production sites have been published

with detailed accounts of their pottery assemblages (Ketteringham 1989). The scale of the excavations and the analyses of pottery from the two sites in Titsey, however, were much greater than for any previously known site, with the possible exception of Vicars Haw. These analyses have characterised fully the Titsey assemblages, and have made possible the discernment of all the differences that exist between the two sites. Because of Prendergast's and Russell's earlier work, it has also been possible to show how the Titsey material differs from that of Loampits Field and Ridlands Farm, and to a certain extent, Watts Hill 1. What remains uncertain, however, is what these differences mean. Work over the next twenty years must include more production sites, and not only on the Surrey side of the county boundary with Kent. In addition, it is to be hoped that local historians will continue their search for references to the industry until all the available documentary sources, again not just in Surrey, are exhausted. If more sites are discovered, however, there should be some pause for thought as to how, and even whether, they should be excavated, especially if they are not under threat. The Titsey excavations have shown the advantages of opening up large areas around kilns, which have allowed the discovery of other structures and demonstrated the relationships that exist between kiln, workshop, and waster heap(s). Small-scale sampling by excavation or surface collection can answer a few questions, such as the preferred fabric type and the general range of common forms that are present, but such work would not yield enough material with which usefully to compare the assemblages of Loampits Field, Ridlands Farm and Titsey North and South. There remains scope for work at some of the well-known sites such as Scearn Bank, Watts Hill 1 and Watts Hill 2, in that, although little if any survives of the waster heaps, this does not preclude excavations of their surrounding areas which may locate associated buried features. One outstanding contribution that would greatly assist our understanding of the Limpsfield ware industry, and of medieval ceramics studies in general, would be the publication of Hope-Taylor's post-war excavation of a kiln and workshop at Vicars Haw. This is often said to have been one of the best preserved examples of such a medieval structure ever to have been excavated in Britain. I am pleased to be able to conclude with the information that M Russell has almost completed an analysis of the pottery from the site (pers comm).

Chapter 5: The other finds and building materials, by Suzanne Huson

5.1 THE NORTHERN SITE

There are few finds of other materials from the site, in contrast to the large quantities of medieval pottery. It had been hoped during excavation that the finds retrieved would enhance our understanding of the associated activities around the kilns. Unfortunately so few finds allow for little such comment.

Attention should be drawn to the silver halfpenny of Henry III minted in 1248–50, from a layer around the kiln (235/255). However, two copper alloy coins, one from the same layer (235; the other is from 110), have been tentatively dated to the 17th century (B Cook pers comm). They are so badly worn though that in the absence of firmer dating they are probably best discounted.

Amongst the ironwork there are a few structural nails, horseshoes and other unidentifiable fragments. There are also a few tools (fig 31, Fe 1–3); the claw hammer (240) and two knives (235 and 240). The former is of a type usually associated with woodworking; the latter two would have been for personal use, usually carried around by their owner and probably of multi-purpose function (Cowgill *et al* 1987, 51 ff). Unfortunately the iron slag hearthbase is from the machining of the overburden layer (200) and as it may have been introduced on to the site it cannot be seen as indicating on-site smelting activities.

The fragments of quernstones (fig 31, St 2) recovered from soil layers within the site area (200, 205, 240) are an unusual find on kiln sites. Although they show signs of rotary wear, it is possible that they were used or re-used for functions associated with pottery workshops. Suggestions include the grinding of temper, as pivot stones for potters' wheels or packing in the kiln structure

itself. In addition two flat slabs of sandstone show signs of use but it is not possible to determine their function.

A little over 2.5kg of brick and tile was recovered, 0.8kg of which was residual Roman floor tile. The remainder is medieval roofing tile and daub and is possibly indicative of other structures associated with the kiln.

