

A BRONZE AGE CEMETERY-BARROW ON ITFORD HILL, BEDDINGHAM, SUSSEX

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SUMMARY. *This report describes the rescue excavation of a small barrow surrounded by 12 postholes in a penannular ditch. There was a central cremation in a large Middle Bronze Age (M.B.2) urn, also a number of cremations, some in urns, adjacent to the S. and SW. margins of the barrow, between 14 and 19 individuals being represented. The barrow was situated close to the Itford Hill Bronze Age settlement and probably was the latter's cemetery. Pottery resemblances between the two sites are apparent, especially part of a decorated globular vessel excavated at the settlement in 1951, which belongs to a cremation urn (part missing) excavated in 1971.*

INTRODUCTION

The site (Fig. 1) of the cemetery-barrow is at TQ.44670541, some 100 yards (90m.) north of the well known Bronze Age farmstead on Itford Hill, excavated 1949-53,¹ just below the 500ft. (152m.)

¹ G. P. Burstow and G. A. Holleyman, 'Late Bronze Age Settlement on Itford Hill, Sussex,' in *Proceedings of the Prehistoric Society* (abbreviated hereafter to *P.P.S.*), vol. 23 (1957), pp. 167-212. Some members of the Society may wonder why what was called *Late Bronze Age* in 1957 is now *Middle Bronze Age*. The matter is complicated and is largely answered in Mrs. Ann Ellison's report on the B.A. pottery (this report, p. 108). Professor Hawkes' *Scheme for the British Bronze Age* (1960) suggests approximate dates for divisions within the Bronze Age, the L.B.A. commencing 900/850 B.C. and the M.B.A. at c. 1400 B.C. Thus, any site with a date falling between 1400 and 900 B.C. must (all the while we continue to use stone and metals to define periods) be classed as Middle Bronze Age (further subdivided into M.B.A. 1, 2 and 3). According to the evidence available in 1957 Burstow and Holleyman considered the date of the Itford Hill settlement to fall somewhere within the date range 1000-750 B.C., in what was then Late Bronze Age 1. It is now known that such B.A. settlements are earlier than had been thought, recent confirmation (1971) coming from the carbonised barley from the settlement site which has a radiocarbon date of c. 1000 B.C. (see details on p. 89). Unfortunately radiocarbon years do not equate with calendar years at certain periods (discovered through research on the bristlecone pine tree), so that a C14 date of c. 1000 B.C. is likely to be nearer a *calendar* date of 1200 B.C. In any event both dates are earlier than the start of the L.B.A. at 900/850 B.C. and so the Itford Hill settlement is now firmly within the Middle Bronze Age according to current terminology.

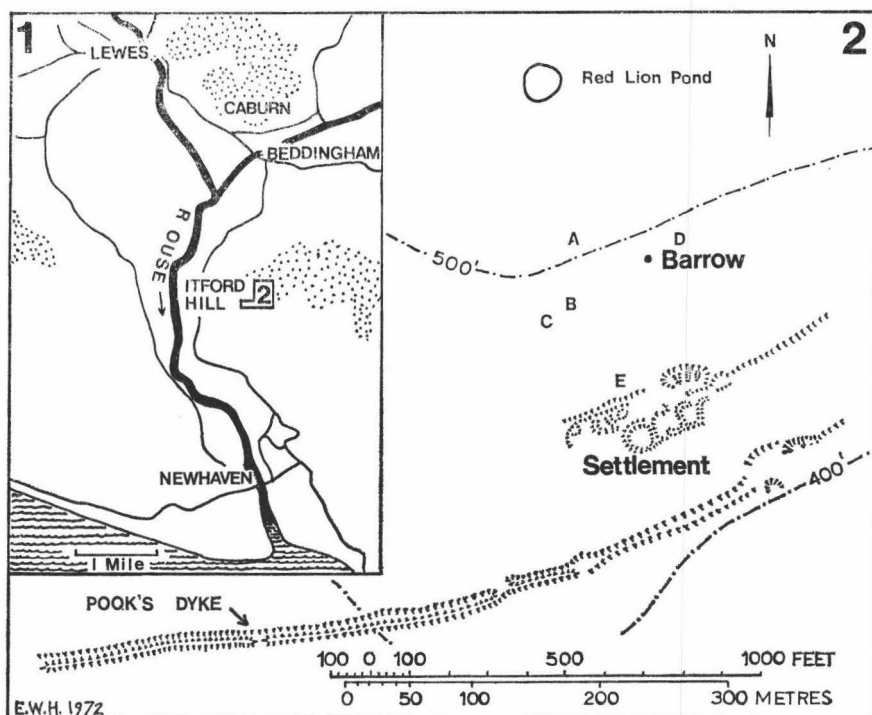


FIG. 1. SITE PLAN. Land over 400 feet stippled.

contour, some 160 yards (145m.) south of the downland ridge, which rises to a maximum of 540ft. (165m.) at Red Lion Pond (a fairly modern dewpond). The subsoil is Upper Chalk covered with a thin layer of brown topsoil in which flint nodules are abundant, often in localised areas, as seen after ploughing. Gorse clearance and ploughing of the hillside for the first time in living memory in 1971 allowed the land to be searched for signs of occupation. While doing this, Mrs. Hilda Holden noted a roughly circular group of medium to large flint nodules, where the ground was a few inches higher than that nearby and where there appeared to be faint traces of a ditch on the N. and SE. sides. There was a scatter of coarse Bronze Age sherds of pottery of a fabric similar to that found at the farmstead (in which the writer and Mrs. Holden had taken part), one or two Beaker sherds and struck flint flakes. A second visit by Mrs. Holden produced from the ploughsoil (now once harrowed) 5½lb. (2.38kg.) of coarse and fine B.A. sherds, plus cremated bone, in one small area, c.6ft. (2m.) diameter, 25-30ft. (7-8m.) S. to SE. of the approximate centre of the flinty area (possible

Cremations 2 and 3 were in this circle) (Fig. 2). There appeared to be a very faint lynchet crossing $4\frac{1}{2}$ ft. (1.5m.) N. of the 40ft. S. peg, travelling between SW. and NE. for some distance either way, at a true bearing of 65 degrees. It was hardly discernible, but helped confirm that the barrow area had been lightly ploughed in the past.

As the land was required for cultivation within a few weeks permission was kindly given by Mr. D. Gribble, the farmer, for a 'rescue' excavation to take place. Work started four days later, on 6 October and finishing in December, 1971, being done by volunteers, directed by the writer, on two or three days a week. Owing to the exposed position of the site and the necessity for speed, there was no time to arrange for site huts, barrows and boards, so dumping had to be done where convenient. The quadrant method, with long N.-S. and E.-W. trenches, was adopted and work filled in after recording each section. Consequently, at no time was the whole excavated area clear of spoil. The SE. and NW. quadrants were dug simultaneously, followed by the SW. and then the NE. quadrants. The exceptionally fine spell of weather for the time of year enabled the excavation to be completed, as the exposed situation of the site did not permit of work during other than fine weather.

The presence of the barrow was not suspected as the hillside between the settlement and Red Lion Pond on the crest has been covered with clumps of gorse (furze) for many years. Intensive fieldwork in 1949 by Messrs. Burstow and Holleyman assisted by the writer failed to reveal it then. The settlement, being a Scheduled Ancient Monument, has not been ploughed, neither has the linear earthwork (also Scheduled) which runs SW. of the settlement a total distance of c. 1900 feet (580m.) (Fig. 1). This bank, with its ditch on the uphill side, was known to A. Hadrian Allcroft in 1923 as 'Pook's Dyke',¹ but there is no evidence of its relationship to the settlement, if any, as it has not been investigated.² A plan of the eastern part of this dyke has been published,³ but the whole length was surveyed by Mr. G. A. Holleyman and the writer in 1949 and it is therefore convenient to show the full length in Fig. 1. Lynchets abutting the southern side of the bank are not depicted.

The nearest barrow appears to be 1,000 yards (900m.) NE., evidently opened in the past and unrecorded, while other barrows dot the ridgeway further east. A large collared urn and four smaller vessels were found in 1878 by workmen digging for flints on the Downs near Itford Farm (the latter is $\frac{3}{4}$ mile (1200m.) W. of the B.A. settlement). The large urn was inverted, covering cremated

¹ Recorded by Allcroft on the Society's 6in. O.S. map 67 SE.

² *P.P.S.*, vol. 23 (1957), p. 168.

³ *ibid.*, Fig. 2.

bones in a hole in the chalk, surrounded by ashes and covered above with flints. The surface was said to be level without any signs of a mound.¹ The nearest known B.A. site resembling the Itford Hill settlement is SW. of Black Patch, Alciston, about $3\frac{1}{4}$ miles ($5\frac{1}{4}$ km.) to the east.²

During the course of the excavation several very slight, apparent depressions were discovered in the ploughsoil, again mostly because of Mrs. Holden's fieldwork, which are lettered A-E on the site plan (Fig. 1). There were one or two similar sites SE. of the barrow, but these were too indistinct to be surveyed and they may be where gorse had been removed coupled with rabbit warrens. Site C was subjected to an excavation (Cutting C) after work had finished on the cemetery barrow, while A and B were trial trenched; D and E were not investigated.

