

# A collection of lithic debitage from the Lower Greensand at Holmbury Hill

JAMES BARFOOT and JONATHAN COTTON

*A small lithic collection from the Lower Greensand at Holmbury Hill is examined, and found to contain a chronologically mixed inventory of artefact types. The scrupulous nature of the collecting, in which every piece of debitage was retained, makes it a useful addition to our knowledge of the area, though further advances are only likely to come about through the adoption of still more rigorous fieldwalking programmes of the type now being contemplated in this part of southern central Surrey. The collection, which includes four artefacts of Portland-type chert, will be deposited at Castle Arch, Guildford, with the exception of the barbed-and-tanged arrowhead (fig 3, no 15), the ground axe blade (fig 4, no 19) and three of the scrapers (fig 4, no 24; fig 5, nos 29 and 32), which have all been retained by the first writer.*

## Introduction

One of the first aims of the Surrey Lithic Tool Research Group, which was established in 1981, was to set about cataloguing and recording collections of lithic debitage from the county. A number of these were known to exist, both in museums and private hands, many having been assembled from the Greensand districts south of the chalk escarpment.

The present paper deals with one such collection, the product of thirty years searching by the first writer and members of his family of the paths, tracks and fire-breaks on the northern slopes of Holmbury Hill. Although not a particularly extensive collection, comprising just over 1450 pieces of debitage, it is nonetheless important in that from an early stage a conscious effort was made to retain every piece of struck flint found, bearing in mind that flint does not occur naturally on the Greensand.

## Location

The area of search comprised a roughly triangular block of Lower Greensand centred TQ 100 440, with the villages of Holmbury St Mary and Peaslake at its eastern and western corners, respectively, and the bivallate hillfort on the summit of Holmbury Hill at its southern (fig 1b). Much of this area is now wooded and not at first sight particularly suitable for the successful recovery of flint artefacts. However, it is criss-crossed by a number of narrow paths and tracks, and these have been inspected at irregular intervals by the first writer since the mid 1950s. Also, following the extensive widening of the tracks as a precaution against fire in 1974/5, a still greater area was exposed, and artefacts began to weather out in some numbers – particularly from the sides of the newly-created banks flanking the tracks. Since then, however, plant regeneration has once again limited the area available for search.

No record was kept of the exact findspot of each artefact, though all were found above the 198m contour; in addition, certain areas were sufficiently productive to suggest occupation or working sites (see below). Since the creation of the new fire-breaks, however, no up-to-date survey of the hill exists, and it is not always possible to indicate these with any accuracy. No artefacts were found within the Iron Age hillfort on the summit of the hill, though various pieces of struck flint (including a barbed-and-tanged arrowhead) had been found during the excavations conducted there by S E Winbolt (1930) and F H Thompson (1979).

## Geology, drainage and soils

The triangular area of search lies on the Hythe Beds of the Lower Greensand, and is flanked by springs and two feeder streams of the Tillingbourne, itself a tributary of the river Wey. In Surrey the Hythe Beds comprise seams of spicular sandstone and chert in loamy sands (Wells & Kirkaldy