5.2 THE SOUTHERN SITE

The collection of finds from the southern site is even smaller than that from the northern area. There are only two iron implements (fig 31, Fe 13–14), a knife also of the type for personal use (504) and a possible hasp from a lock (504), both of medieval date. The remaining ironwork was mostly retrieved during machining and is of unknown function apart from fragments of a hinge (500) and a horseshoe (502). There is also a small fragment of quernstone that has seen use. Unfortunately there is little these finds can tell us about potters' activities in and around the kiln. The total of medieval brick, tile and daub amounted to just 1.6 kg, mostly coming from machining layers and so was possibly introduced on to the site.

5.3 CONSERVATION REPORT, by Adrian Tribe

5.3.1 *The conservation strategy*

The excavation of the medieval pottery kilns at Clacket Lane, Titsey, was not expected to produce a large quantity of artefacts, and indeed only a poor quality assemblage of 25 finds was passed to the conservator following fieldwork: 21 iron items, 3 coins (2 copper alloy, 1 silver), and 1 metallic ring of unknown composition. The strategy that was followed once the finds were received in the laboratory can be outlined thus:

1 All the finds were examined with the aid of a stereo microscope;
2 All the finds were x-radiographed;
3 All the finds were assessed in relation to the finds research objectives, to determine their information potential;
4 Selected finds only were subjected to conservation treatment and/or analysis;
5 All the finds were re-packaged to ensure their long-term preservation.

Details of this work are given in 5.3.2–5.3.5 on microfiche 6–7.

5.4 NORTHERN SITE CATALOGUE OF FINDS

See microfiche 8–13.

5.5 SOUTHERN SITE CATALOGUE OF FINDS

See microfiche 13–15.

Chapter 6: Discussion

The earliest evidence of human activity in the vicinity of the sites excavated at Clacket Lane is provided by a Neolithic axe recorded in the Sites and Monuments Record, prehistoric struck flints recovered from both main excavation areas, and features which may be of prehistoric date within the southern excavation area. The features, such as they were, consist of a small pit or posthole (598) which contained a rim sherd of Bronze Age date, and a gully (567) from which two sherds of prehistoric calcined flint-gritted pottery were recovered. Other features, gullies 230 and 231, ditch 555 and pits 564 and 593, could predate the main use of each excavation area in the medieval period, and the presence of 567 and 598 may support a tentative suggestion that some or all of these could be of similar date. There was no direct evidence from their excavation to support this, however, and their origin remains uncertain. The unstratified finds

