Chapter 19

Lithic artefacts: Phase 7, the syncline infill

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INTRODUCTION

Phase 7 of the site sequence is represented by the series of deposits that conformably overlie the Phase 6 clay. These deposits (see Chapter 4 for a full description and interpretation) are absent in the southern part of the site, where the Phase 6 clay is unconformably truncated by the Phase 8 gravel. However, in the central part of the site the surface of the Phase 6 clay dips northward and at the same time takes on a marked synclinal structure, the 'skateboard ramp', as seen in Trench B (Fig. 19.1a). The hollow of the syncline is filled with a sequence of, from the base: a thin intermittent gravel layer (40164); a yellowish-brown sand/silt body with fine clay-silt laminations (40166); a contorted, chaotically structured clayey gravel (40167) and a slightly gravelly clay (40043). The upper parts of this sequence (40167 and 40043) overlap the western side of the synclinal basin and also extend across the west side of the northern half of the site (Fig. 19.1b). Here, context 40042 was recognised and can be regarded as the lateral equivalent of context 40167. These sediments are thought to mostly be colluvial/slopewash deposits, originating from higher ground to the west.

PROVENANCE AND QUANTIFICATION

In total, 82 flint artefacts were recovered from the Phase 7 deposits (Table 19.1). No hand-excavation took place in this part of the sequence. The deposits were machined away, initially in the area between Trenches B and C to allow investigation of the Phase 6 clay and the elephant area, and subsequently as part of the general ground reduction north of Trench B. As described previously (Chapter 3), when it became clear that there were artefacts in the Phase 7 synclinal infill in Trench B, a 500L bulk sample <40197> was taken from the gravel-rich context 40167 in which they were being found. This was sieved for artefacts on site through a 12mm mesh, which led to the recovery of 19 artefacts. The remainder of the Phase 7 collection was either recovered during the rest of the machining between Trenches B and C, or during the later Watching Brief on the ground reduction north of Trench B. Thus, apart from the assemblage from the bulk sample <40197>, the Phase 7 collection is probably biased towards larger artefacts. Those that were found are liable to have sustained some damage from the mechanical excavator.

ASSEMBLAGE INTEGRITY: CONDITION, STAINING AND PATINATION

The first question to consider for the Phase 7 material is whether there is meaningful stratigraphic integrity between the assemblages from the different contexts. The basal context in the sequence (40164) produced just one artefact, which was a medium-sized chunky flake, dark-grey stained and moderately abraded, suggesting a history of derivation and reworking. The overlying context (40166), which was finer-grained, produced six artefacts, four of them flakes and two of them flake-tools (these latter described in more typological detail below).

Table 19.1 Phase 7, lithic artefacts from the syncline infill: provenance and stratigraphic phasing (excluding natural pieces)

Phase	*Context*	*Artefacts (n)*	*Context notes*
7	40043	4	Greenish-grey, variably gravelly silty clay towards top of syncline infill sequence
	40167	62	Non-fluvial gravel in Trench B, truncated by contexts 40098 and 40048, overlying context 40166; source of bulk sample <40197>, sieved on site for lithic artefacts (Fig. 19.1a)
	40042	9	Gravelly bed between Trenches B and C, see W-facing section 40015 (Fig. 19.1b)
	40166	6	Sand/silt infilling main centre of syncline (Fig. 19.1a)
	40164	1	Gravel bed right at base of syncline infill group (Fig. 19.1a)
Total		82	