THE EXCAVATIONS

THE BARROW (Figs. 2 and 3). A circular area of large flints almost agreed with the irregular inside edge of a shallow barrow ditch, c. 18ft. (5.5m.) diameter internally, which had a gap or causeway, c. 9ft. (3m.) wide, on the south side. The 'ditch' was not a true circle, being an irregular series of quarries connected together, the width varying from 3ft. (1m.) to 10ft. (3m.), with an average width of 4ft. (1.25m.) and a depth averaging 9in. (230mm.). Not only in the barrow area, but over the whole of the excavations, the chalk had been much disturbed by generations of burrowing rabbits. The filling of the ditch consisted of a large number of struck flakes, cores, some worked flints, utilised flakes and flint waste, plus whole flint nodules often of large size and with some trimmed ends; the interstices of this mass being filled with brown soil (same as topsoil). There was no evidence of silting of the ditch, and little trace of the chalk rubble extracted by the barrow builders, which material is usually spread over the area within the ditch. The extant capping of the barrow was only the topsoil, intermingled with a single layer of large flints, recently disturbed by the plough, and a scatter of flint flakes. There were no signs of a buried soil.

The bottom of the ditch contained twelve postholes,³ mostly well dug into the solid chalk and filled with flints, flakes and soil. Seven had flat or rounded bases, but five were conical⁴ (PH. nos.

¹ *Sussex Archaeological Collections* (abbreviated hereafter to *S.A.C.*), vol. 29 (1879), pp. 238-9; illustrated in E. C. Curwen, *The Archaeology of Sussex*, 2nd edn. (1954), Pl. XV.

² Curwen, *op. cit.*, p. 193, Fig. 55.

³ Posthole numbers 1-12 will be preceded by the letters PH., to distinguish them from Cremations, or Cremation Holes, 1-16, which have prefixed, C. or CH.

⁴ A tendency for some postholes at the settlement site to be conical in section may be noted in the *Analysis of Postholes, P.P.S.*, vol. 23 (1957), p. 172ff.

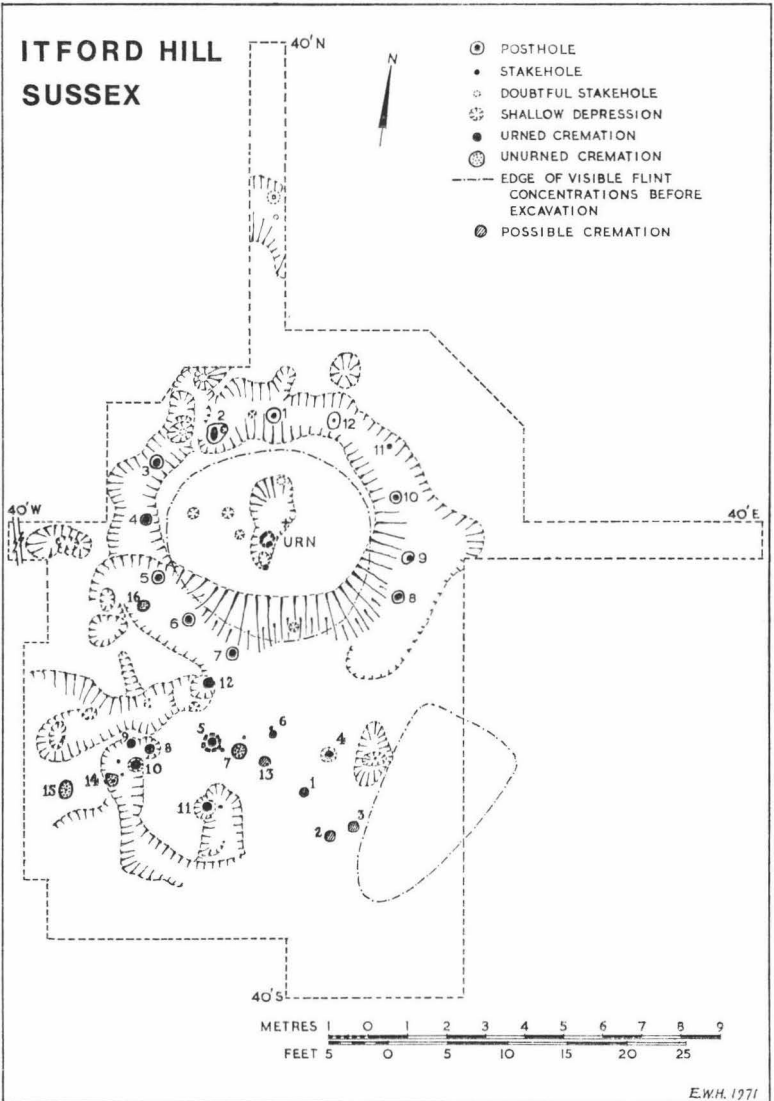


FIG. 2. CEMETERY-BARROW. Plan of excavations. The western trench extended 40ft. from the centre peg (marked +).

1, 9, 10, 11 and 12), though no. 11 might be described as a stakehole, being only 4in. (100mm.) diam. and 4in. (100mm.) deep. The other holes ranged in depth from 7in. to 17in. (180-430mm.) (see Table 1). When first exposed, PH. 12 contained packing flints around a soil-filled void c. 5in. (125mm.) diameter. The other holes, even PH. 11, could have taken this size of post, provided that the ends of the posts were pointed where required to fit into the conical holes. Flints and flakes were homogeneous over the postholes indicating that the posts were unlikely to have rotted in situ, but that they were removed before the flints and flakes were deposited. The lack of silting suggests that the filling of the ditch took place soon after the construction of the barrow. Nine of the postholes lie on the circumference of a circle having a diameter of 21ft. (6.4m.), PH. 3, PH. 4 and PH. 11 being just outside this circle.

TABLE 1. DETAILS OF POSTHOLES IN BARROW DITCH
(Measurements in inches)

PH. No.	Top Diameter	Bottom Diameter	Depth below Solid	Remarks
1	14	2½	13	Conical. Beaker sherd in ditch bottom adjacent hole.
2	14 x 8	10 x 3	7	Possible stakehole in same hole on E. side.
3	12	6	9	
4	9	5	6	
5	12	11	7	
6	11	6	7	Packing flints tumbled in.
7	11	6	7	Packing flints.
8	13	7 x 5	13 + 2	Packing flints. The extra 2in. conical depth on E. side as if for a pointed post, or for a composite post- and stakehole.
9	13 x 12	7	8 + 5	Packing flints. The extra 5in. conical depth on E. side (as for PH. 8)
10	12	5	12	Conical tendency.
11	4	1½	4	Conical. Possibly only a stakehole, but could be for a pointed post.
12	16 x 14	1	17	Very conical. Packing stones in situ for a c.5in. diam. post.

The ditch between PH. 6 and PH. 7 is only an inch or two (25-50mm.) in depth and has no apparent termination. Chalk has, however, been lost by weathering, or removed, over the causeway (see Sections Fig. 3) and over the very shallow ditch ends. The termination of the SE. ditch is only a little deeper than on the SW. side. One might have expected there to have been another posthole

near PH. 8, thus making the gap or causeway to stop level with the postholes on both sides of the gap. Too much importance should not be placed on this apparent discrepancy of layout, for the ditch is so ill-defined (as it now exists) that no end could be seen in the SW. quadrant and it was only with difficulty that the SE. one was traced. One could walk over the 'solid' chalk at this point and be hardly aware of any dug depression. The surface of the natural chalk of the causeway was smoother than in the ditch bottom, the latter being rough and uneven in places. The solid chalk rises somewhat steeply from the causeway towards the centre of the barrow, also from the SE. and SW. sides, so that from the south, the excavated barrow appeared as a low knoll of chalk.

An irregular depression in the centre of the barrow contained an inverted urn (Fig. 8, 1) which is assumed to be the primary cremation deposit. The vessel, which was much damaged, had been set into a second depression towards the southern end of the larger scoop, and was close to the estimated centre of the barrow (the centre peg being shown by a + in Fig. 2). Some 24in. (600mm.) away to the south was a depression within the main one containing a Beaker sherd and possessing a stakehole. Apparent stakeholes E. of the urn and at the N. end of the large depression were probably caused by rabbits, whereas the southern one was much more convincing as an archaeological feature. Three shallow depressions W. and NW. of the centre, from 4in. to 7in. (100-180mm.) deep cannot be explained, except perhaps as the result of rabbit burrowing. A similar round depression, 3in. (75mm.) deep, was in the scarp of the chalk of the causeway, between PH. 7 and PH. 8. This is not a posthole (apparently) and may again be the result of rabbit activity. All four depressions, however, do resemble some of the shallow cremation holes.

AROUND THE BARROW. The north trial trench produced a hollow (Figs. 2 and 3) some 25ft. (7.5m.) N. of the centre peg, which had an irregular bottom containing a somewhat conical hole and another small circular depression. The contents of the hole and of the lower part of the filling were sterile brown soil, covered with an accumulation of flints in which were two Beaker sherds. At the time it was thought that this might have been a solifluxion hollow (these troubled excavators at the settlement) and time did not permit the feature to be followed. It is more likely man-made, and the hole at the bottom resembles a somewhat conical posthole, though without packing flints. The sterile soil might be explained as possibly wind-blown, while the ditch or pit was open, for it was noted that a combination of rain and high winds during the excavation deposited clean soil in cleared postholes and depressions overnight.

Another pit, with two conical depressions, was found in the SE. quadrant 3ft. (1m.) E. of CH. 4 and the same distance N. of CH. 3. There were many struck flakes in the topsoil over the pit, a hammer

stone and some coarse sherds. The filling of the pit was of flints, not struck, and medium to dark brown soil plus a little fine chalk rubble. Unlike the ditch and the hollows in the SW. quadrant (to be described) this filling was void of pottery, flakes, or any other finds. This feature was again considered on site to be possibly natural (a solifluxion pipe or a tree-root hole). The maximum depth was 2ft. (600mm.). A similar pit 1½ft. (500mm.) deep without any finds in the filling of flints and soil, was encountered *c.* 20ft. (6m.) W. of the centre peg at the start of the W. trial trench.