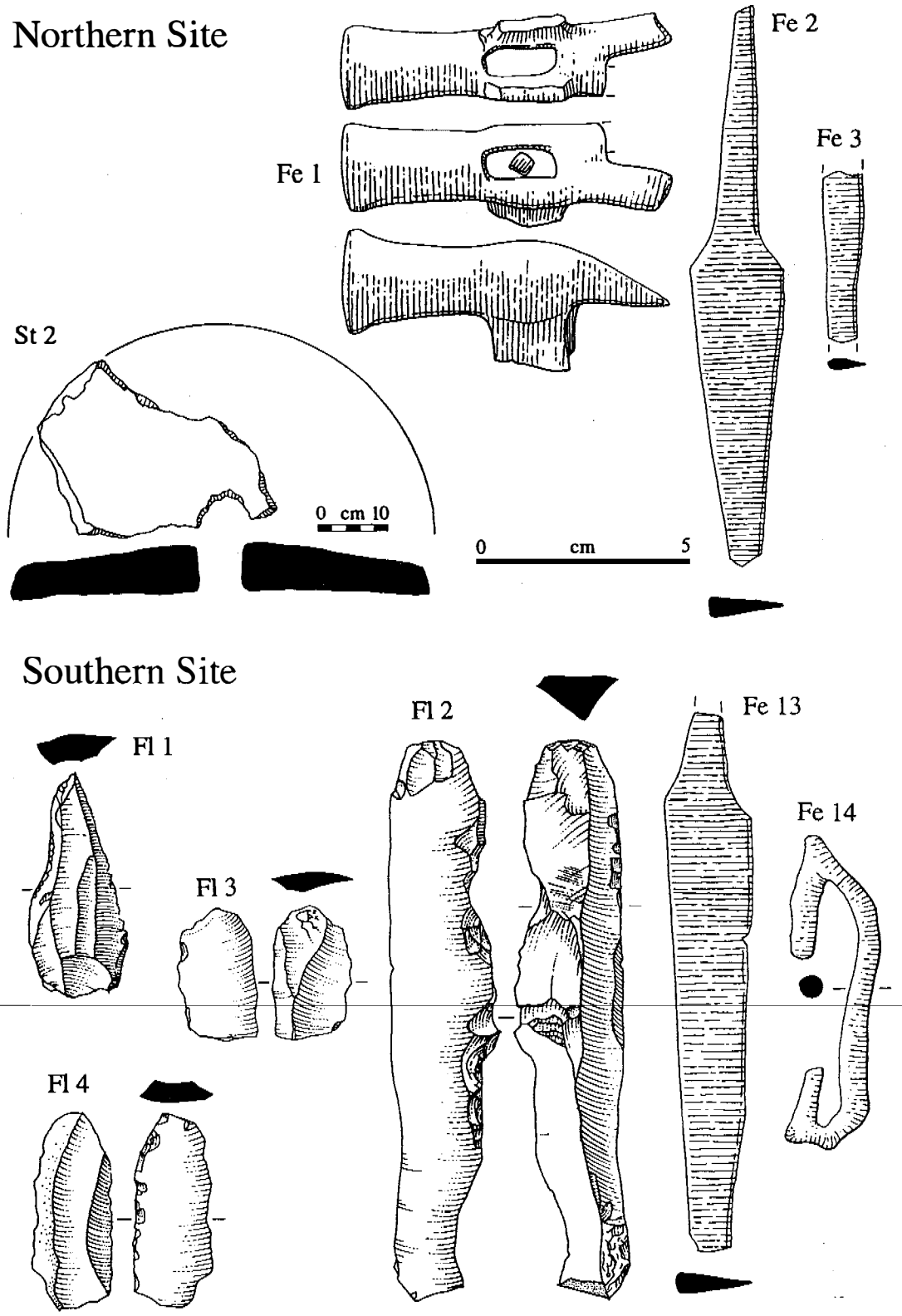

Fig 31 Clacket Lane, Titsey: the small finds from the northern site (above) and the southern site (below). Fe1 iron claw hammer (medieval); Fe2 iron knife (medieval); Fe3 iron knife-blade fragment (probably medieval); St2 Lower Greensand quernstone (medieval); Fl1 flint awl; Fl2 flint long blade; Fl3 flint blade fragment; Fl4 flint blade; Fe13 iron knife (medieval); Fe14 iron hasp (medieval). (1:1)

from within and around the excavations merely attest to the presence of prehistoric people in the locality over a broad period, probably ranging from the Neolithic to the Early Bronze Age, and the features are too few and too insecurely dated to support a more meaningful discussion.

The two sections excavated through the London–Lewes Roman road gave a good indication of the makeup of the road in this area despite the disturbance seen in the trench on the southern side of the M25. In addition, combined with work carried out prior to the construction of the motorway (Ketteringham 1975), the trenches confirm that the projected line of the road shown by the Ordnance Survey is correct to within a few metres at this point.

The sections excavated show an interesting variation in the construction technique and in the overall width of the road surface. In the northern trench two stony layers were discovered with the upper layer, 129, being much more densely packed with stones than 130 below, presumably representing the remains of the surface. In the southern trench, only one stony layer, 147, was present, surviving partly beneath the bank of redeposited material and partly beneath a buried soil layer; this layer was much closer in appearance to 129 than to 130 and lay directly above natural clay. Although it is not possible to draw firm conclusions from the examination of two limited areas, it seems likely that this variation was deliberate, and may have been the result of ground surface levelling prior to the preparation of the road surface (material may have been removed from one area and deposited, or built-up, in another). The sections, particularly that of the northern trench, also indicate that the road might have been built with a gently curving camber, though it is possible that subsequent erosion of the edges of the feature has caused this effect.