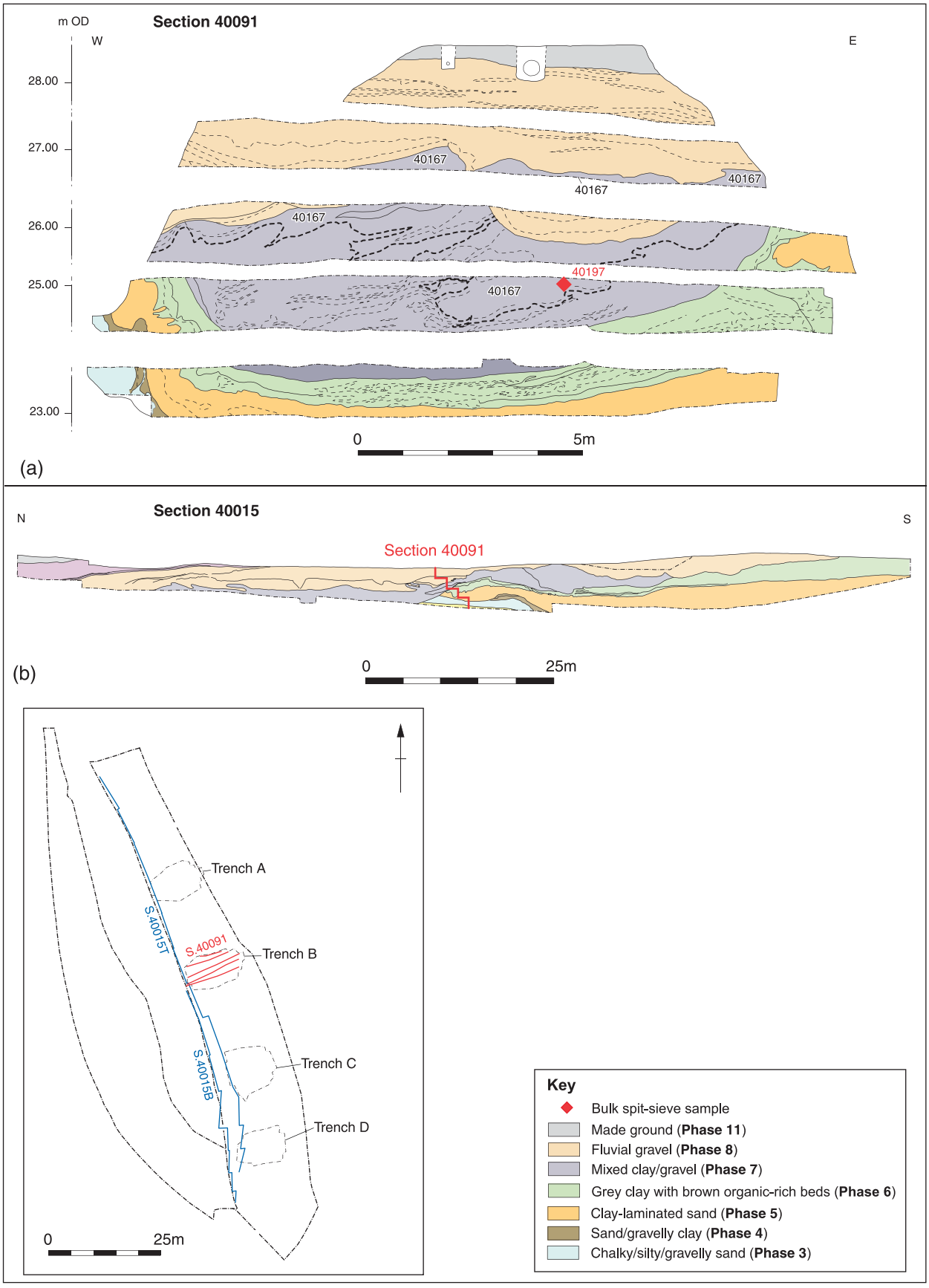

Figure 19.1 Stratigraphic distribution of Phase 7 sediments: (a) Section 40091, Trench B south-facing; (b) Section 40015, main west-facing section

Both of the flake-tools were moderately abraded; one of them is in places quite strongly patinated and the other is strongly stained ochre. Of the four pieces of debitage from context 40166, two are in mint condition and two are moderately abraded; all are very lightly stained with a faint greenish-brown superimposed upon the natural grey of the flint.

The majority of the Phase 7 collection (n=71) comes from 40167 and 40042. In this part of the collection, only eight artefacts (11%) are in mint condition; 24 of them (34%) are in fresh condition; 31 (44%) are in slightly-moderately abraded condition; and eight (11%) are in very abraded condition. Furthermore, they exhibit a wide range of patination and staining, with some being strongly white patinated, some moderately blue-white patinated, and some unpatinated. Likewise, there is the full gamut of staining, from none to deep ochre. The final element of the Phase 7 collection came from 40043, which can be regarded as a gravel-free bed within the upper part of context 40167(=40142). This produced just four artefacts; however they were all at least moderately abraded and one of them was in the extremely abraded category, a rarity in the site's collection.

Overall, the Phase 7 collection shows little sign that its context provenance reflects site formation integrity, especially considering the fact that that all of the contexts are interpreted as colluvial/slopewash deposits originating from the high ground to the west. The impression is given of a mixed assemblage that has been caught up from general artefactual debris in the landscape to the west, some parts of which have suffered more abrasion than others during the deposition process. The fact that the Phase 7 deposits do not erosionally truncate the Phase 6 deposits suggests the Phase 7 collection is not directly derived from the latter. Rather, it is suggested here that they share a common source, with artefacts in the Phase 7 deposits originating from the artefact-rich landscape contemporary with Phase 6 to the west of the site. Therefore there seems little rationale for sub-dividing the Phase 7 assemblage into separate horizons based on their precise stratigraphic context. Consequently it is treated here as a single entity, representing a sample of lithic material culture broadly contemporary with the assemblages from Phase 6, but derived from a slightly wider landscape of occupation to the west of the site.