There was a small pit below the flint spread, 4ft. (1.2m.) N. of PH. 12, again filled with naturally fractured flints and sterile soil. The filling therefore was very different from the nearby ditch filling. This hole, too, was conical, averaging 33in. (840mm.) diam. and 16in. (405mm.) deep, with rough sides. Two other holes, somewhat smaller, were near PH. 2 and PH. 3, with fillings the same as the ditch, being part of it.

The SW. quadrant contained several uneven ditch-like hollows, none of which exceeded a depth of 15in. (380mm.). For the most part they lay below a compact spread of flints and brown soil, with some flake concentrations and a general scatter of struck flint above and passing through the flint layer. The topsoil was deeper in this quadrant especially where the flints had sunk into the hollows below.

FLINT DISTRIBUTION. Fig. 3 attempts to show by diagonal hatching the distribution of flints both nodular and broken (all interspersed with brown soil) as revealed after the topsoil and two concentrations of nodules had been removed. The latter are depicted in Fig. 2, but are omitted for clarity from Fig. 3. It will be seen that the flints, following their usual habit, occupy all hollows. Where not occurring over hollows, the thickness of the flint layer was between 3in. and 6in. (75-150mm.). Struck flakes and waste formed a large proportion of all flints and were easily distinguished by their bluish patination, though some were white patinated, but these were fewer in number. Where flakes were especially prevalent on and in the ground they are shown in Fig. 3 by opposing diagonal hatching. Scattered flakes cover practically the whole of the remaining excavated area, except the extremities of the long trenches and peripheral margins of the NW., NE. and SW. quadrants. There was no physical junction, 'straight-joint' or the like between the SW. ditch flints and those continuing south and west, the only difference appearing to be the greater number of blue patinated flakes in the ditch flints.

Midway along the eastern trench was a flint-knapping area, marked by many flakes, waste and cores; likewise at the SE. corner of the SE. quadrant was a larger than usual number of cores and flint-knapping debris, including a hammerstone of flint, suggesting that

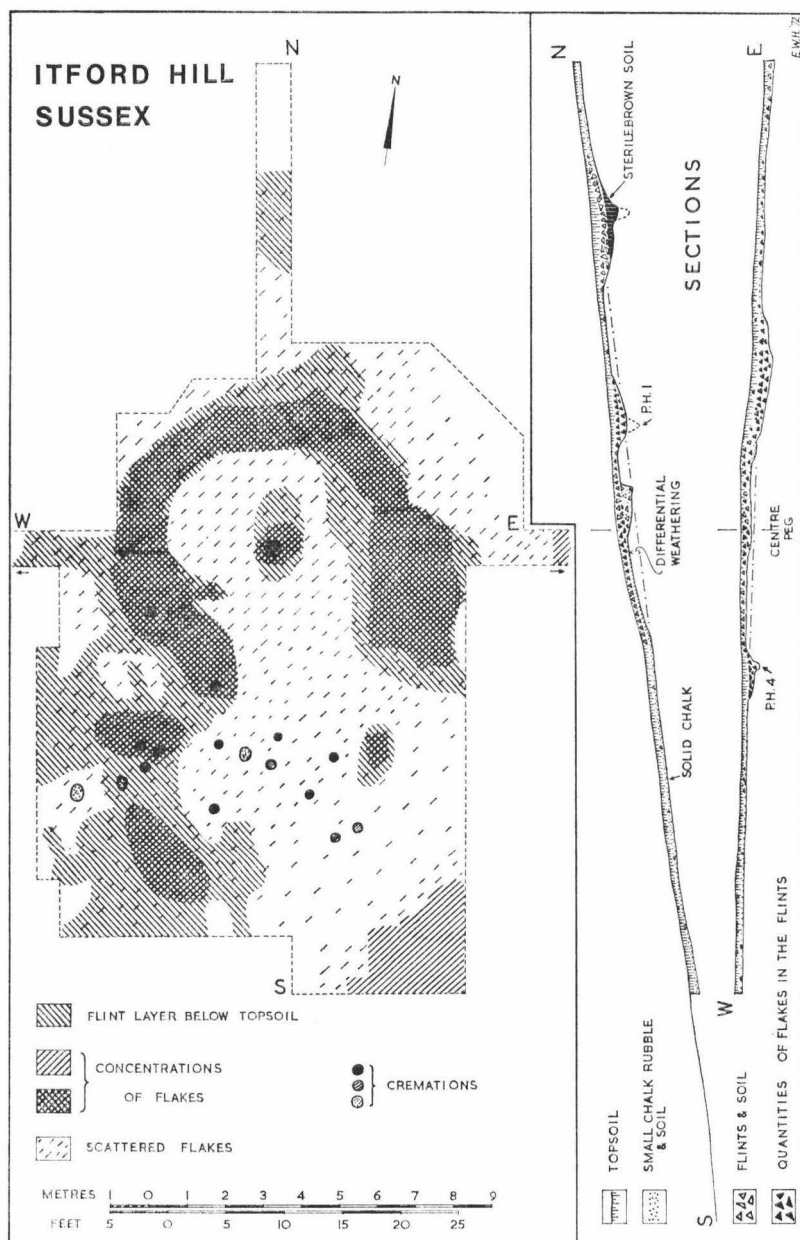


FIG. 3. CEMETERY-BARROW. Distribution plan of flints and flakes (left). Sections (right) at same scale.

this was another actual working area. The concentration of flint nodules adjoining this spot (Fig. 2) if not removed from the barrow capping, or drifted by ploughing, may be raw material for flint knappers. Here, much of the flint was patinated white.

In order to estimate the number of struck flint flakes on the site, several counts were made of measured volumes of flakes, including the surrounding soil, which gave an average of 1,002 (say 1,000) flakes per cubic foot (.028 cu. metre). Allowing for 50ft. (15m.) run of ditch, of which 2½ft. (750mm.) in width is assumed to be massed flint flakes in soil, and (from site experience) taking the thickness as an average of 3in. (75mm.), the volume is 31.25 cu. ft. (0.89 cu. metre), i.e., approximately 31,000 pieces of struck flint. To this must be added, say, one-third, for the two knapping areas and the flakes other than in the ditch, giving a total of rather more than 40,000.

THE CREMATIONS (FIGS. 2 AND 3)

PRIMARY CREMATION. The large urn (Fig. 8, 1) was inverted in the hole near the centre of the barrow, with most of the base and lower walls missing and the remainder in many fragments. The vessel contained much calcined bone infiltrated by soil, 20 flint flakes, a flint scraper, 3 burnt flints and a very small quantity of charcoal. Over and around the urn were 25 flakes, 13 utilised flakes, 2 cores and 46 burnt flints. A stakehole, presumably for marking the spot, was on the south side.

SECONDARY CREMATIONS. There were 16 other deposits or possible cremations in addition to the primary, B.A. urns (inverted) or potsherds being associated with all except C.7 14, 15 and 16. Whole or nearly whole urns (i.e. after restoration as all were broken or crushed in situ) are represented by C.8, 9 and 11; C.10 about 75% complete and C.5, 40%. With the exception of C.12 and 16, cremations were well clear of the ditch, and all but four were situated in the SW. quadrant. No cremations were found elsewhere. Four deposits, C.8, 9, 10 and 14 were below the flint spread outside the ditch in the SW. quadrant. This flint layer contained abraded Beaker sherds as well as Bronze Age sherds and it did not appear to have been disturbed by the plough; neither were there positive indications that cremations had been inserted through the layer. It must be admitted that any disturbance could be hard to detect in an amorphous layer of flints, flakes and soil, the latter being well within the ambit of earthworms. It has been assumed that these cremation deposits were made before the flints were spread. C.12 is close to where the ditch fades out and was flint covered. Here there was no cremated bone but many sherds from a big, cordoned, pot, some of the sherds being right on the solid chalk, while others were found through the flint layer above, with burnt flints. This one may have been inserted through the flint layer. C.16, in the

ditch, had a large number of calcined flints and dark soil in the depression made in the chalk, and piling up above the hole in a rough circle 24ins. (600mm.) diameter. This deposit was, therefore, probably made before the ditch was filled, though it would not be impossible for it to have been inserted afterwards and flints and flakes pushed back without leaving firm traces of disturbance. If C.16 was put in before the ditch was filled, then it could be classed as a *satellite*, rather than a secondary burial, i.e., put in at about the same time as the primary.¹

Each deposit was placed in a hollow or hole dug into the solid chalk (CH. 8, 9, 10, 11, 12 and 14 having their holes wholly or partially in earlier ditch-like hollows), (see Table 2). In seven cases (eight if the Primary is included) the cremation holes were accompanied by a small stakehole, a point of some interest, for it demonstrates that cremations were respected, being marked in some way, utilising a small stake as an upright. Such markers would help to account for the fact that deposits did not impinge on one another, provided that renewals of stakes when rotted were made from time to time.²

Burnt flints, some of which were struck flakes, were present singly here and there throughout the excavated area, there being larger numbers near, or accompanying cremations. Many of these flints showed only moderate changes in structure caused by only one burning when compared with the typical cracked and pock-marked 'potboiler' as found on a domestic site. There were no traces of funeral pyres, burnt areas of chalk, masses of charcoal, etc., but the actual place of burning might not have been too far away, for the presence of struck flakes among the burnt flints may point to local pyres, there being large numbers of flakes in the vicinity of the barrow.

Deposits C.2, 3 and 13 have been shown in Fig. 2 as 'Possible' cremations, because there were no cremated bones present. However, this is possibly unduly pessimistic, for C.2 and C.3 are closely associated with the 5½lbs. of pottery and bone surface finds, while C.13 has only a few scrappy sherds of pottery, but the hole in the chalk has an integral stakehole. Not all cremations have pots and not all the latter are whole or nearly whole. As incomplete pots have been utilised for some of the deposits, so others have what may be only token numbers of potsherds placed underground. Others, like C.14, 15 and 16 are unurned and without B.A. pot-

¹ P. Ashbee, *The Bronze Age Round Barrow in Britain* (1960), p. 41.