In the northern trench, the overall width of layer 129 was 4.8m while 130 survived to a width of 7m, being at most marginally cut by ditch 104. In the southern trench the overall width of layer 147 is 8m (this is unlikely to have been reduced much where cut by ditch 146). Whether this variation reflects some slight inconsistency on the part of the road builders or indicates that there has been some erosion of (or undetected disturbance to) the road edges remains uncertain. In the northern trench the maximum depth of layer 129 was 0.13m while the maximum depth of layer 130 was 0.19m. In the southern trench the maximum depth of layer 147 was 0.22m. In 1975 members of the Bourne Society Archaeological Group excavated a trench through the road prior to the construction of the M25 (Ketteringham 1975). They discovered a metalled surface of comparable overall width, and also noted the presence of a ditch which is presumably part of the same field boundary as one of those mentioned below. It was observed that the crown of the road measured 3.6m wide and consisted of hard-packed flints and large pebbles measuring up to 0.20m deep. Gravel aggers about 1.5m wide are recorded as lying on each side of this. A further section of the Road was observed during construction of a pipeline just north of the present site (Cotton & Poulton 1990, 161) and showed up to 0.35m thickness of road metalling and no trace of roadside ditches or aggers. During the recent excavation the road was found to consist of a layer of hard-packed flints and pebbles but aggers were not encountered.

When first revealed it was hoped that ditch 104 in the northern trench would be a feature associated with the road. However, although no finds were recovered from the excavated fill of this feature to help with its dating, its course followed exactly that of the field boundary shown on the Ordnance Survey map and there remains little doubt that this feature was once part of that relatively recent boundary, despite its parallel alignment to the Roman road. On the western side of the road surface, sufficient ground was exposed before the section collapse to show that no contemporary ditch had been present here.

The primary function attested to in the archaeological record of the two main excavation areas is that both were used for pottery production in the early medieval period. Early examination of the pottery recovered from these sites and knowledge of the kiln sites in the area (Prendergast 1973; Ketteringham 1989) confirmed that each site belonged to a tradition which produced coarseware pottery, of a type now known as Limpsfield ware. The nearest previously known production site lies to the west of Clacket Lane, close to Westwood Farm and within the Moorhouse Sand Pits approximately 500m to the south-east of the southern site discussed here (fig 1).