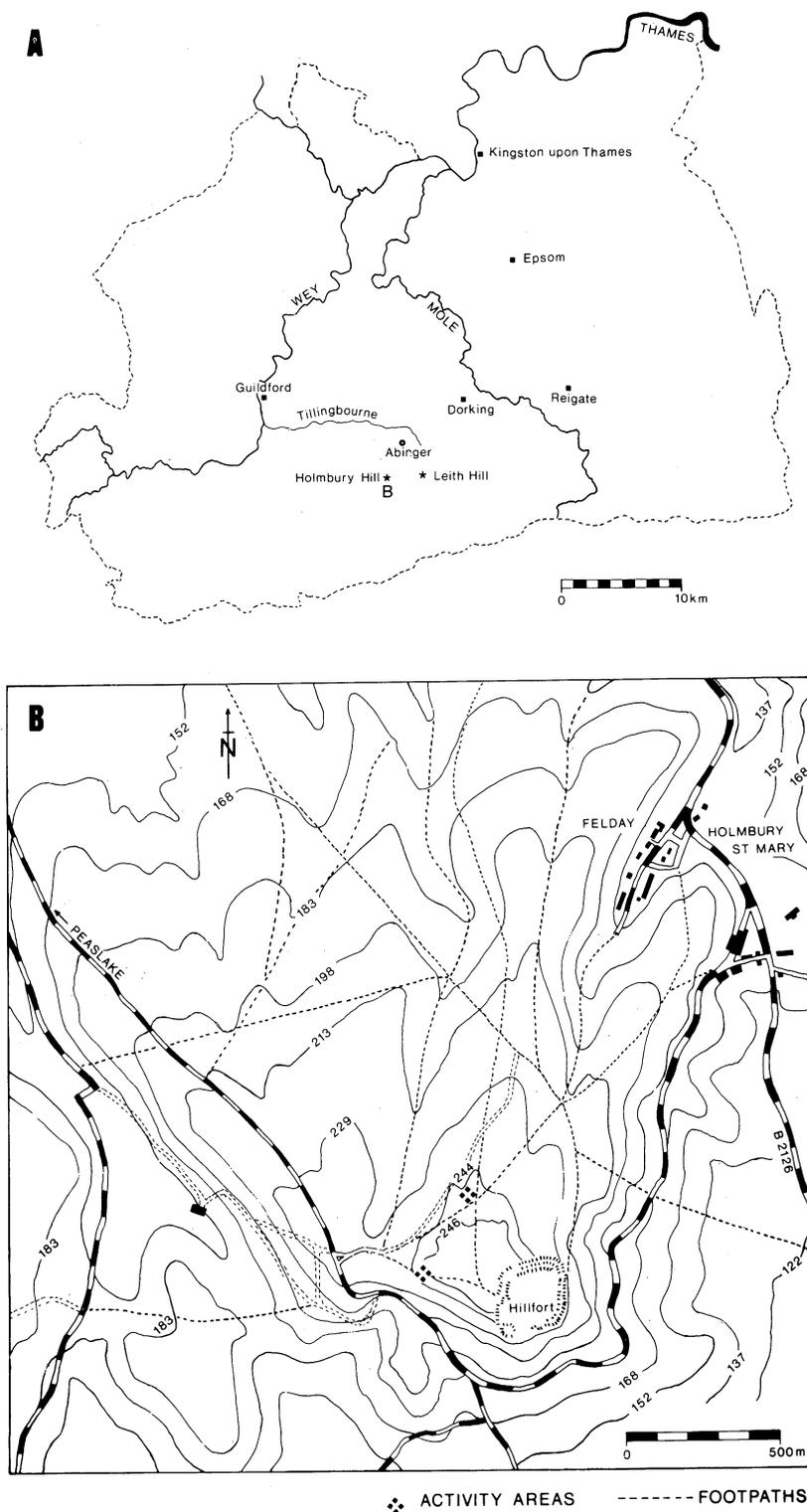


Fig 1. Holmbury Hill: location maps

1966, 382–5), and it is these durable stone beds which explain the height of the Greensand escarpment at Holmbury Hill (261m OD), with its spectacular views across the Weald to the south.

The soil cover varies locally from humo-ferric podzols (Shirrell Heath 2 Association: Jarvis *et al* 1983) to typical argillic brown earths (Fyfield 2 Association) where there is a fine brickearth component (Macphail & Scaife 1987, 33). The former supports little more than heath and mixed deciduous and coniferous woodland; the latter, however, can sustain some cereals and short-term grassland. The area may therefore fairly be described as well-drained, locally fertile upland country with abundant water supplies relatively close at hand, and as such it would have been attractive to both early hunters and farmers alike.

### Previous work

Just how attractive the locality was for early settlement can be gauged in the first instance by the sheer quantity of Mesolithic and Neolithic/Bronze Age flintwork picked up from the surface by a long and distinguished list of fieldworkers, including such as C H Grinling, A E P Collins, A V Keeble, J Langdon Davies, K Walter, Dr W Watson, E S Wood and the Mesolithic scholars W Hooper and W F Rankine. In addition, excavations at Raikes Farm, Abinger Common, by L S B Leakey – following initial fieldwork by Major Beddington Behrens – located a large oval pit infilled with an extensive flint assemblage of mixed date (Leakey 1951; Ellaby 1987, 67), while a smaller, predominantly Mesolithic assemblage was recovered by J X W P Corcoran during the excavation of the Bronze Age bell barrow in Deerleap Wood, on the opposite, northern, bank of the Tillingbourne (Corcoran 1963). Further Bronze Age activity in the area is attested by the discovery of a food vessel at Abinger Hammer (Wood & Thompson 1966), one of only two such from the county (Needham 1987, 103 and note 12).

This local tradition of intensive fieldwork has been carried on latterly by others, notably Keith Winsor, Ken Waters, Geoff Elmore and David Field of the Surrey Lithic Tool Research Group. Recently, for instance, a gridded fieldwalking programme has been conducted at Paddington Farm, Abinger (Field *et al* 1987), to investigate a Later Mesolithic lithic scatter; this has culminated in the methodical (and continuing) investigation of a transect 10km×1km at Abinger-Holmbury (Field & Winsor 1988), designed to identify settlement activity across a range of different geological strata.

Finally, the specific area of search which provided the lithic collection described below also contains two of the county's major earthworks: the bivallate hillfort on the summit of Holmbury Hill (Winbolt 1930; Thompson 1979), and the newly-discovered univallate enclosure at Felday (see Field, this volume), situated on a spur overlooking Holmbury St Mary a mile to the NNE.

### The lithic collection

In all 1452 pieces of struck flint and 4 pieces of chert were recovered by the first writer from Holmbury Hill. To these can be added a further 14 pieces of flint collected by the second writer. The following account therefore deals with a combined total of 1470 pieces of worked lithic material.

This may be broken down as follows:

<i>Waste</i>		<i>Implements</i>	
Cores	30	Microliths	4
Core fragments	8	Arrowheads (leaf)	4
Core tablets	4	(b&t)	3
Core rejuvenation flakes	11	Adze	1
Flakes (complete)	228	(sharpening flakes)	2
(broken)	129	(thinning flakes)	6
(fragments)	193	Ground axe	1

Spalls	273	(fragment)	1
Blades (complete)	19	Knives	7
(butts)	62	Scrapers	87
(segment)	160	Fabricators/rods	6
(tips)	43	Awls/piercers	3
Microburins	2	Burins	4
Miscellaneous waste	130	Hammerstones	2
Chert waste	4	Denticulates	3
		Notched pieces	12
		Miscellaneously retouched	28
	<u>1296</u>		<u>174</u>

Over 90% of the raw material in the collection appears to be 'chalk' flint, derived perhaps from easily accessible surface deposits such as the Clay-with-flints on the North Downs three miles to the north, or selected from the shattered and weathered nodules which lie at the foot of the scarp. In terms of colour and quality it ranges from a fine opaque pearly-grey flint, through a poorer, cherty mottled grey and grey/black flint to a lustrous black. A number of pieces of smoke-brown flint are also present, comprising nearly 5% of the total, some with a smooth water-rolled cortex perhaps collected from the superficial gravel deposits adjacent to the Tillingbourne. There are three fragments of Bull Head Bed flint from the Reading Beds/base of the Thanet Sand, and four pieces of fine-grained green/black Portland-type chert.