² Published plans of B.A. urnfields show that damage to one cremation deposit by another is extremely rare. At Cock Hill, Patching, two cremations out of only three were associated with posts; H.B.A. and M. M. Ratcliffe-Densham, 'An Anomalous Earthwork of the Late Bronze Age, on Cock Hill, Sussex,' in *S.A.C.*, vol. 99 (1961), pp. 78-101, see pp. 87-8.

TABLE 2. DETAILS OF CREMATION AND STAKE HOLES.
ASSOCIATIONS OF POTTERY AND BURNT FLINTS
(Measurements in inches)

CH. No.	CREM. HOLES			STAKE HOLES			No. of Sherds			No. of Burnt Flints	REMARKS
	Top Diam.	Btm. Diam.	Deep	T.D.	B.D.	Deep	B.A.	Beaker			
								In	Out		
P	18 x 15	12 x 9	9				Urn		1	49	
1	8	3	6				25			18	} Plus 5½ lbs. B.A. sherds from surface, also some burnt flints (uncounted)
2	10	H	2				53		4		
3	10	H	4				2				
4	12	H	2				2				
5	14 x 12	H	4	4	2	3	Urn		1	12	Nodules around CH.
6	8	H	5	4	H	2	50			75	2 tiny beach pebbles also.
7	12	2	13	3	H	3	—	3		200	Conical CH.
8	18	H	6				Urn	5		170	20 B flints around urn, 150 tiny do. inside.
9	13	H	9				Urn			12	
10	15	H	8	3	H	3	Urn	1		Many	Urn surrounded with packed burnt flints.
11	24 x 18	15 x 12	10	3	H	3	Urn			Many	
12	24	H	2				Urn	2		12	
13	9	H	1½	3	H	2½	12			5	SH. is inside the CH.
14	11	3	16	2½	H	11	—	1		Many	Conical hole full of burnt flints and 2 pces. fired clay (? loom-weight). SH inside CH. Group of flakes on top of CH.
15	15 x 12	1½	18				—			30	Conical CH
16	13 x 9	H	9				—			142	

P—Primary H—Rounded Hollow SH—Stakehole
IN—Inside the urn or CH. OUT—Outside the urn or CH.

TABLE 3. CREMATIONS

Crem. No.	Urned with bone	Urned without bone	Unurned with bone	Unurned without bone	Possible—no bone	Burnt flints	Charcoal/Dark soil	Stakehole	Unable to sex	Possible sex	Child	Not an infant	Young Adult	Middle-aged	Elderly	
P	X					X	X	X		M						X
1	X					X			X		X					
2					X											
3					X											
4	X						X		X			X				
5	X					X		X		F			X			
6	X					X	X	X	X			X				
7			X			X	X	X	X		X					
8	X					X	X		X	F			X			
9	X					X	X			M			X			
10	X					X		X	X		X					
11	X					X		X		F			X			
12		X				X										
13					X	X		X								
14			X			X	X	X	X							
15				X		X	X									
16			X			X	X		X							

sherds, and C.15 has no bone. Nevertheless, burnt flints and dark earth or charcoal are associated with the unurned burials and these are taken as definite cremation deposits.

A detailed description and discussion of the cremated bones by Dr. H. B. A. Ratcliffe-Densham will be found on p. 113.

DEPRESSIONS A, B and C (Fig. 1). These looked like levelled hut platforms cut into the 7-degree natural slope of the hillside. Each had a roughly oval, almost flat, area (which made them look like depressions in the sloping field, but none was actually concave), some 12-20ft. (4-6m.) E.-W. and 12-15ft. (4-5m.) N.-S., there being a faint suggestion of a scarp on the N. side, never more than 6in. (150mm.) high (see plan of Ctg. C., Fig. 4, lower). Surface finds suggested that some investigation should take place, all three sites having burnt flints and flint flakes (many of which were blue patinated) on the surface. In addition, there were at:— B. One fragment of vitrified sandstone, 1 white spatulate flake tool, 1 chopper-like piece of waste flint. C. One white sidescraper, 2 huge, undamaged nodules from just S. of the site, possibly raw material for knapping.

CUTTING C. (Fig. 4, lower). A thin stoneless topsoil covered a flint layer which spread over the greater part of the area, leaving bare patches in places. Where not found later to be over hollows, the flints were only one or two deep, principally medium and small in size, though with a few larger flints among them. The same applied where flints were in the hollows, all being mixed with brown soil (as the topsoil); everywhere there was a sprinkling of burnt flints and blue patinated flint flakes, very reminiscent of the hollows around the barrow. A local concentration of struck flakes occurred in the centre on the E. side. Flakes and burnt flints were visible on top of the flint layer in addition to being mixed with the flints below. Flakes tended to be scarce at the N. end of the cutting. The slight scarp noticeable before excavation and which led to the investigation, was found to be only the change in level plus irregularities in the solid chalk where the central bare patch met the northern flints.

Irregularly shaped hollows were encountered in the NE. part, up to 15ins. (400mm.) below the solid, filled with flints, flakes and here and there, a burnt flint. What looked like the end of a curving ditch was met in the southern half of the cutting. Between 4-5ft. (1.2-1.5m.) wide and 2ft. (600mm.) deep, it had a rounded bottom, in which was a 6in. (150mm.) layer of very compact small chalk rubble and silt. This contained a small piece of ox tibia, near the SW. corner. The bottom sloped upwards at the eastern termination, the compact rubble and silt fading out some feet before the end. There were patches of fine chalk rubble and brown soil above the base layer and then occurred a concave layer of flints and soil. Once again, this layer contained in it blue flakes and burnt flints.

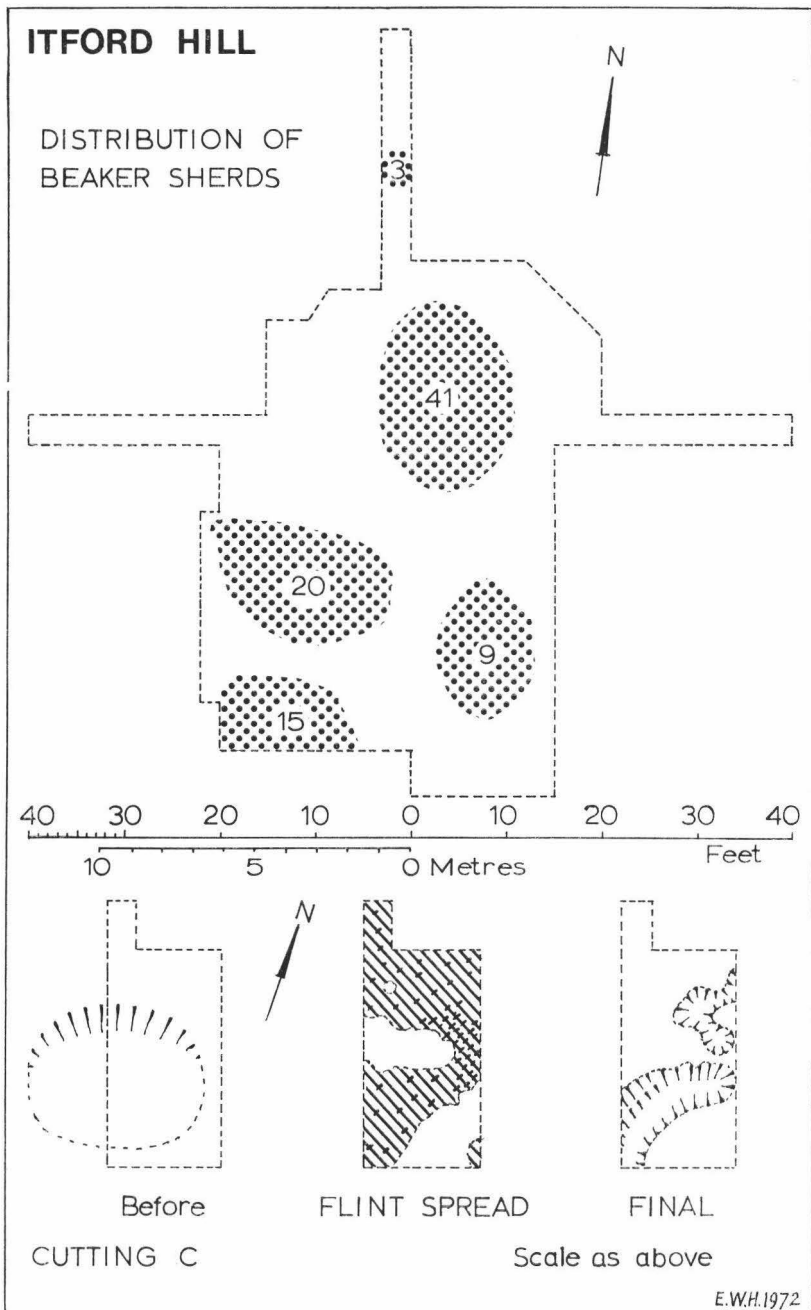


FIG. 4. CEMETERY-BARROW. Upper. Distribution of Beaker sherds.
Lower. Plan of excavation at Cutting C.