The excavation of the northern site was something of a disappointment as it leaves many questions unanswered and provides only a hazy impression of how the site was used. Of principal interest is the probable location of a pottery kiln which was indicated by layers of blackened soil containing numerous pottery sherds, and by small patches of burnt clay, some probably *in situ*. Unfortunately, the kiln was not of the type previously excavated at Ridlands Farm (Ketteringham 1989) or subsequently excavated on the southern site and did not survive as a structure dug into the ground. Instead, the remains consisted of various plough-disturbed lenses and layers which were sandwiched into a very shallow (less than 0.10m) depth of stratigraphy, were difficult to interpret (particularly in the extremely wet weather conditions) and, with the possible exception of a vague outline of stones which enclosed the patches of burnt clay, provided no structural information about the feature believed to have formerly existed. In the absence of clearly defined structural remains it could be argued that what was excavated here was merely a waster dump and that the location of the kiln was not discovered. This seems unlikely, however, as a waster dump would probably not have been separated from a kiln by a great distance, and sufficient area was examined either to reveal any such associated feature or to allow its position to be suggested by the discovery of increased quantities of debris in a certain direction. In addition, the material beneath 273 appears to have been associated with intense burning, and the presence of patches of burnt clay within this localized area suggests that this was most probably the site of that burning, even if much of the oxidized surface had subsequently been disturbed. With this considered, it seems most likely that the surviving layers represent the plough-damaged remains of both a kiln and its nearby waster dump. This suggestion is surely strengthened by the observation that the northern kiln area has a broad resemblance to the southern kiln area in its overall plan, with a burnt area of similar size to the kiln 542 (fig 9) and short lengths of gully at a similar distance away. It is possible that the kiln was formed by the construction of an oven built on the ground surface, possibly using turves, or alternatively that firing was achieved in something resembling little more than a bonfire. Surface construction might have been favoured because spring lines and the high water table made it impracticable to cut into the ground. To the north-west of the kiln a concentration of stones (239) associated with tile fragments and many sherds of pottery indicated the likely position of a small working area. Two small finds, a hammerhead and an iron knife blade, were found within this area, and part of a quern stone was found nearby — these finds support the interpretation of this part of the site as a working area; the quern stone may have been used for grinding temper for use in pottery production as no evidence of domestic settlement was found on site. It has been suggested that a small structure may have been present here and the occurrence of medieval roof tile fragments in 240 may indicate the presence of a tiled roof. It is arguable, perhaps, that the broken pieces of tile may have been brought in along with the stones to be used as flooring rubble but, assuming that this was not the case, a structure supporting the weight of such a roof would need to have been solidly built. Since only two postholes (242 and 248) were found in this area, it cannot have been an entirely post-built structure. It is possible that timber sill-beams at ground-level, which would leave no direct archaeological trace, were used as a base for the roof supports. Alternatively, construction might have been achieved using cob walls, as suggested by Poulton (1986, 30–31) for a burnt feature at Reigate. Evidence for this was not found during excavation, but such walling may not have left a visible impression on the ground surface. Either method would, however, have provided adequate support for a heavy roof and would explain the 'contained' appearance of 239 and 240. It is also possible that a crude workshed could have been erected using 242, 248, and making use of convenient trees, but this idea seems much less likely. The tile fragments recovered from 240 were generally small, and this may indicate that the postulated roof was dismantled at some stage so that the tiles could be reused elsewhere. In contrast, the probable site of a structure within the southern site area below did not enclose a comparable layer of stones and, even though the building plan is not entirely clear, was constructed using substantial postholes.

The remaining features on this site provide little useful information and warrant little further discussion here. Two may predate the kiln site or else are of uncertain date (230, 231), while

others are clearly contemporary with it. The precise function of most of these features remains uncertain, though perhaps of greatest interest are the localized concentrations of medieval pottery which were found either in shallow cuts or directly on the contemporary ground surface, and presumably represent *in-situ* primary discards of unusable vessels.

The southern excavation area might be considered of greater interest because its basic interpretation would seem to be more straightforward, with three main areas occupied by a pottery kiln, a small building, and a waster dump. Unlike on the northern site, the kiln was a distinct structure which had been partially cut into the natural clay. It consisted of an oval-shaped oven with a central spine of clay and stones which was used to create channels around the sides of the feature in order to allow air to circulate. Stoke holes were present to the north and south of the oven and these indicate double entry use of the feature. This remains the most likely interpretation, perhaps, though there was a slight suggestion from the internal stratigraphy (particularly with the possible use of stones to block the southern stoke hole) that this technique may not always have been employed and that originally perhaps only the southern stoke hole was present. Unfortunately, the cut for a modern field drain physically separated the northern stoke hole from the oven and made this less clear. The kiln may also have had some direct association with the gully 589 which flanked its eastern side, but what this association may have been remains uncertain. The overall shape of the kiln was similar to that excavated at Ridlands Farm (Ketteringham, 1989) in that both had flues surrounding a central platform and stoke holes at each end. However, the Ridlands Farm kiln was roughly twice as large as the kiln found here, and had more elaborate internal features with stone-lined sides and carefully constructed stone-lined flues.