A few pieces have been worked on thermally-fractured and heavily patinated chalk flint; several others are lightly patinated all over, while a somewhat greater number have been perceptibly affected by fire – though whether this has cultural significance, or is the result of the clearance and burning of heather and whortleberry ('hurts'), remains unclear. The proportion of pieces retaining cortex (632 out of 1470 or 43%) suggest that much of the flint was carried up on to the hill in the form of small, easily portable nodules, or as finished implements.

#### CORES (fig 2, nos 1–4 and 7)

30 cores are present in the collection, and range from large examples with a few removals to small pieces flaked to exhaustion. 3 utilise gravel nodules, while the remainder are worked on 'chalk' flint. One of the latter is burnt (Aii), while a second (Aii) has been adapted for use as a burin (fig 2, no 4). 20 retain cortex. 8 have been reduced to provide blades (5 of Aii, 2 of Bi and 1 of Bii), while the remainder have been reduced for flakes.

They may be classified, using the system proposed by Clark at Hurst Fen (1960, 216), as follows:

A (1 platform)	i flakes removed all round	1
	ii flakes removed part way round	6 (fig 2, nos 3–4)
B (2 platforms)	i opposed platforms	3 (fig 2, no 1)
	ii one platform at oblique angle	6 (fig 2, no 2)
	iii platforms at right angles	7
Unclassifiable		7 (fig 2, no 7)

#### CORE FRAGMENTS, CORE TABLETS AND CORE REJUVENATION FLAKES (fig 2, nos 5–6)

In addition to the complete cores, a further 8 fragmentary examples are present, of which 5 have been reduced for blades. There are also 4 core tablets (eg fig 2, no 5) and 11 core rejuvenation flakes (eg fig 2, no 6), the latter resulting from the deliberate renewal of core-platforms. One of the rejuvenation flakes has been lightly reworked to provide a scraping edge. All but 2 of these 23 pieces utilise 'chalk' flint.

**KEY (after Martingell & Saville 1988)**

- ▲ Presence and position of intact striking platform
- △ Position of bulbar end now absent
- 'p''f' Striking platform, 'plain' or 'faceted'
- ^^ Extent of striking platform
- † Burin spall      ■ Cortex      ✖ Crushing/bruising

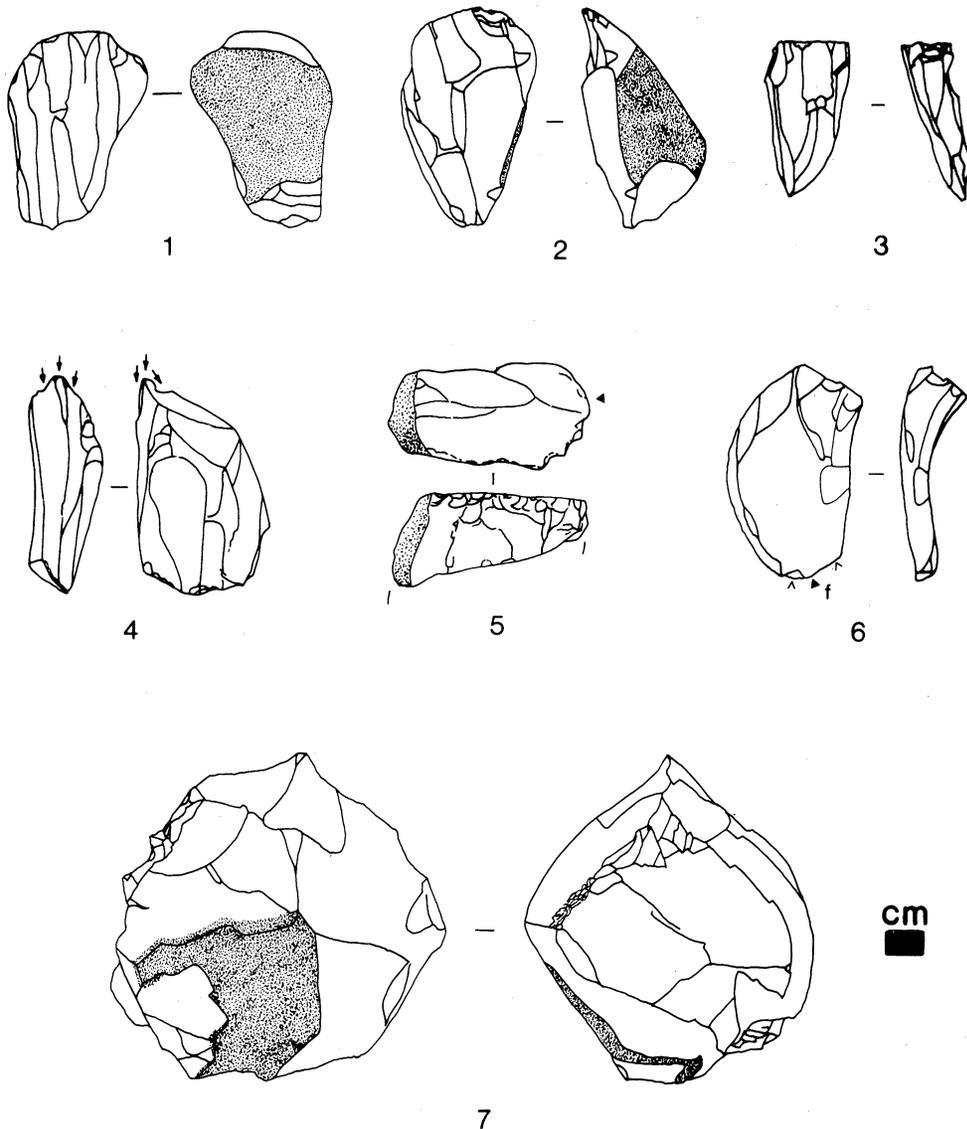


Fig 2. Holmbury Hill: cores (nos 1-4 and 7; no 4 adapted as a burin), core tablet (no 5) and core rejuvenation flake (no 6)

## FLAKES, SPALLS, BLADES AND MISCELLANEOUS WASTE

Together, these waste categories comprise 1237 pieces, or some 84% of the total collection. Nearly 96% of this is of 'chalk' flint; the remaining 4% includes 2 complete flakes and 1 broken flake of Bull Head Bed flint. 41% of the flakes were found to be complete (of which 68% were cortical), but only 6.6% of the blades – over 50% of which were in the form of segments. A good proportion of the flakes also had terminal hinge fractures, which might suggest the use of poor quality raw material and/or unskilled workmanship – more likely the former.