No pottery came from the N. section, but some sherds of M.B.A. pottery, of Fabric B. (see Pottery report, p. 106), a rim, part of the body and one lug from one pot closely resembling Cremation 5 urn (Fig. 9, 10), were below the flint layer, on the solid chalk, in the centre of the hollow, 2ft. (600mm.) from the end. One foot (300mm.) W. of the sherds, 8ins. (200mm.) down in the flint layer and almost on the solid, was a collection of 14 rounded beach pebbles (pigeon to hen egg size), a burnt flint and a large piece of flint waste, one edge being in the form of a chopper. One coarse Fabric B sherd and a tiny beach pebble came from the group of flints in the SE. corner.

The number of struck flakes was not taken, except for a random sample of 200,¹ but judging by the size of the heap and the sample, there would be between 1,000 and 1,200 flakes present. Burnt flints would total about 100.

As the curved ditch might have been part of a penannular ditch like that at the barrow, a trial trench was made from the SE. corner of Ctg. C. going in a SE. direction sufficiently far to cross any ditch that belonged to a circle of which the exposed portion of Ctg. C. was part. No ditch was encountered, only two small patches of flints and a cluster of white patinated flakes and waste, 2 cores and a few burnt flints, some 8-12ft. (2.5-4m.) SE. along the trench.

CUTTINGS A and B. There was no time for large excavations, only one trial trench across the centre of each 'depression' or 'platform' in a N.-S. direction. Neither trench produced anything other than networks of rabbit tunnels and no flint layers or other features were encountered. These two sites were written off as rabbit warrens. In 1971 rabbits were making and using burrows not far from the excavations and it was noticeable that where several holes clustered together, the rabbits tended to tunnel in a northerly direction, rather than to E. or W., i.e. into the slope of the hillside—the most natural way. The consequence was that the ejected chalk and soil was thrown downhill where it would weather and spread. Later, tunnels could collapse and a roughly level 'platform' would come into being.

INTERPRETATION OF DEPRESSION C. The curved 'ditch' and the strangely shaped hollows in Cutting C. are unlikely to be of natural origin because if they are the product of solifluxion in periglacial times one would expect to see the typical 'ginger'-coloured, sterile, clayey soil in the bottoms (well known to excavators on chalk and which was prevalent in places at the Itford Hill settlement), which was absent. Potsherds and pebbles were at the base of the flint layer, therefore the hollow was open and only partially silted up with small chalk rubble from the primary weathering before the flints,

¹ Too late to be added to Richard Bradley's statistical report on the flints.

burnt flints and flakes were deposited. All these materials and the hollow itself can be matched at the cemetery-barrow site, which similarities reinforce the theory that the ditch-like hollows around the barrow are the work of the people who lived at the settlement.

Depression C probably was another place on the hillside not far from the settlement where raw material for flint knapping was gathered and possibly extracted from dug hollows and pits before being worked into finished implements close at hand. The flakes are testimony of such activity.

GENERAL INTERPRETATION AND DISCUSSION

For the first time in Sussex a barrow possessing a post-circle¹ set in a penannular ditch has been excavated. The barrow had a low mound incorporating flint nodules, but which would have been somewhat higher originally, part being spread downhill during the more recent past by ploughing and more depth having been lost through chemical weathering of the chalk rubble capping. The barrow ditch and other hollows in the SW. quadrant appear to be quarries for the chalk and flint nodules, although the main ditch also performed the function of surrounding the central cremation. Masses of flint flakes, waste, cores and a few artifacts were in the filling of the ditch and over some of the cremations in the SW. quadrant. Tiny spalls of flint and trimmed nodules in the ditch show that some knapping took place there, while utilised flakes suggest that some of the flint flakes were brought in from knapping sites outside the ditch, of which two were found. Ritual knapping and the deposition of large quantities of flint waste, especially in the barrow ditch, seem to have been established beyond doubt. Ritual knapping has been noted elsewhere, especially at a barrow at Amesbury². Indeed, the barrow may have been situated where it is because of the quantity of flint available at what could well have been an already established flint-working site. The waste flint in the SE. corner working area, being in a more advanced state of patination (more white than blue) supports this view. Other reasons for siting the barrow midway between the settlement and the highest part of the Downs are unlikely to be apparent to 20th century people. One factor sometimes applicable to barrow siting is 'false-crested,' but when viewed from the top of the bank on the N. side of Enclosure IV, the barrow is not false-crested.

¹ In 1933, following work by van Giffen in Holland, L. V. Grinsell carried out a small excavation at a bell-barrow on Bow Hill, Sussex, to see if there were postholes in the berm. No postholes were found. *S.A.C.*, vol. 82, (1941), pp. 115-17.

² P. M. Christie, 'A Barrow-Cemetery of the Second Millenium B.C. in Wiltshire, England,' in *P.P.S.*, vol. 33 (1967), pp. 336-66, see pp. 357-8. Cf. P. Ashbee, *op. cit.*, p. 55.

Barrows with stake circles are not common in Britain,¹ and those that are found have, as a rule, holes for flimsy stakes rather than fairly substantial posts. Nearly all are associated with phases of the Bronze Age earlier than that of Itford Hill and the same applies to the presence of worked flints in quantity at barrows. These factors, when coupled with flintwork techniques, resembling the Neolithic, suggest the survival of earlier practices through folk-memory. Barrow 2 at Crichel Down, Dorset,² while not strictly comparable with Itford Hill, has a penannular ditch and then inside, in one quadrant, another penannular trench in which are postholes, the same number as at Itford Hill, 3ft. (1m.) apart (Ashbee's Category B.1.)³ The diameter of the inner structure is about half that of Itford Hill.

The function of stake or post circles is not known, but they have been likened to houses or mortuary huts. Most circles seem to have been of a temporary nature, the stakes being withdrawn at an early stage,⁴ and this agrees with the evidence at Itford Hill. That the postholes at Itford Hill represent the traces of an actual hut has been considered, but rejected primarily because of the slope of the ground which would make occupation difficult. A study of coeval settlements will show that hut sites are invariably made flat by digging into the hillside and forming a level platform whenever required. The diameter of the barrow postholes agrees reasonably well with some of the huts of the settlement, and on paper, the plan looks well as a hut, but it does not agree with alternative interpretations of hut plans put forward recently.⁵ Furthermore, from a practical point of view the slope of the ground would make the space within the posts a most undesirable residence. A symbolic hut is a possibility.

The tendency towards some postholes being conical at the barrow, the cemetery and the settlement, suggests a common practice and assists in linking all together as products of the same people. Two cremation holes and two postholes (CH. 14 and PH. 1, CH. 15 and PH. 12) when paired have almost identical dimensions and might conceivably have been made by the same person.

¹ P. Ashbee, 1960, *op. cit.*, pp. 60-5 and more recently published papers, e.g., *P.P.S.*, vols. 26 (1960) (Arreton Down, Isle of Wight), 33 (1967) (Amesbury).

² S. and C. M. Piggott, 'Excavation of Barrows on Crichel and Launceston Downs, Dorset,' in *Archaeologia*, vol. 90 (1944), pp. 47-80.

³ P. Ashbee, 1960, *op. cit.*, p. 65, Fig. 22.

⁴ *ibid.*, p. 65.

⁵ *P.P.S.*, vol. 35 (1969), pp. 345-51; *Current Archaeology*, no. 21 (July, 1970), pp. 267-70.

The presence of Beaker sherds, coupled with the fact that most known stake or post circles in barrows are early and, not as a rule, found in the latter part of the Middle Bronze Age, might lead to the assumption that we are dealing with a Beaker barrow with later burials. The absence of any Beaker interment, coupled with the central burial being accompanied by a definitely later urn, enables any thought of a Beaker barrow to be dismissed.

South and SW. of the barrow was the cemetery area containing secondary urned and unurned cremations representing a minimum number of 14 persons, 2 of whom were middle-aged or elderly, 3 young adults, 3 individuals—'not infants,' 4 children, and two bone deposits yielded no information. Two other deposits had no bones, but are considered to represent cremations, which would bring the total to 16, and the 3 'possibles' (almost certainly cremations) give a maximum number of 19 individuals. Not a large number and only about half the size of the urnfield at Steyning Round Hill.¹ If this is the only cemetery-barrow or urnfield connected with the Itford Hill settlement (and there is no guarantee that it is, or that it does not contain burials from other M.B.A. groups), the number of deaths does not seem to be an unreasonable one for the life of the settlement suggested by Burstow and Holleyman of about 25 years.

It is obvious from at least two cremations, C.8 and C.10, which were sealed by a flint layer, that they had been buried with parts of the pots missing. This was confirmed when it was found that a section of rim and decorated shoulder of a pot from the settlement, excavated over 20 years ago, belonged to the same vessel as C.10 (see p. 110). Others such as C.5, or the primary urn had so much of the walls and base missing, that even if broken by the plough, not being protected by a thick flint layer, a sufficiently large area of ground was uncovered by excavation so that some missing sherds ought to have been found. Repaired pots (C.5 and C.8) were favoured also. It seems not unreasonable to conclude that, despite the need felt by M.B.A. people for ritual activity involving barrow building, cremation and burial of token amounts of burnt bones² from the deceased (or occasionally, no bone at all), sometimes in pots, they were content to utilise on occasion broken or mended pots that had already exhausted their useful life. Some burials received only a few token sherds and these not necessarily from pots in current use, e.g., C.7 and C.14 (unurned with bone in conical holes), had only Beaker sherds.

¹ G. P. Burstow, 'A Late Bronze Age Urnfield on Steyning Round Hill, Sussex,' in *P.P.S.*, vol. 24 (1958), pp. 158-64.

² It was noted at Pokesdown, Hants., that only 56% of urns had cremated bones with them and in no instances were enough bones found to represent the complete human skeleton. R. C. C. Clay, in 'A Late Bronze Age Urnfield at Pokesdown, Hants.,' in *Antiq. Journ.*, vol. 7 (1927), pp. 465-84, see pp. 468-9.