To the east of the kiln a number of postholes were found which suggest the presence of a small building, presumably a workshed. The plan of the building is not entirely clear and was probably not elaborate, but seems to consist of a rough square of postholes (545, 553, 577, 578) with possibly a lean-to (using postholes 557 and 552) on the western side. The presence in this area of several small finds (an iron knife blade, an iron nail and another iron object) enhances the possibility that this was a working area. The building was surrounded by two gullies, 547 and 548, which were probably used to divert water away from its sides. The eastern end of 547 and the southern fork of 548 are more or less square with each other and with postholes 577 and 578 — this may indicate that the ground beyond this point was not used originally and that the northern fork of 548 was added later to enclose this area for some secondary function. The form of the walls, roof supports and roof of this building are all uncertain. The postholes are more numerous and definite than those for the suggested building on the north side but, otherwise, the suggestions advanced in that context for the form of the walls and roof supports are equally appropriate here. There were, however, in contrast to the northern side, very few roof tile fragments from contexts associated with the workshop area. This might be the result of more careful dismantling, but it seems much more probable that the roof was not tiled (at least with fired clay tiles). It is difficult to go much beyond this, but it is of some interest that the shape and area enclosed by gullies 547 and 548 are similar to those enclosed by the dry stone walls at Vicar's Haw, Limpsfield (Jope 1956, fig 266), and the suggested reconstruction of that site (fig 32) with an awning to cover the working area may be of relevance here.

To the east of the building an irregularly shaped area of dark soil containing numerous sherds of pottery marked the location of a waster dump. It is difficult to be sure of the original size of this feature as natural erosion and ploughing have no doubt had an effect on its appearance, but the planned extents of layers 541 and 560 (fig 8) probably give the best indication of this. The character of the layers removed here was similar to layers 502A and 502B which were removed from the kiln area and presumably also represent the remains of dumpings of waster material. These layers sealed the kiln itself, but this feature was found close to the southern limit of the spread of material which indicates that waster dumping took place mainly to the north of it and was subsequently spread over a greater area due to natural erosion and plough disturbance.

The remaining features excavated on this site consist of ditches, pits and postholes of medieval date, and features of post-medieval date which probably include the line of postholes running in

Fig 32 Clacket Lane, Titsey: reconstruction of a medieval potter's workshop excavated at Vicars' Haw, Limpsfield (after McCarthy & Brooks 1988)

an east–west direction across the northern part of the site. Although interesting in their own right the precise function of most of these features remains uncertain.

The results and conclusions of a detailed examination of the pottery from the excavations at Clacket Lane have been fully discussed above. This work, to summarize, has revealed that both sites produced a range of coarseware that was very similar in terms of fabric, colour and form.

In the absence of significant variations in the pottery produced, the most obvious difference between each site lies in the construction of the two kilns. The reasons for the difference are unknown but could reflect a difference in chronology (possibly associated with technological advances made by the pottery industry), personal preference (by different potters), or a different long-term objective for each feature. It is also possible that both kilns were of the same basic design, but that as the northern example was created entirely by building up from the existing ground surface, the evidence was subsequently lost. Allowing for the possibility that complete or partial cleaning out of a kiln may have taken place between firings, it was not possible to determine how many times or over how many years each kiln was used. Also, it was not possible to determine a precise date for either site, nor was it possible to place the two in chronological order on the basis of comparisons between the pottery recovered. Limpsfield potters are known from documentary evidence to have been operating from the mid-13th century to the late 14th century (Percy 1970) and examination of the pottery of both sites suggests that it belongs to a broad mid-13th century to late 13th or early 14th century date range. Beyond this, only the silver coin of Henry III recovered from the northern site and the archaeomagnetic date obtained from the southern site provide any direct dating evidence. The coin, minted in 1248–1250, was found close to the northern kiln and, assuming it to be associated with the first (or only) firing of this feature, provides a terminus post quem for it and the features contemporary with it. The

archaeomagnetic date for the southern kiln suggests that the last firing took place within the AD1230–1270 date span at the 68% confidence level and AD1200–1290 at the 95% confidence level. Taken together one could tentatively argue that, as it is perhaps unlikely that the coin was lost more than 25 years after it was minted, and, that as a mid-range archaeomagnetic date at either confidence level is roughly AD1250, the additional evidence indicates that both kilns may belong to the earlier half of the date range indicated by the pottery and were thus relatively early producers of Limpsfield ware.