No detailed metrical analyses were attempted, due both to the small size of the sample, and to the wide area from which it was recovered. However, there is a great variety in the size of the complete flakes, ranging from small, squat removals to larger, blade-like pieces. The majority appear to be, if anything, rather broad – once again perhaps a reflection of the quality of the raw material.

## MICROBURINS (fig 3, no 10)

2 microburins are present in the collection, both of mottled grey 'chalk' flint. Together with the 4 microliths (see below), these are indisputable evidence of Mesolithic activity on the hill.

## CHERT

4 pieces of worked Portland-type chert are present in the collection. 2 are of dark slate grey/black colour, and 2 are grey/black but with a greenish tinge. They comprise a small flake with a hinge-fracture at its distal end; the distal ends of 2 small narrow flakes/blades, both with terminal hinge-fractures, and a triangular segment of a snapped flake/blade.

These new finds can be added to those already known from Mesolithic contexts in Surrey (Rankine 1949, 40; 1951; Palmer 1970); these include a blade from Frensham Great Pond, a possible graver from Farnham, and two scalene microliths, again from Farnham. These latter, as Ellaby has noted (1987, 60), suggest that the chert source was utilised into the Later Mesolithic. That it was used still later in the county is shown by stray finds of a Neolithic leaf and transverse arrowhead from Ham and Petters Sports Field, Egham (S Dyer, per comm), respectively; a flake knife of the same material was also found within the Neolithic causewayed enclosure at Yeoveney Lodge, Staines (Robertson-Mackay 1987, 95, F167).

## MICROLITHS (fig 3, nos 8–9)

4 microliths are present in the collection – 3 fashioned from 'chalk' flint and 1 from gravel flint – though only 2 are complete enough to permit classification. Both of the latter comprise small obliquely-backed points (Jacobi 1978, fig 6.1) with broken tips (fig 3, no 8). The 2 remaining pieces include an obliquely-backed tip (fig 3, no 9), and an unclassifiable fragment with diagonal retouch at its distal end.

The microliths are clear evidence of Mesolithic activity on the hill, and can be added to those already known from the locality (eg Ellaby 1987, fig 3.4), though the small number makes it impossible to say to which phase of the period they belong. However, fieldwalking at Paddington Farm, a mile or more to the north, recovered an assemblage of 23 microliths, comprising small obliquely-backed points, hollow-based points, bitruncated points and an isosceles triangle (Ellaby in Field *et al* 1987, 93–6) indicative of activity in the Horsham and Later Mesolithic periods.

## ARROWHEADS (fig 3, nos 11–16)

7 arrowheads are present in the collection; these include examples of both leaf and barbed and tanged types. All but one are made on 'chalk' flint.

Bifacially-worked leaf arrowheads are represented by one complete example of Green's type 3B