Unlike the great magnates buried in earlier rich Wessex barrows, the Itford Hill burials suggest that they represent the remains of humbler folk to whom death was no stranger. Not for them the trappings of rank or fortune, but the cast-off pots as used in daily life.¹ Yet overall there is a feeling of orderliness and decency. Respect is shown by the trouble taken to cremate (no easy task) and bury, some at least, of the remains, or burnt soil, in the customary resting-place. We can only speculate as to the deaths by natural causes or human tragedy of the double burial in Cremation 8, which may well be those of mother and child.

DATING. It is fortunate that well before the discovery of the barrow Professor Stuart Piggott had sent a sample of the carbonised barley from the Itford Hill settlement² to Groningen for a radiocarbon test. This has been given as 2950 ± 35 years B.P. (GrU-6167), which equals *c.* 1000 B.C., but this is uncorrected for the bristlecone pine curve and a *calendar* date is likely to be around 1200 B.C.,³ which appears to be a very satisfactory one archaeologically. As the cemetery-barrow is considered to be coeval with the settlement, the same date would apply to both.

The total weight of charcoal found with the cremations (see p. 113) is little more than 5 grams and is, at the present time, insufficient for radiocarbon dating purposes.

DIFFERENTIAL WEATHERING. In 1957 Professor R. J. C. Atkinson reminded archaeologists that the so-called 'solid' chalk on downland sites (also other subsoils) is particularly vulnerable to chemical weathering by percolating surface water, which is, in effect, a weak acid.⁴ The rate of weathering is variable being slowed down underneath banks and mounds because of the protection afforded by the thicker soil above. A short list of sites was published of sections showing significant differences in level between the subsoil beneath a bank or mound, where it has been protected from weathering, and that outside the earthwork, where it has not so been protected.⁵ Included in this list is one (chalk) Sussex example, one of the B.A. enclosures on Plumpton Plain, where the chalk below

¹ Our member, Miss M. Ash, has pointed out that the finds made at the cemetery-barrow have their echo in *Hamlet*, Act. V, Scene I, in the speech of the First Priest:—

'She should in ground unsanctified have lodged till the last trumpet: for charitable prayers *shards, flints* and *pebbles* should be thrown on her; yet here . . .'

² *P.P.S.*, vol. 23 (1957), pp. 206-9.

³ For a simplified explanation of the effect of the bristlecone pine C14 dating see *Current Archaeology* no. 18 (Jan., 1970).

⁴ R. J. C. Atkinson, 'Worms and Weathering,' in *Antiquity*, no. 124 (Dec., 1957), pp. 219-33, see pp. 228-33.

⁵ *ibid.*, pp. 232-3.

a bank is *c.* 10in. (250mm.) above the general level.¹ Published sections of a barrow at Stanmer, near Brighton, show the solid chalk to be 4-5in. (10-13cm.) higher below the mound in a N.-S. direction (3-deg. slope), but there is no change in level from W. to E. (5-deg. slope).² The covering mound of large flints and soil, which had been ploughed in the past, in 1950 was only 12in. (300mm.) thick, very little more than at Itford Hill.

Fig. 3 (Sections) shows the solid chalk of the Itford Hill barrow to be *c.* 10in. (250mm.) higher than the surrounding chalk in a N.-S. direction (7-deg. slope) and *c.* 6in. (150mm.) from W. to E. (2-deg. slope). The N.-S. section shows a 6in. (150mm.) change of level for a short distance outside the N. ditch.

It has already been mentioned that there was little, if any, small chalk rubble within the penannular ditch, but the raised surface of the natural chalk within the ditch (Fig. 3) means that there must formerly have been a mound which afforded sufficient protection to permit the natural chalk to weather at a slower rate than that outside the ditch, which was not so protected. The material forming the mound, apart from the flint nodules, if following normal barrow construction, would be the chalk rubble obtained from the ditch and possibly from the nearby hollows and pits. Such chalk rubble will have been dissolved at a faster rate than the surrounding natural chalk, simply because it has been broken up and therefore presents a larger surface area per unit volume than does the natural chalk, even though the surface of the natural has itself been broken up by frost and the action of roots. From this it follows that the spoil from the hollow in the north trench was deposited to the south and accounts for the differential weathering outside the ditch to the N. side.³

It is clear that chemical weathering could account for the shallowness of some of the cremation holes, e.g., C.5, where the hole is only 4in. (100mm.) deep. The urn, if inserted unbroken (which is doubtful), would have projected *c.* 7in. (180mm.) above the hole in the chalk into the topsoil, if there were no such factor as chemical weathering to affect the chalk level. The extremely shallow termination of the SE. ditch and the absence of an end to the SW. ditch can also be explained as caused by the natural process of chemical weathering over more than 3,000 years.

¹ *P.P.S.*, vol. 1 (1935), pp. 23-5, Fig. 9.

² *S.A.C.*, vol. 98 (1960), pp. 133-6.

³ The writer is grateful to Professor R. J. C. Atkinson for advice on chemical weathering.

THE FINDS

LATER MATERIAL. A small number of Romano-British potsherds and some fragments of a sandstone rotary quern were found in the soil and flints above the NW. quadrant of the barrow. Pottery of this period is also recorded in several areas of the settlement.¹

PEBBLES. Twelve water-rolled beach pebbles from marble to pigeon's egg size were found in and around the barrow, plus a group of 14, rather larger in size, from Cutting C. Such pebbles would be readily available from the estuary or seashore not far away. About 50 are recorded at the settlement.²

PEBBLE ? RUBBER. Fig. 5, 9. One quartzite pebble, originally oval, but broken and all waterworn, was found in the ditch filling E. of PH. 9 and PH. 10. There were no distinctive polishing marks on it.

MARCASITE. Several nodules of marcasite or iron pyrites were recovered, but as such material is commonly found in the chalk they are not likely to possess any archaeological significance. Similar nodules were found at the settlement.

WHETSTONES. Fig. 5, 8. The upper part of a small whetstone in which there is an hourglass perforation, a shallow V-shaped groove and scratches on one face, while other faces and edges show signs of wear. Such whetstones are commonly found in Bronze Age barrows, though usually earlier within the period.³ It was found at the base of the topsoil c. 2ft. (600mm.) SE. of the pebble (Fig. 5, 9). Dr. Ian Cornwall of the Institute of Archaeology, London, kindly tested the whetstone chemically to see if any traces of metal remained from the sharpening of metal tools. He reported that brown spots present over the whole of the stone and not only the abraded parts are iron oxide, so probably are not any residue of a metal tool sharpened by the stone; the iron could easily have been deposited from the soil since burial. Tests for copper and tin were negative. A thin-section prepared by Mrs. M. Barton and the specimen were submitted to the Institute of Geological Sciences, London, where it was kindly examined by Mr. R. W. Sanderson, who reported as follows:

Greywacke siltstone. A brown fine grained rock composed of angular grains of quartz (0.035mm. in diameter) and a little feldspar with abundant biotite and muscovite flakes averaging 0.06mm. in length. The clastic grains are set in a plentiful cement of iron-stained clay mica, with some sericite. This specimen is of a Palaeozoic type and may be derived from the SW. peninsula or Brittany.

¹ P.P.S., vol. 23 (1957), p. 200.

² *ibid.*, p. 204.

³ E.g., Guide Catalogue of the Neolithic and Bronze Age Collections in Deves Museum (1964), nos. 267, 345. The Hove Barrow, illustrated in E. C. Curwen, 1954, *op. cit.*, Pl. XIII. Another more recent find was at Chalton, *Antiq. Journ.*, vol. 50 (1970), p. 9, Fig. 5, 2.

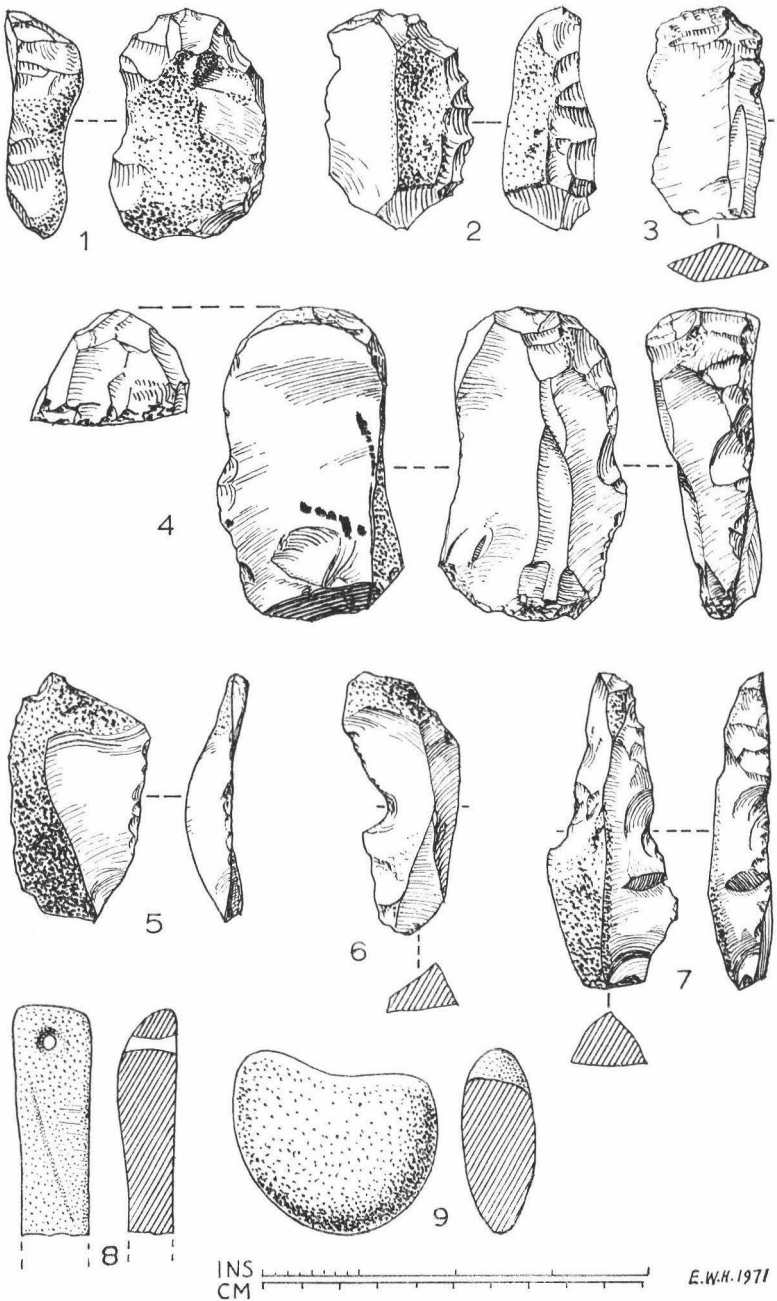


FIG. 5. ITFORD HILL CEMETERY-BARROW. 1-7, Flint artifacts (silica lustre on 4 shown in solid black). 8, Whetstone. 9, Quartzite pebble.