LITHIC ANALYSIS

Introduction and technological overview

As a whole, the technological and typological profile of the Phase 7 collection (Table 19.2; Fig. 19.2) is indistinguishable from the material from Phase 6. The relative frequency of different technological categories is also broadly similar, with the one exception that there is a much-reduced recovery of irregular waste. This probably reflects that the Phase 6 assemblage was recovered by hand-excavation in fine clay sediment, with every flint clast being carefully scrutinised for signs of working and with recovery taking place if there was any doubt. This led to the recovery of large quantities of irregular waste, much of it exhibiting only frost-fractures, but still interpreted as having been caused by hominin knapping (cf. Chapter 15). In contrast, during machining of the predominantly gravelly Phase 7 deposits, only artefacts that were clearly distinguishable as knapped were spotted and recovered, leading to a reduced recovery of irregular waste. More details of the different technological elements of the Phase 7 collection are given below.

Percussor

The collection included one percussor, Δ.40331 from context 40167, and it was a very fine example (Fig. 19.3a). It consisted of the rounded end of a flattened cylindrical flint nodule, and weighed 560g, heavier than most of the percussors identified at the site. Firstly, there was evidence of at least one heavy impact on the more sharply rounded tip of the piece, which had caused a substantial chip to flake off, ruining the potential of this part of the piece as a percussor. Secondly, on the central high point of the more smoothly rounded dome on the side of the piece, there was a tightly focused area of

Table 19.2 Phase 7 lithics: quantities in artefact categories

	5 - Percussor	*10 - Tested nodule*	*20 - Core*	*30 - Core-on-flake*	*40 - Core-tools*	*50 - Handaxe-on-flake*	*60s - Fl-tools*	*80 - Fl-flakes*	*90 - Flakes*	*100 - Irreg. waste*	*110 - Chips*	*Sub-total (n)*
Abraded	-	1	3	-	-	-	3	1	35	5	-	48
%	-	2.1	6.3	-	-	-	6.3	2.1	72.9	10.4	-	
Fresh	1	-	7	-	-	-	3	2	12	9	-	34
%	2.9	-	20.6	-	-	-	8.8	5.9	35.3	26.5	-	
All	1	1	10	-	-	-	6	3	47	14	-	82
%	1.2	1.2	12.2	-	-	-	7.3	3.7	57.3	17.1	-	