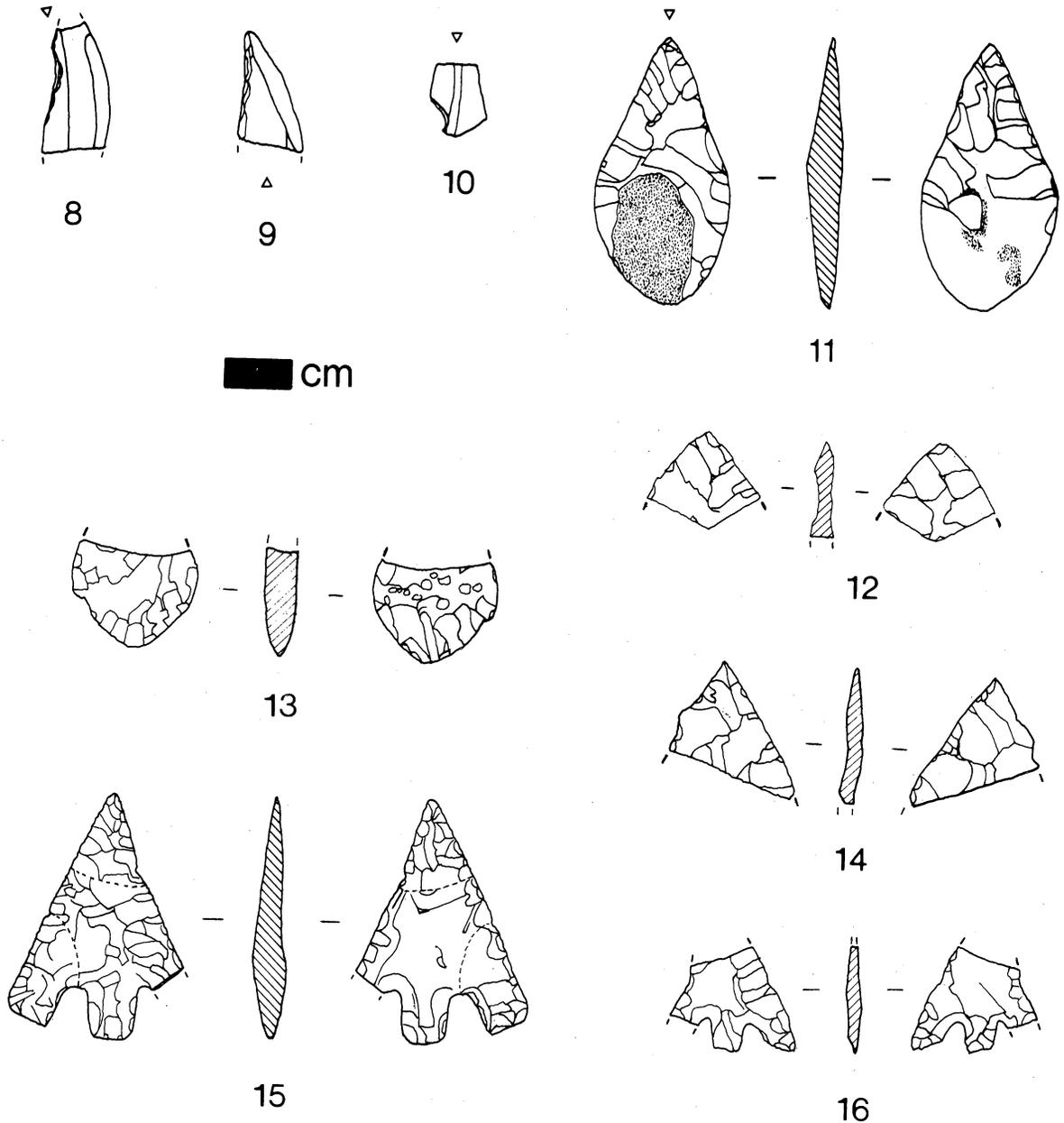


Fig 3. Holmbury Hill: microliths (nos 8 and 9), microburin (no 10), leaf arrowheads (nos 11–13) and barbed-and-tanged arrowheads (nos 14–16)

(1980, 71) made on the distal end of a narrow cortical flake/blade (fig 3, no 11), and 3 fragments, one of which has been burnt (fig 3, no 13).

There are 2 barbed-and-tanged arrowheads (Green's Sutton b type (1980, 122): fig 3, nos 15–16), together with the tip of a possible third (fig 3, no 14) – the latter of translucent brown flint. The largest example (fig 3, no 15) was found in three pieces on two separate occasions, with the tip over 100m away from the barbs and tang.

These latest pieces can be added to those already known from the locality (eg Field & Cotton

1987, fig 4.15), and are presumably indicative of hunting or warring parties operating on the Greensand in the Neolithic and the earlier part of the Bronze Age. No examples of the third main class of arrowhead, the transverse, are present in the collection, though these too are relatively common in the area.

#### AXES AND ADZES (fig 4, nos 17–19)

11 fragments of axes/adzes are present in the collection, and these include examples of both flaked and ground forms. Flaked pieces comprise the butt of a core adze with, typically, portions of cortex surviving round the butt and on one face (fig 4, no 17), 2 axe/adze-sharpening flakes (eg fig 4, no 18) and 6 possible thinning flakes. All appear to be of 'chalk' flint, with the exception of one sharpening flake and one thinning flake which are of light brown gravel flint.

The blade of a ground axe (fig 4, no 19) and one small flake from a second example are also present; both utilise a fine opaque pearl-grey chalk flint.

The adze butt and two sharpening flakes have Mesolithic affinities; the ground axe blade and flake belong to the Neolithic. Mesolithic core adzes are common finds round the upper Tillingbourne, and many have been listed by Wymer (1977, 267–90; shown graphically by Ellaby (1987, fig 3.4)); good numbers of sharpening flakes are also present in the same area (eg Leakey 1951, fig 9). A similar picture obtains in the Neolithic (Field & Cotton 1987, fig 4.7). Complete ground axes are known from elsewhere on Holmbury Hill, for instance (eg 'west of Holmbury glade' (Whimster 1931, 55, pl 2)), while a cache of three chipped axes of possibly South Downs flint was found at Burrows Cross, Peaslake a mile or so to the north-west (Bruce-Mitford 1938; Craddock *et al* 1983). The high numbers of ground axe fragments are a particularly notable feature of the Greensand areas flanking the upper Tillingbourne, and are presumably an indication of the value placed on good quality, axe-making flint in a non-flint locality.

Finally, the ground axe blade (fig 4, no 19) was noted to have been found in the same area as a number of scrapers, at TQ 10304330, a circumstance which may point to the whereabouts of what can loosely be described as an activity area – one of several such lithic concentrations located on the hill.

#### KNIVES (fig 4, nos 20–2)

7 artefacts identified as knives are present in the collection. They can be divided morphologically into four discrete types: (i) flake (2 examples), (ii) bifacially-worked (2 examples), (iii) blunted-back (1 example) and (iv) plano-convex (2 examples). One of the bifacially-worked knives and both the plano-convex pieces are worked on gravel flint; the remainder utilise 'chalk' flint.

(i) The 2 flake knives are made on robust, blade-like flakes, and both have minimal retouch on their two long sides. One is of opaque pearl-grey flint, while the other is of mottled grey flint and retains a patch of cortex at its distal end (fig 4, no 20). This latter piece also has some shallow invasive retouch on its ventral surface.

(ii) The 2 bifacially-worked knives are made on small oval/rectangular blanks of mottled grey/black and smoke-brown flint, the latter of which has subsequently broken. Both have been invasively retouched across both faces, and retain cortex on their dorsal surfaces.

(iii) The single blunted-back knife is made on a broken, elongated D-shaped blank of mottled grey/black flint (fig 4, no 21). The cutting edge has been thinned with bifacial retouch; the opposite edge has been blunted by a band of cortex and steep retouch.

(iv) The 2 plano-convex knives are fashioned on small squat flakes of smoke-brown flint (fig 4, no 22). Both have shallow invasive flaking and patches of cortex on their dorsal faces.