Comparison with the other Limpsfield kiln sites does little to aid the problem of dating. Few of the known sites have been thoroughly or recently excavated and where excavation has taken place it has not always been to a high standard; there are few comprehensive reports available on Limpsfield ware. Only at Vicar's Haw (Jope 1956, 285) did attention extend beyond the kiln itself and this was rewarded by the discovery of what has been described as 'the most completely excavated of medieval kiln complexes' (Le Patourel 1968). Unfortunately it remains unpublished. More recently excavations have taken place at the Ridlands Farm and Loampit Field sites (Ketteringham 1989), and an archaeomagnetic date of AD1300–1330 at the 68% confidence level has been given for the kiln at Ridlands Farm. Nothing was recoverable of the construction of the kiln at Loampit Field so archaeomagnetic dating was not possible there. Comparison of the pottery from Ridlands Farm and Loampit Field suggested that some of the pottery produced at Loampit Field may have been later than that produced at Ridlands Farm. The previously known Limpsfield kilns show a variety in type and construction (Prendergast 1973) and this is reflected by the differences between the two kilns excavated at Clacket Lane. Some possible reasons for these differences have been suggested above and by Prendergast, and the conflicting nature of the various alternatives discounts a line of thought that would place the kilns in rough order on the basis of their simplicity or technology. Consequently, the chronological information available for the Limpsfield sites is at best vague and it remains impossible to establish a reliable sequence for them. The southern kiln of Titsey is most similar to those excavated at Vicar's Haw and at Ridlands Farm, though both were approximately twice its overall dimensions. Small kilns of different design have been discovered in the Limpsfield area previously (Prendergast 1973, 13–14), but, because of the uncertainties mentioned, it is not possible to attach any chronological or other significance to kiln size.

The problems of dating are widely discussed by Prendergast and are tied in with his comments on marketing and distribution. Ketteringham (1989) reports that more 'recent analysis by Streeten (1981a; 1982) and Russell (in Ketteringham 1989) has extended the distribution and confirmed some of those attributions made by Prendergast'; Jones (1991–2) comments on the problems of identification at occupation sites, on the occurrence of Limpsfield types in Reigate, and on other issues arising from his study of the pottery.

The excavations at Clacket Lane leave questions unanswered but enhance the information available on pottery production in the Limpsfield area, and provide an archaeomagnetic date for the last firing of the southern kiln. Further, the work demonstrates the potential advantage that excavation over a wider area has over investigations which concentrate on localized areas indicated by soil marks. The examination of such anomalies on their own may result in the discovery of a kiln or a waster dump, but the information gathered is divorced from that available if contemporary but less obvious features were present and were excavated nearby. Such features, as well as being important to the overall interpretation, are a potential source of information (possibly in the form of stray finds) which might have a significant bearing on the date of the site in question. Until a more precise chronology for the Limpsfield sites is achieved their potential as sources of local and regional information cannot be fully realized and the value of Limpsfield ware when discovered away from the production centres cannot be fully exploited.

A final point of interest arising from the excavations at Clacket Lane is the observation that the known sites are scattered along each side of the London–Lewes Roman road which passes through this area (fig 1); it is possible to speculate that this is not purely due to chance. In the sectioning trenches through the road that are described above it was observed that, ignoring the recently deposited clay banks, the metalled surface of the road lay directly beneath a thin cover

of topsoil. It was not possible to determine how long this feature might have been buried, but looking at the distribution of the kiln sites, it seems plausible that the road might have survived as a line of communication into the medieval period and if so it may have served these production sites. It should be noted that this idea is offered most tentatively as it is not supported by direct archaeological evidence for use of the road in the medieval period. Further, Prendergast shows a sunken trackway on a plan locating the Vicar's Haw and Scearn Bank sites (Prendergast 1973, 11–12), and Ketteringham notes the presence of a broad 'hollow way' which ran close to the eastern side of the kiln at Ridlands Farm and suggests that this may have linked other kilns in the area (Ketteringham, 1989, 127). The sunken trackway and hollow way may be the same feature (fig 1), and may well have linked the kilns in the Chart area of Limpsfield as suggested.