Not illustrated. A second broken whetstone was in the topsoil above the knapping area in the S. part of the SE. quadrant, its present length being 3½ in. (88mm.), av. width, 1½ in. (37mm.) and 1 in. (25mm.) thick; all faces are much worn. It resembles the usual type of bar-whetstone used for many centuries until the present day for sharpening scythes, sickles and hooks. Dr. I. Cornwall found only ferruginous spots on the stone (as above) and he considers it too coarse for use on bronze tools. It is probably of medieval or more recent date. Sectioning and examination were carried out as for the first whetstone and Mr. Sanderson's report follows:

Brown medium grained feldspathic sandstone. This rock is composed mainly of angular to subangular grains of quartz and feldspar averaging 0.33mm. in diameter. Grains of quartzite, chert, flakes of muscovite and zircon are uncommon constituents. There is a sparse cement of kaolin and clay mica concentrated locally and some secondary overgrowths on the quartz grains. Rock of this type is common in the Upper Carboniferous (Millstone Grit) strata of the Pennines, e.g. Yorkshire, Derbyshire. However, erratic fragments are also abundant in the Glacial Drift deposits of Eastern England.

Mr. Sanderson also mentioned that there is the possibility in both the above cases that the material was transported by glaciers during the Ice Ages and redeposited in a quite different area before their utilisation by man.

THE FLINT INDUSTRY

By RICHARD BRADLEY

Fig. 5, 1-7 illustrates a selection of flints found at the cemetery-barrow.

An unusually large quantity of worked flint was represented on the site and, even though the circumstances under which the excavation was carried out prevented its systematic collection, representative samples are available for analysis. The details of these are as follows:—

Raw Material. All the flints examined made use of rough, heavily weathered nodules indistinguishable from those making up the barrow. Three sources can be suggested. Some of the material may have been gathered from areas originally covered by Clay-with-Flints, while other nodules might be collected where seams within the natural chalk outcropped on the sloping hillside. A third contributory source might be the barrow ditch and nearby hollows which certainly contained material of this type. It is possible that much of this material was originally exposed in cultivation and that its incorporation in a burial mound was partly determined by the process of land clearance.¹ Frost damage to nodules exposed in this way might be one explanation for the rarity of wholly cortical flakes in this group.

¹ This point has been mainly discussed for the Highland Zone. See for example, A. Graham, 'Cairnfields in Scotland,' *Proc. Soc. of Antiq. of Scotland*, vol. 90 (1956-7), p. 21-3.

Cores. Despite the nature of the excavation, it is considered that most of the cores upon the site were recovered (54 found). A random sample of 50 of these has been examined on the lines set out by Clark.¹

Type A.	One platform:						
	(i)	Flakes removed all round	..	..	..	7	14%
	(ii)	Flakes removed part way round	..	..	..	18	36%
Type B.	Two platforms:—						
	(i)	Parallel	..	..	..	6	12%
	(ii)	At oblique angle	..	..	..	6	12%
	(iii)	At right-angles	..	..	..	2	4%
Type C.	Three or more platforms:—	..	..	..	..	7	14%
Type E.	Keeled, but with one or more platforms:—	..	..	..	..	4	8%
						50	

From this it appears that the majority of the nodules were systematically exploited over limited areas. Half the cores had only one platform, while only 14% had more than two. The rarity of flakes with markedly obtuse angles between the bulb and platform argues against the use of alternate flaking techniques. The cores themselves are irregular in outline with platforms which give no evidence of preparation. Some flakes were struck directly from the cortex while the cores are severely battered throughout and show signs of many mis-hits. The flake scars are deep and sometimes stepped, though the poor quality of the flint may be partly responsible. None of the cores had been retouched but seven examples of average weight 10ozs. (283grams) had been used as hammerstones. The average weight within the sample as a whole was 11ozs. (312 grams), while maximum dimensions ranged from 4 to 10 cms. It is possible that larger nodules in the cairn showing single flake scars were also meant originally as cores.

The total number of cores is estimated as less than 100 and this raises problems in view of the vast number of flakes encountered in the excavation. In a closely associated group of over 150 flakes only two cores appeared, while the imbalance generally may be much greater. It is possible therefore that the cores described here are those which were found unsuitable for further use and that the majority were worked right down. Another suggestion, discussed below, is that only the earlier stages of knapping were carried on at this point and that the partly worked cores were then taken elsewhere.

¹ J. G. D. Clark, 'Excavations at the Neolithic site at Hurst Fen, Mildenhall, Suffolk, 1954, 1957 and 1958,' in *P.P.S.*, vol. 26 (1960), pp. 202-45, see p. 216.

Flakes. The estimated number of flakes on the site may have been in excess of 40,000. Because of the limited time available for excavation, it was quite impossible to recover all of these systematically, but a closely associated group of just over 150 taken from one square foot can be analysed in detail together with a random sample of the residue. In the first group 12% of the flakes showed signs of use and accordingly a sample of comparable material will be analysed in this paper.

In the associated group of 167 flakes the length and breadth of each item was incorporated in a series of histograms (Fig. 6, A). For this purpose *primary* flakes are defined as those retaining all their cortex, *secondary* flakes are partially cortical and *tertiary* flakes as those entirely lacking in cortex. While the scarcity of primary flakes (9%) has already been mentioned, the small number of non-cortical flakes (25%) presents another problem. Even though secondary flakes are both large and frequent (66%), it is just possible that the half-used cores might have been removed for further work elsewhere. More probably the size of the present sample is insufficient.

The flakes as a whole lack secondary retouch while the platforms are often heavily battered and may retain traces of cortex. The prominence of the bulb varies considerably. The flakes are fairly small and squat with a most common length : breadth ratio of 7:5. Examples in which breadth exceeds length occur fairly frequently. In the detailed sample the shape of the flake varied according to the stage at which it was detached (Fig. 6, A). The most frequent length:breadth ratio on secondary flakes was 7:4 while on tertiary flakes it was 1:1.

A random sample of another 200 flakes was examined for further evidence of shape. For these purposes *blades* were distinguished as parallel-sided flakes with a minimum length:breadth ratio of 2:1. These made up only 11% of the total. The lengths of all items in this sample were also recorded in two histograms for comparison with the utilised material discussed below (Fig. 6, B). The results are essentially compatible with the figures already discussed though the rather skew distribution of the flake lengths suggests that the smallest examples may be under-represented in this group.

Utilised flakes. In the associated sample 12% of the flakes were found to have been utilised. They could be distinguished by persistent edge damage patterns or by areas of silica lustre usually upon the dorsal surface. A random sample of 100 such flakes has been examined in detail. Again a basic shape classification has been adopted and lengths are recorded in two histograms (Fig. 6, B). It appears from this that the proportion of blades was as high as 28% compared with 11% amongst the unused waste. With so few blades overall the lengths do not allow close comparison,

but the flakes proper are longer than those left unused. Since the distribution of utilised flakes approximates to a flattened normal curve it is likely that a full range of material is represented in this sample.

Implements. As far as possible an attempt was made to recover all implements in this large assemblage. Even so only 37 items were recovered. Details are as follows:—

Scrapers. A useful group of 33 scrapers is represented. Of these 8 use primary flakes, 17 secondary flakes and 8 tertiary flakes. The quantity of primary flakes contrasts with their rarity in this assemblage as a whole. Since the forms are essentially symmetrical they may be classified according to the scheme set out by Clark.¹

A. End scrapers:—		C. Disc scrapers:—	5
(i) Long ²	9	D. Side scrapers:—	
(ii) Short	15	(i) Long	2
		(ii) Short	2

These scrapers are sparsely but fairly finely worked. Some scale flaking is represented, though particularly large areas of cortex remain on the dorsal surface. Almost all could be the product of direct percussion. The bulbs, with one exception, have not been removed and retouch seems to be confined to the dorsal surface. Despite the size of this sample some attempt at metrical analysis has been made. The results are given in a set of histograms (Fig. 6, C). These confirm the tendency for the scrapers to be relatively short and squat with a preferred length: breadth ratio of 5:4. The angle of retouch is most often between 60° and 70°, though the overall range is between 50° and 100°. The thicknesses show no clear tendency and run from 5mm. to 25mm. with the majority in the lower part of this range. Their affinities will be discussed below.