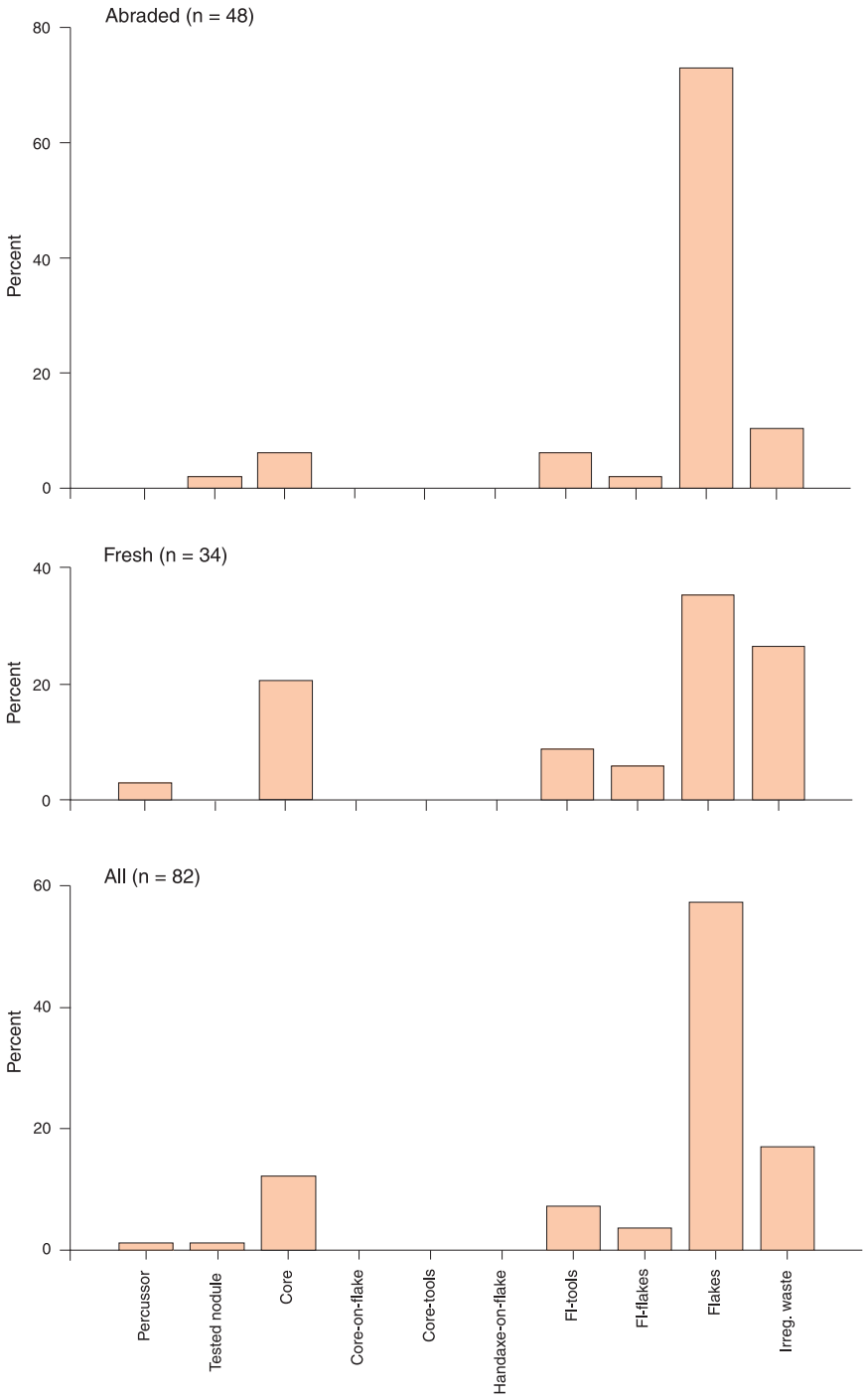

Figure 19.2 Phase 7 artefacts, histogram of technological categories

marks from repeated percussion blows that had completely removed the cortex, leaving a prominent central Hertzian cone. A few small flakes had also been removed from the piece, possibly to facilitate its handling as a percussor.

Cores

Ten cores were found in the Phase 7 deposits, three of them in moderately abraded condition, and the other seven in mint or fresh condition, mostly the latter (Table 19.3). Their dimensions and other key characteristics such as the number of negative flake scars and the remaining amount of cortex are all described in the summary table. The range of flaking approaches represented was indistinguishable from Phase 6, with a combination of generally migrating platforms leading to globular core end-products, and a stronger focus on either one face or a single platform leading to flatter or more angular core products. Four of the cores are shown in the photographic plate (Fig. 19.3b-e): Δ.50023, an angular core that is strongly white-patinated (Fig. 19.3b); Δ.40187, another angular core, greyish-white stained/patinated showing the internal node of dark glossy flint colloquially known as the 'Devil's Eye' (Fig. 19.3c); Δ.40213, a flat core from which flakes have been prefer-