The various types of knife are here taken to be a post-Mesolithic phenomenon, whose manufacture spanned the Neolithic and earlier part of the Bronze Age. Of these, the flake knives, bifacially worked knives and the single blunted-back knife are more likely to belong to the Neolithic proper; good parallels are available from a number of sites, for example the Neolithic causewayed enclosure at Yeoveney Lodge, Staines (Healey & Robertson-Mackay 1983, 7; Robertson-Mackay

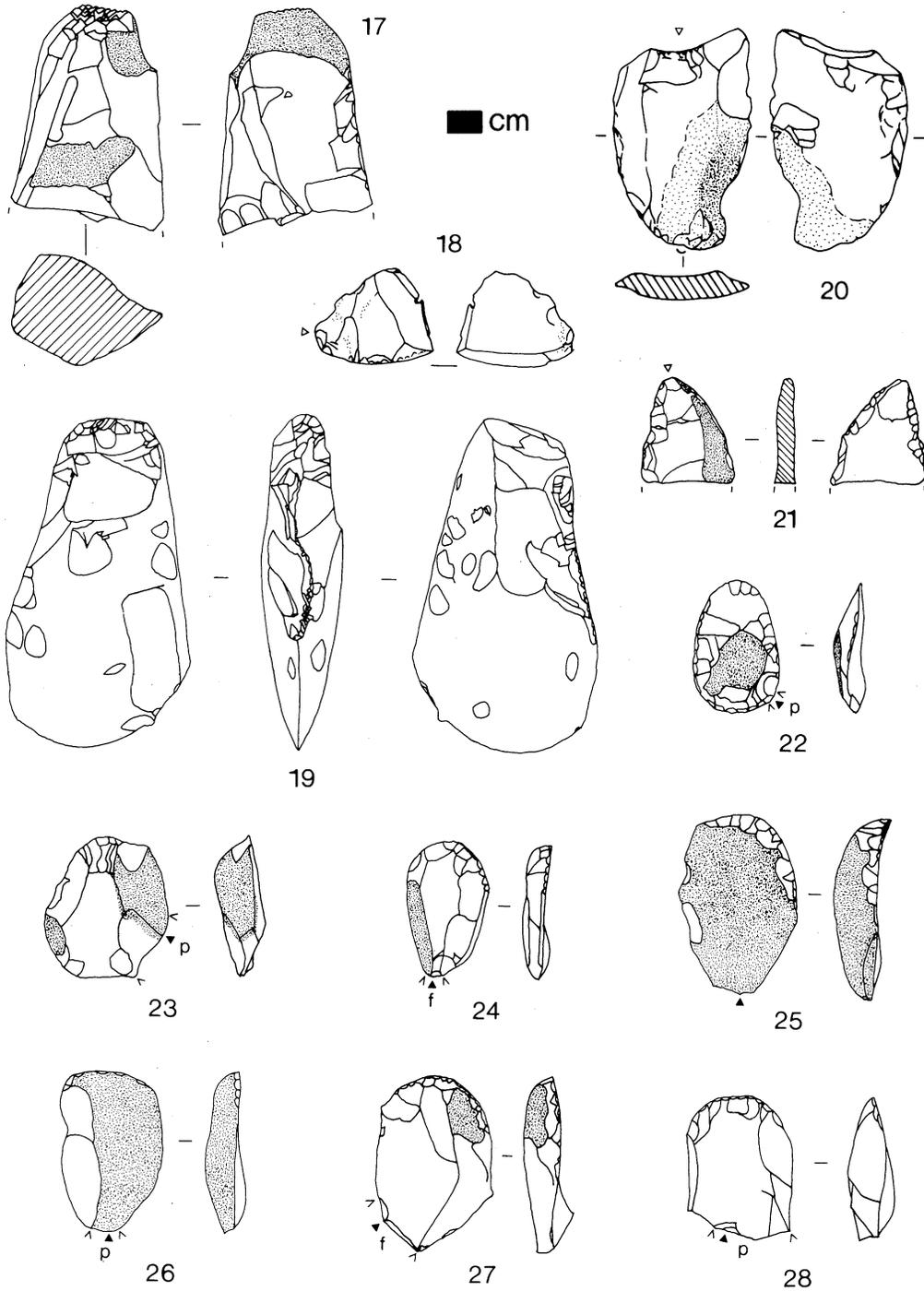


Fig 4. Holmbury Hill: adze butt (no 17), axe/adze-sharpening flake (no 18), ground axe (no 19), knives (nos 20-22) and scrapers (nos 23-28)

1987, 107–11). The plano-convex pieces meanwhile probably belong to the later Neolithic and earlier Bronze Age.

#### SCRAPERS (fig 4, nos 23–28; fig 5, nos 29–36)

87 scrapers or parts thereof are present in the collection, and range from examples with classic steep retouch to flakes with light, marginal retouch. The majority appear to be of ‘chalk’ flint, though there are 9 made on brown gravel flint. 6 have been burnt, while 65 retain cortex. All but 2 have convex scraping edges; the 2 exceptions comprise a shallow concave scraper on the end of a broad blade (F) (fig 5, no 36), and a straight retouched edge at the bulbar end of a small flake. One of the 8 disc scrapers (C) has heavily bruised edges all the way round, and may not in fact be a true scraper but have more in common with the hammerstones/fabricators.

53 scrapers are complete, while there are 13 snapped distal ends and 4 with broken scraping edges. A further 2 have snapped along their long axes. 11 have been made on broken flakes, one of the latter a thermally-fractured gravel nodule with water-worn cortex, while there are 4 unclassified fragments.