APPENDIX 1

Archaeomagnetic dating of the Southern kiln, by A J Clark

Measurement Ref: AJC-105

The kiln was discovered during archaeological work preliminary to the construction of the M25 service area, just east of the boundary of Titsey Wood which follows the line of the London–Lewes Roman road.

The kiln had been badly damaged, and the only convincingly *in-situ* clay lining was on the west wall and the west side of the central elongated pedestal, from which it was possible to obtain 15 samples by the disc method (fig 33). In the absence of any appearance of the sun, orientations were obtained by the use of the theodolite magnetic compass.

Laboratory measurements showed the material to be strongly and stably magnetized. The grouping of results was improved by removal of viscous components at a peak alternating field of 15 millitesla, but they remained quite scattered, presumably because of slight movement of the material since firing. This could have been due to the plastic clay natural into which the kiln was cut. As the mean value overlapped a part of the curve where the main change was in declination, it was possible to sharpen the result by basing the dating on the declination values only, assuming an inclination of about 57.5°. All samples were used except the most southerly from the pedestal, which gave an outlying value indicating that it had been disturbed.

Mean direction of thermoremanent magnetization (14 samples):

Dec = 10.01°E; Inc = 57.50° (estimated); alpha-95 = 3.33°

Last firing within the following date span:

AD 1230–1270 at the 68% confidence level
AD 1200–1290 at the 95% confidence level

APPENDIX 2

Charred plant remains from a medieval pottery kiln, by Mark Robinson

Four soil samples from the Southern kiln, Clacket Lane, Titsey, Surrey were floated and sieved by the Surrey County Archaeological Unit. The samples were from the following contexts:

614 layer within kiln
617 upper part of the north stoke hole
618 fill of south stoke hole
627 lower part of the north stoke hole

The flots and residues were sorted at the Environmental Archaeology Laboratory in the University Museum, Oxford, and the charred plant remains identified. The charcoal is listed by weight in table 3. The oak in samples 614, 617 and 618 was mostly slow-growing old wood with tyloses. Most of the oak in 627 and a single piece from 618 was roundwood with a diameter of 10–15mm and 12–20 rings. The beech was all old wood. The *Pomoideae* from 617 was 18mm in diameter and had 13 rings, the *Pomoideae* from 627 was 11mm in diameter and had 9 rings. The *Corylaceae* or *Betulaceae* was such a small fragment that it was not possible to gain an indication of its age at felling. The indeterminate charcoal was mostly probably oak and beech but there was a significant presence of bark. Sample 617 also contained a single grain of oats (*Avena* sp.) and two indeterminate cereal grains. Sample 618 also contained two grains of free-threshing wheat (*Triticum* sp.) and a hazel nut shell fragment (*Corylus avellana*).

The charred plant material was almost entirely wood used to fuel the kiln. Even allowing for shrinkage, the oak charcoal of roundwood seems to have been rather slow growing for coppice production and much of the wood was from mature trees. The usual coppice species, such as hazel, were not significantly present. It is most likely that the kiln was burning branchwood that was a by-product of timber production.

Fig 33 Clacket Lane, Titsey: the southern kiln during sampling, looking south-south-east

TABLE 3 Clacket Lane, Titsey: the charcoal samples listed by weight

	weight in grams			
CONTEXT	614	617	618	627
TAXA				
Quercus (oak)	2.7	1.1	2.5	16.7
Fagus (beech)		2.4	1.3	2.7
Pomoideae (hawthorn, apple etc)		1.2		0.9
?Corylaceae or Betulaceae (hazel, birch etc)		0.1		–
Indeterminate	1.4	6.6	11.9	7.4
Approx sample volume (litres)	3–5	5–8	12–15	18–20

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