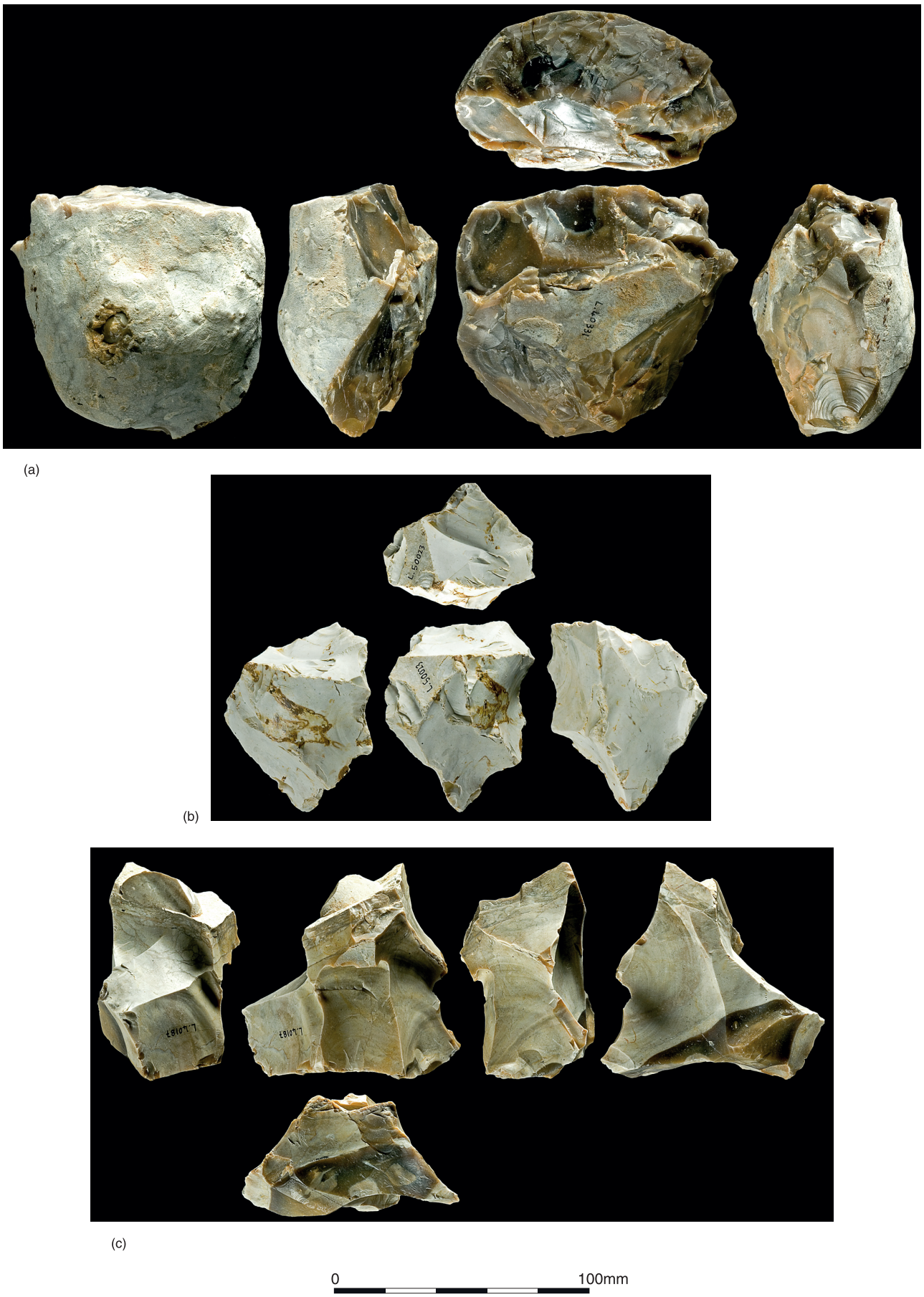

Figure 19.3 Selected Phase 7 artefacts: (a) percussor Δ.40331; (b) core Δ.50023; (c) core Δ.40187