The complete scrapers may be tabulated, using a modified version of Clark’s Hurst Fen typology (1960, 217), as follows:

A (end scrapers)	22 (fig 4, nos 23–28)
A/D (end/side scrapers)	17 (fig 5, nos 29–31)
B (double ended)	2 (fig 5, nos 32–33)
C (disc: at least 75% of circumference retouched)	8 (fig 5, nos 34–35)
D (side scrapers)	3
E (broken flakes)	11
F (hollow scraper)	1 (fig 5, no 36)

As might be expected, scrapers dominate the implement inventory, comprising over 66% of the regular tools, and indeed make up nearly 6% of the total lithic collection. This ubiquitous post-glacial artefact is not particularly susceptible to close dating on typological grounds alone, and consequently no attempt is made here to sub-divide the bulk of what is, after all, a surface collection gathered from a wide area. However, it is likely that the majority of the scrapers in the collection belong to the Mesolithic and Neolithic periods, for very few of the small shallow-flaked ‘thumb-nail’ scrapers often dated to the Bronze Age are represented. Finally, several localised concentrations of scrapers were noted on the hill, and may point to the existence of specific activity areas (eg scrapers and ground axe blade at TQ 10304330).

#### FABRICATORS/RODS (fig 5, nos 37–38)

6 fabricators are present in the collection, only 2 of which are complete. 5 are of mottled grey or grey/black ‘chalk’ flint; the cortex on the sixth suggests that it was fashioned from a rounded gravel pebble. 2 pieces, one complete (fig 5, no 37), one incomplete, are slender core tools (‘rods’) of oval and circular section, respectively. The remaining 4 pieces are worked on the dorsal faces of robust flakes/blades of D-sectioned profile. All but one show signs of heavy use, in the form of localised crushing, bruising and polishing, which is particularly evident at the tips and along the lateral edges.

Fabricators are a recurrent component in a number of earlier Neolithic assemblages (Whittle 1977, 75). Locally, they have been found in the large flint assemblage of mixed date from Abinger Common (at least 11 examples, including 1 from the pit-filling (Leakey 1951, 27, fig 8)), while a single example was recovered from the stone capping on the turf mound of the Bronze Age bell-barrow in Deerleap Wood (Corcoran 1963, 13–14, fig 5.2). 3 of the Holmbury fabricators were found, with other debitage, within a few metres of each other at TQ 10154310.

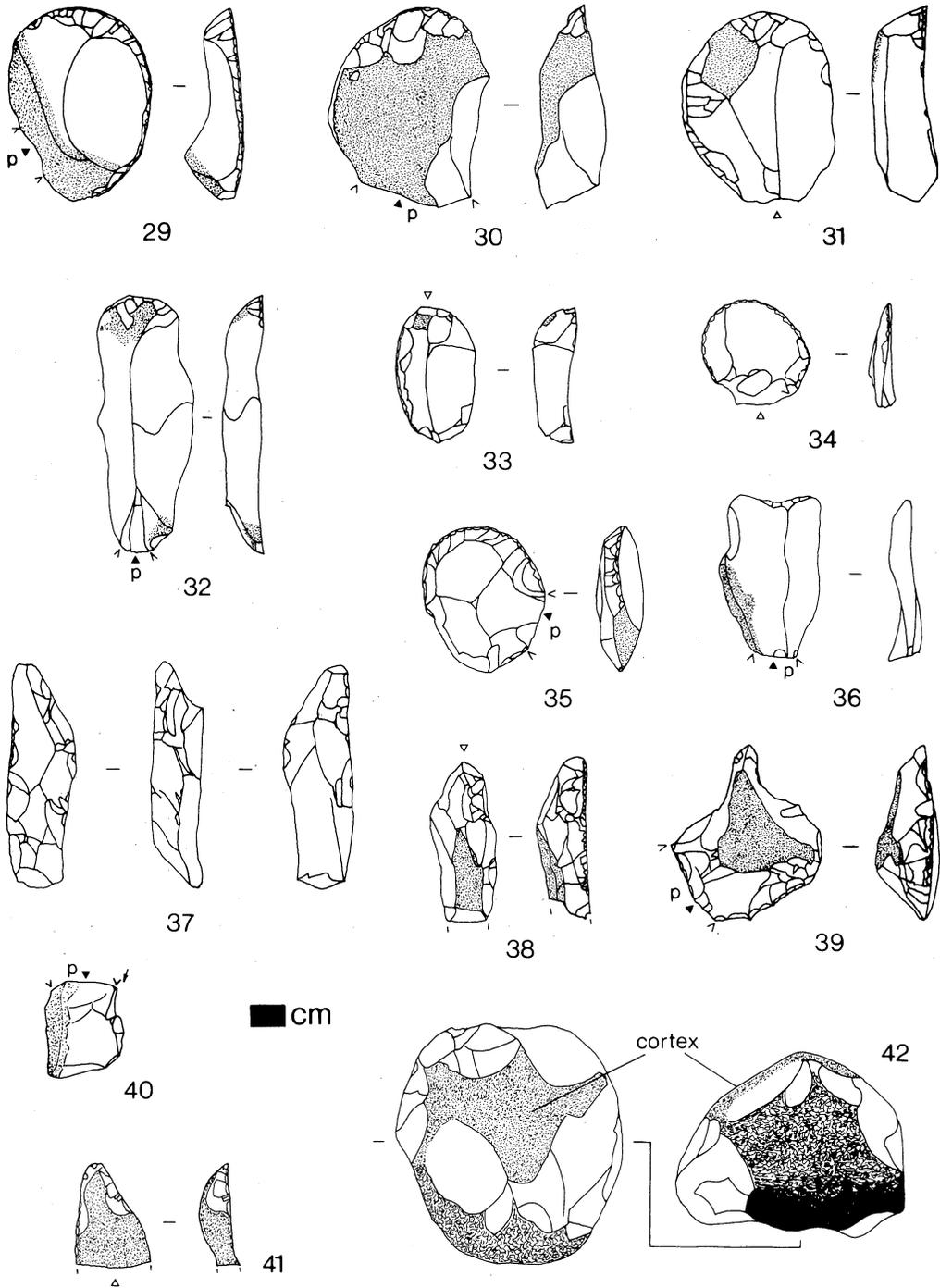


Fig 5. Holmbury Hill: scrapers (nos 29–36), fabricators (nos 37 and 38), awl (no 39), burin (no 40), beaked piece (no 41) and spherical hammerstone (no 42)

## AWLS/PIERCERS (fig 5, no 39)

3 awls/piercers are present in the collection. All are of grey/black 'chalk' flint. Two types are present. The first, represented by two examples, has minimal retouch on a suitably pointed blank; the second, represented by a single example (fig 5, no 39), is more robust, with deliberate retouch to produce a long thick point.