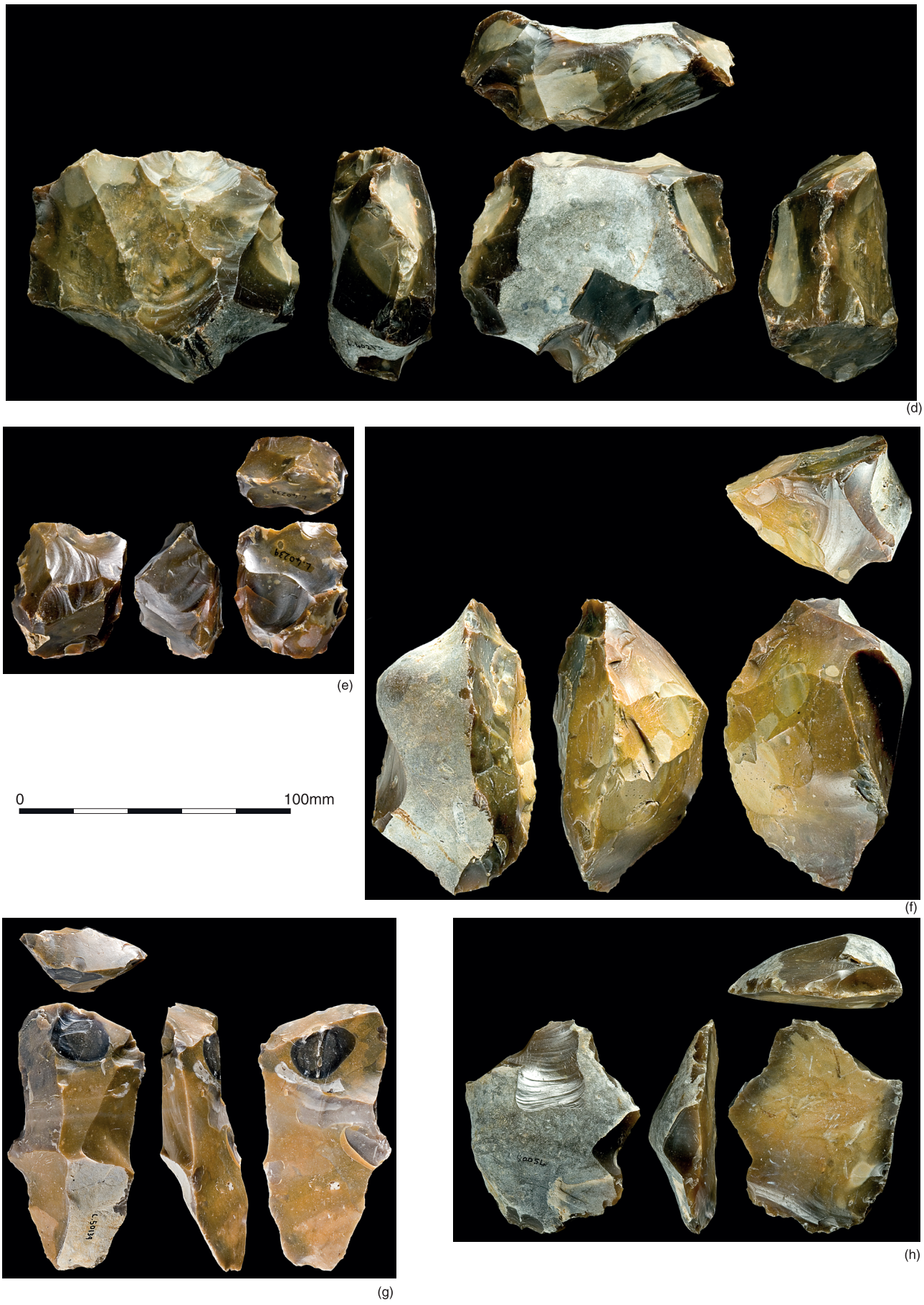

Figure 19.3 *(continued)* Selected Phase 7 artefacts: (d) core Δ.40213; (e) core Δ.40239; (f) miscellaneous flake-tool Δ.40212; (g) flake-knife Δ.50139; (h) single-notch flake-tool Δ.50054

Table 19.3 Phase 7 lithics: cores

Context	*Find ID*	*Cnd*	*%Cx*	*DSC*	*ML*	*WtG*	*Notes*
40043	Δ.50023	3	2	9	73	144	Angular core; strongly white-patinated [Fig. 19.3b]
40167	Δ.40187	1	1	14	84	235	Angular lump of flint with 'Devil's Eye'; greyish-white stained/patinated [Fig. 19.3c]
	Δ.40213	3	4	13	92	345	Flakes preferentially removed from one face of a flat nodule, using platforms around its perimeter [Fig. 19.3d]
	Δ.40215	2	1	8	84	325	Globular lump; orange-brown stained
	Δ.40238	3	2	7	61	80	Small angular lump
	Δ.40239	2	0	13	51	65	Small remnant globular lump of what was once probably a large core; this piece is the glossy 'Devil's Eye', which normally is surrounded by a mass of more opaque flint [Fig. 19.3e]
	Δ.41649	2	5	8	65	132	Small angular lump, with fair amount cortex remaining
	Δ.50142	2	1	8	102	405	Piece of irregular waste, single platform flaked around perimeter
	Δ.50149	2	3	9	104	265	Slightly flattened lump, alternating platform flaking around part of its perimeter
	Δ.50159	2	0	9	95	217	Angular lump, orange-brown stained

entially removed from one face, using platforms created around the perimeter, which slightly presages later, more organised Levalloisian and radial Mousterian approaches (Fig. 19.3d); and Δ.40239, a small heavily-reduced lump that is the remnant 'Devil's Eye' central node of what was probably originally a quite substantial flint nodule (Fig. 19.3e).

Flake-tools and flake-flakes

Six flake-tools were found in the Phase 7 assemblage, three of them in abraded condition, and three of them in mint or fresh condition (Table 19.4). It is hard to generalise from such a small assemblage as to whether the overall range of tool-types matches the larger Phase 6 flake-tool collection, but none of them would have been out of place in Phase 6, particularly the single-notched flake-tool Δ.50054 and the flake-knife Δ.50139. The relatively heavy abrasion on one of the pieces (Δ.50183) has obscured the possible signs of secondary trimming; and the presumed secondary flake on another (Δ.50145) seems to serve no useful purpose, being relatively flat along the ventral surface, and may be the residual result of a historic fracture-plane from a failed earlier attempt to remove a flake. Key metrical data and other technological attributes are given in the summary table, and three of the flake-tools are shown in the photographic plate: Δ.40212, a naturally segmental lump of irregular waste, which has had its convex (cutting?) edge straightened and slightly sharpened by unifacial trimming (Fig. 19.3f); Δ.50139, a flake which has had secondary flakes removed along one side from both ventral and dorsal surfaces, leaving a straight, sharp edge on the opposite side, which has some tiny invasive

Table 19.4 Phase 7 lithics: flake-tools

Context	*Flake-tool type*	*Find ID*	*Cnd*	*DSC*		*ML*	*WtG*	*Notes*
				%Cx				
40167	66 - Misc	Δ.40212	2	8	2	95	258	Segmental lump of irregular waste, with edge slightly straightened by unifacial trimming [Fig. 19.3f]
	62 - Knife	Δ.50139	1	3	3	84	99	Machine-damaged and stained faint greenish/brownish-grey; elongated piece with at least three secondary removals down one side (off both ventral and dorsal surfaces) opposite sharp straight edge that has faint macro use-wear [Fig. 19.3g]
40042	63 - Single notch	Δ.50054	2	8	1	75	116	Medium-size flake with clear single notch [Fig. 19.3h]
	62 - Knife?	Δ.50183	4	0	2	60	51	Blue-white patinated, with straight edge opposed to blunt cortical back; distal end looks like trimmed to facilitate handling as a knife
40166	66 - Misc?	Δ.50145	3	7	1	95	311	Large, thick flake, orange-brown stained, with one removal off ventral surface, possibly due to fracture plane from previous knapping rather than a deliberate secondary removal
	66 - Misc	Δ.50167	3	2	7	86	252	Partly blue-white patinated; thick flake with at least one notch, and possibly two, on one side, and also possibly trimmed at distal end

scaling at one end that looks like macro use-wear (Fig. 19.3g); and Δ.50054, a medium-size flake with a clear single notch (Fig. 19.3h).

In addition to the flake tools, three flake-flakes from secondary working of debitage were recovered, all from context 40167. Two of these (Δ.40231 and Δ.40294) were recovered from the sieved bulk-sample <40197>, and the third (Δ.50146) (a much larger piece of a brutally truncated flake) was recovered from the general monitoring of machine excavation. Smaller debitage such as secondary flake-flakes were clearly under-represented in the assemblage, due to the fact that it mostly results from monitoring of machine excavation rather than sieving or hand-excavation. Nonetheless, the fact that three were found suggests that they might have been relatively abundant.

Debitage

Finally, the bulk of the assemblage from Phase 7 consisted of flakes, of which there were 47 in total, about 60% of them in abraded condition (Table 19.2). Some quantitative statistics were calculated for the unbroken ones (Table 19.5) to investigate how the fresh and abraded elements compared, and how they compared with the Phase 6.1 and 6.2 flake assemblages. It was not possible to meaningfully compare flake sizes between different horizons within the Phase 7 sequence, as there were so few flakes in contexts other than 40167/40042.

The fresh flakes were slightly smaller than the abraded ones, although not statistically significantly, with average dimensions of *c* 53 x 43 x 18mm, and an average weight of *c* 70g, as against *c* 62 x 50 x 20mm, and an average weight of *c* 100g. There was, however, a more significant contrast with the overall data from assemblages 6.1 and 6.2 (see Table 18.18), where the respective figures are *c* 40 x 33 x 13mm, and an average weight of 28g. This probably reflects the combination of firstly, the more complete recognition and recovery of smaller debitage during the hand-excavation of the fine-grained Phase 6 clay; and secondly, the formation process of context 40167, from which most of the Phase 7 artefacts were recovered. This is predominantly gravel-rich with frequent flint clasts of small-cobble size, and so

Table 19.5 Phase 7 lithics: size statistics for flakes (only whole flakes included)

		Fresh (n=8)				*Abraded (n=30)*				*All (n=38)*			
Context		*ML*	*MW*	*MT*	*WtG*	*ML*	*MW*	*MT*	*WtG*	*ML*	*MW*	*MT*	*WtG*
40043	Max	-	-	-	-	100	65	24	206	100	65	24	206
(n=2, all	Q4/Q3	-	-	-	-	89.5	56.25	21	159.75	89.5	56.25	21	159.75
abraded)	Mean	-	-	-	-	79.00	47.50	18.00	113.50	79.00	47.50	18.00	113.50
	Q2/Q1	-	-	-	-	68.5	38.75	15	67.25	68.5	38.75	15	67.25
	Min	-	-	-	-	58	30	12	21	58	30	12	21
	SD pop	-	-	-	-	21.00	17.50	6.00	92.50	21.00	17.50	6.00	92.50
40042,	Max	100	75	37	252	103	90	45	466	103	90	45	466
40167	Q4/Q3	48.25	47.25	14.25	43	75	66	25	137	75	64	25	120.5
(n=31, 6	Mean	45.67	38.17	15.17	57.67	60.48	49.56	20.20	99.16	57.61	47.35	19.23	91.13
of them	Q2/Q1	31.25	23.25	9	9	41	29	12	30	38.5	28	11	17
fresh)	Min	16	16	7	4	22	15	4	4	16	15	4	4
	SD pop	26.51	19.91	10.12	88.26	21.75	20.57	10.60	103.91	23.49	20.93	10.69	102.39
40166	Max	81	68	29	158	96	80	24	228	96	80	29	228
(n=4, 2	Q4/Q3	77.5	62.8	27.3	136.8	82.0	67.5	20.5	174.5	84.8	71.0	25.3	175.5
of them	Mean	74.0	57.5	25.5	115.5	68.0	55.0	17.0	121.0	71.0	56.3	21.3	118.3
fresh)	Q2/Q1	70.5	52.3	23.8	94.3	54.0	42.5	13.5	67.5	60.3	42.8	19.0	58.3
	Min	67	47	22	73	40	30	10	14	40	30	10	14
	SD pop	7.0	10.5	3.5	42.5	28.0	25.0	7.0	107.0	20.6	19.2	7.0	81.5
40164	Max	-	-	-	-	62	66	37	126	62	66	37	126
(n=1,	Q4/Q3	-	-	-	-	-	-	-	-	-	-	-	-
abraded)	Mean	-	-	-	-	62	66	37	126	62	66	37	126
	Q2/Q1	-	-	-	-	-	-	-	-	-	-	-	-
	Min	-	-	-	-	62	66	37	126	62	66	37	126
	SD pop	-	-	-	-	-	-	-	-	-	-	-	-
All	Max	100	75	37	252	103	90	45	466	103	90	45	466
	Q4/Q3	70.5	55.3	23.8	94.3	78.0	66.0	25.0	160.3	78.0	66.0	25.0	152.8
	Mean	52.75	43.00	17.75	72.13	62.27	50.33	20.40	102.47	60.26	48.79	19.84	96.08
	Q2/Q1	33.8	27.8	11.0	11.0	42.5	30.0	12.0	23.3	41.0	30.0	12.0	18.3
	Min	16	16	7	4	22	15	4	4	16	15	4	4
	SD pop	26.27	19.87	10.00	83.19	22.35	20.62	10.47	101.93	23.55	20.69	10.43	99.06