## BURINS (fig 5, no 40)

In addition to the burin worked on a blade core of Aii form (fig 2, no 4: see above), 4 possible additional examples are present in the collection – all but one of which utilise 'chalk' flint. One is worked on a core-rejuvenation flake, one on the proximal end of a small flake (fig 5, no 40), and one has been deftly produced by the removal of three flakes from an otherwise cortical gravel nodule. A fourth piece has a less certain graving edge worked on the distal end of a narrow flake/blade with marked step-fracturing on its dorsal face.

Burins are well represented in the Mesolithic, but are rare in Neolithic assemblages.

## HAMMERSTONES (fig 5, no 42)

2 spherical hammerstones of 'chalk' flint are represented in the collection, 1 complete (fig 5, no 42) and 1 fragmentary. Both retain cortex and are characterised by heavy local bruising and crushing, indicating repeated use.

## DENTICULATES

There are 3 denticulates in the collection, each with two notches worked on their lateral edges. 2 of the pieces comprise blade segments of mottled lustrous grey-brown gravel flint, while the third is a coarse cherty cortical flake of mottled grey 'chalk' flint.

## NOTCHED PIECES

There are 12 notched flakes/blades in the collection, all worked on 'chalk' flint. 5 of these have notches worked on their lateral edges, 3 have notches worked on distal ends, 2 have notches worked at their bulbar ends, and a further 2 have notches worked adjacent to the bulbs of percussion.

## MISCELLANEOUSLY RETOUCED PIECES (fig 5, no 41)

28 miscellaneous retouched pieces – all but 2 of 'chalk' flint – are present in the collection. This class includes a number of complete and fragmentary artefacts not otherwise identifiable. It can, however, be subdivided into a number of different categories: (i) pieces with scraper-like retouch, (ii) crushed/bruised pieces, (iii) mis-hits, (iv) fragments and (v) beaked pieces.

(i) This category contains 10 pieces which have scraper-like retouch/utilisation along one or more edges. The majority are worked on flakes, though one is struck on a core rejuvenator.

(ii) 2 heavily cortical pieces – one a natural rod of flint – appear to have localised patches of crushing or bruising, and may have been used as *ad hoc* fabricators or small hammerstones.

(iii) 2 pieces appear to have been mis-hits, perhaps the result of attempts to produce microliths.

(iv) 12 retouched fragments are present, and do not appear to belong to any readily recognisable artefact-type. They include 1 small segment of a robust crested blade.

(v) 2 beaked pieces, one heavily cortical, are present, one made on the distal end of a narrow flake/blade (fig 5, no 41) and the other (broken) on the proximal end of a flake.

## Discussion

This collection, as has been noted earlier, is but one of a number from the Greensand districts flanking the Tillingbourne in southern central Surrey. It is, however, somewhat unusual in that, excluding denticulates, and notched and miscellaneous retouched pieces, regular tools comprise only 8.9% of the total – a figure low enough to confirm the strict objectivity of the recovery strategy.

The collection is, however, like so many others from the Greensand, clearly chronologically mixed, with artefacts of diagnostically Mesolithic, Neolithic and Bronze Age type all represented. Mesolithic artefact types probably comprise a majority of the blades and blade fragments, the blade cores, the microburins, microliths, adze fragments, a number of the scrapers and the burins. Neolithic types include the leaf arrowheads, ground axe fragments, the flake, bifacially worked and blunted-back knives, many of the scrapers and the fabricators. Bronze Age types meanwhile are apparently less common, but include the barbed-and-tanged arrowheads, a few of the scrapers and the plano-convex knives. A number of the artefact types, such as the flakes, spalls, awls/piercers, hammerstones and notched pieces are not susceptible to division in this way.

In terms of the tool types present, the scraper is dominant, and makes up over 66% of the whole. Whether or not large numbers of scrapers are indicative of a pastoral economy, as several commentators have argued (eg Bradley 1972, 197), the localised concentrations of such tools noted on the hill (eg the scrapers and ground axe blade at TQ 10304330) may at least suggest the existence of specific 'activity areas'. The discovery of 3 of the 6 fabricators within a restricted area with other debitage at TQ 10154310 may be similarly interpreted. Further work of the type now under way (Field & Winsor 1988) may shed more light on this particular point.

Finally, the high proportion of chalk flint in the Greensand assemblages and collections is a recurrent feature and has been noted before (eg Rankine 1946–7, 8; Field *et al* 1987); the scrupulous nature of the collecting practised here has also added four pieces of Portland-type chert, which are, in themselves, very useful additions to a limited inventory of such finds from the county.

The area round the upper Tillingbourne is clearly a favourable one for early settlement, as lithic collections of the type considered above indicate. However, only with the adoption of rigorous fieldwalking strategies of the type now being contemplated (eg Field *et al* 1987; Field & Winsor 1988), backed up where necessary by selective excavation, geophysical survey and environmental analyses, will it be possible to further our understanding of this part of southern central Surrey.

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