is likely to have crushed or otherwise dispersed many of the smaller and more lighter weight flint flakes that would probably originally have been present in the source area to the west of the site.

Technologically, none of the flakes exhibit any diagnostic features that reflect any flaking strategy other than those reflected in the cores and known to have occurred in Phase 6. These are, firstly, unstructured migrating platforms, episodes when several flakes are removed in sequence from the same platform before moving onto another and, secondly, episodes of platform alternation, using the scar of one removal as the platform for the next. When features relating to the percussor were preserved (which was quite often), they were always indicative of hard-hammer percussion; there was no evidence of soft-hammer use.

DISCUSSION AND CONCLUSIONS

Although the Phase 7 assemblage is small within the context of the overall artefact collection from the site, and particularly in relation to the substantial collection from Phase 6, it is nonetheless informative in several areas. Firstly, based on the interpretation that the Phase 7 sediments were laid down by colluvial/slopewash processes, and therefore that the artefacts themselves were gathered from an area of probably at least several hectares to the west of the site, they provide a sample of lithic material culture from a wider space/time envelope than the much more abundant material from assemblages 6.1 and 6.2. Nonetheless, the Phase 7 assemblage is indistinguishable technologically and technologically, suggesting a stable lithic technological adaptation over a sustained period of time. Furthermore, although gathered from a wider area and probably representing a more extended time envelope, there is still not a hint of either a bifacial core-tool, or of debitage representing bifacial shaping and/or thinning characteristic of handaxe manufacture.

Secondly, the Phase 7 assemblage contains the same technological categories in similar proportions to assemblages 6.1 and 6.2, apart from debitage, explicable as due to contrasts in site formation processes and excavation methodology (discussed above, Chapter 19). This suggests that there is a minimum of organisational structure to the *chaîne opératoire* in the part of the landscape represented by the catchment area of the assemblage, and that all stages of production are equally likely to have occurred at any point in the sampled landscape.

Thirdly, even though stratigraphically higher, the Phase 7 assemblage is thought to represent hominin lithic manufacturing activity broadly contemporary with the Phase 6 assemblage. This is an instructive case-study which demonstrates that stratigraphically higher does not necessarily mean chronologically later. A similar situation pertains, for instance, at Boxgrove, where the lithic collection from the thick solifluction gravels (unit 11) that ultimately buried the occupation horizon of unit 4c is probably broadly contemporary with the lithic evidence from this horizon, although derived from a much wider downland landscape above the cliff-line to the north (Roberts and Parfitt 1999).

Fourthly and finally, the fact that a colluvial/slopewash deposit can gather material from the wider landscape, and through the coincidence of the survival of parts of the sedimentary archive and its present-day excavation provide a sample of material in a specific location and at a particular altitudinal level (here, between 24 and 27m OD), does not mean that this height has any significance for integrating the remains into a fluvial terrace chrono-stratigraphic framework. This is despite the fact that these remains were sealed beneath fluvial gravels and could well have been regarded as part of the same fluvial sequence without the wide sedimentary exposures and intensive investigations carried out at the site. This point will be returned to in the concluding discussion (Chapter 22). It is germane to a discussion of the possible post-Hoxnian cyclical recurrence of similar core/flake dominated industries attributed to the Clactonian in MIS 9 at (perhaps), Purfleet (Schreve *et al.* 2002), and in MIS 10/9 (perhaps) at Globe Pit, Little Thurrock (Wymer 1968, 314-317; Bridgland and Harding 1993; Bridgland 1994, 228-236).