Miscellaneous. Only three retouched knife fragments have been recorded. One example of steep triangular section has two finely retouched edges and might also have served as a borer (Fig. 5, 7, from NW. ditch filling). The remaining two are roughly parallel-sided flakes with fitfully retouched edges. The majority of the cutting equipment is probably represented amongst the utilised flakes. In addition to these one deliberately notched fragment was recorded (Fig. 5, 6, with C.2). Finally three unworked flint nodules are included each with local areas of battering suggesting use as hammerstones. Their average weight is 11ozs. (312 grams). A further flake with local battering seems to have a similar source.

Discussion. At the outset it is important to consider how far this assemblage may include Beaker survivals contemporary with the sherds reported on p. 101. In this group, however, there are

¹ *ibid.*, p. 217.

² These are defined by a minimum length: breadth ratio of 3:2.

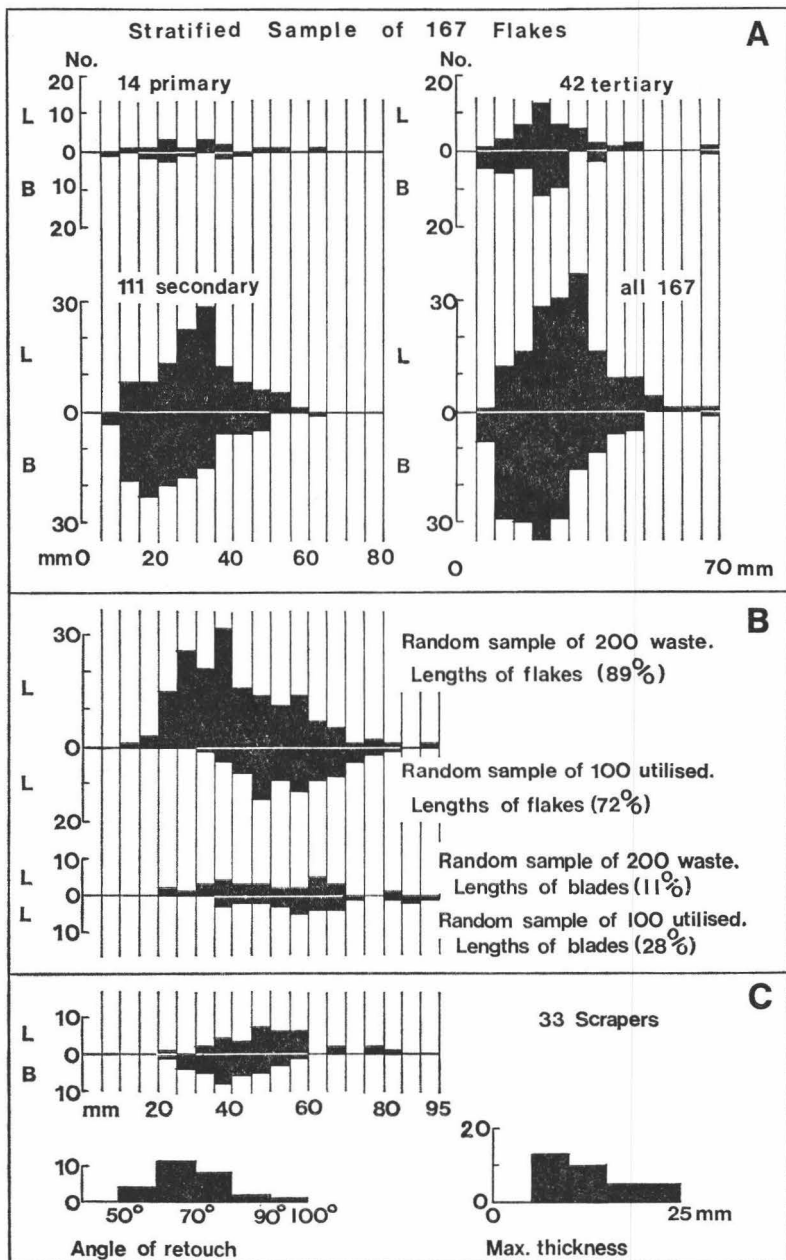


FIG. 6. ITFORD HILL CEMETERY-BARROW. Histograms of flints.

only five scrapers of the commonest Beaker form, Type C, while the prevalence of broad squat flakes again suggests only a limited Beaker presence while the tendency of most histograms towards a normal curve suggests that this assemblage is substantially homogeneous. This may not apply to all the scrapers. In the discussion which follows therefore it will be assumed that the greater part of the industry is contemporary with the cremations on the site.

In seeking the affinities of this industry a number of characteristics can be considered. The range and proportions of core types themselves closely compare with the published figures for Durrington Walls in the Late Neolithic,¹ though here they could be an unrepresentative residue in a site where most nodules were completely worked. This imbalance between the number of cores and flakes has not been discussed for the Bronze Age, but is one which seems to increase throughout the Neolithic period, although the ratio here cannot be nearly matched. The flakes align themselves even more plainly with the native Late Neolithic tradition and most closely compare in shape with those from the West Kennet Avenue² and Durrington Walls. In the Early Bronze Age there is a parallel at Oakley Down in Dorset.³ On each site a proportion of the flakes have greater breadth than length. In size, too, the material in these four groups is virtually the same. The proportion of long narrow flakes is equally more limited on these sites than on the late Beaker site at Belle Tout, where some contribution from the indigenous tradition itself seems likely.⁴

The scrapers compare very closely with those from the settlement nearby and with a larger assemblage from a similar site of this period at Thorny Down in Wiltshire.⁵ The latter shares the clear tendency at Itford Hill towards bold stepped flaking, while the illustrated scrapers at least retain substantial areas of cortex and favour short squat flakes. These features are shared with a broadly contemporary assemblage from Mildenhall Fen in Suffolk.⁶ Here too there is evidence for many mis-hits and little sign of pressure flaking. Apart from the possible survivals at Itford Hill, direct percussion could have been used on all these sites. At Mildenhall

¹ G. J. Wainwright and I. H. Longworth, 'Durrington Walls: Excavations 1966-1968,' in *Soc. of Antiq. Res. Rpt. XXIX*, (1971), pp. 156-81.

² I. F. Smith, *Windmill Hill and Avebury* (1965).

³ D. A. White and R. Reed, 'The Excavation of a Bowl Barrow at Oakley Down, Dorset, 1968,' in *Proc. Dorset N.H. & A.S.* vol. 92 (1970), pp. 159-67.

⁴ R. Bradley, 'The Excavation of a Beaker Settlement at Belle Tout, E. Sussex,' in *P.P.S.*, vol. 36 (1970), pp. 312-79.

⁵ J. F. S. Stone, 'The Deverel-Rimbury Settlement on Thorny Down, Winterbourne Gunner, South Wiltshire,' in *P.P.S.*, vol. 7 (1941), pp. 114-33.

⁶ J. G. D. Clark, 'Report on a Late Bronze Age Site at Mildenhall Fen, West Suffolk,' in *Antiq. Journ.*, vol. 15 (1936), pp. 29-51.

Fen disc and end-of-blade scrapers were absent, but it would be dangerously subjective to assume that the few examples on the present site must therefore be survivals. On this site the less obtuse bulbar angles remain another point of difference.

In dimensions these scrapers again come closest to the Late Neolithic material from Durrington Walls. The very skew distribution of thicknesses make comparisons more difficult, though the relative thickness of Late Neolithic scrapers has been attributed to core preparation which is not in evidence here. Finally the preferred angle of retouch is more closely matched in native than in Beaker contexts. The other implement types are undiagnostic.

This is the first group of later Bronze Age flints which has been examined by metrical analysis and it is unfortunate that so little of related date is available as comparative material. Even so the indications of a distant background in Late Neolithic and Early Bronze Age flint working are not to be set aside any more than the signs of a comparable tradition in the early Iron Age evidenced at West Harling.¹ Despite the time span involved the recognition of the early roots of this material only matches the increased appreciation of ceramic continuity over this period.²

Two final points deserve brief comment. Firstly the complete contrast between this very prolific assemblage and the relative rarity of flint on the settlement site should be considered. It may be argued that the contrast is principally a functional one and that it was more convenient for flint knapping to take place where the raw material had been gathered in quantity. It is possible that the apparent rarity of flint on other sites of this date is merely the product of dispersed activities. The problem is the more acute with the surprisingly close resemblance of this material to the Late Neolithic industry. The rarity of implements is not in its turn to be given a chronological explanation on the present evidence. The contrast in fact may be between sites where tools were made for use on the spot and pure knapping sites from which they were usually taken to another area. The wide ratio of scrapers to flakes, the former the commonest implement type at any date, can be seen from the following approximate figures; which appear in rough chronological order:—

¹ J. G. D. Clark and C. I. Fell, 'The Early Iron Age Site at Micklemoor Hill, West Harling and its Pottery,' in *P.P.S.*, vol. 19 (1953), pp. 1-40.

² C. B. Burgess, *Chronology and Terminology in the British Bronze Age*,'' in *Antiq. Journ.*, vol. 49 (1969), pp. 22-9.

Windmill Hill (primary levels) ¹	1:30	Bishop's Waltham Great Barrow ³	1:16
Hurst Fen	1:40	South Lodge Camp ⁴	1:80
Arreton Down ²	1:92	Martin Down	1:80
Durrington Walls	1:55	Angle Ditch	1:30

The presence of a proportion of utilised flakes nonetheless indicates some other activity on this particular site. One suggestion might be the use of some of these flakes in preparing hafts for implements manufactured here.

The second point is one of more general significance and is the apparent contradiction between the great quantity of flint on the site and conventional designation of this period as 'Bronze Age'. In fact this assemblage is not unique save in its size; for example, Pitt Rivers recovered 18 scrapers and fully 1,600 flakes from Martin Down. The problem is not removed by such figures however, for even on that site three bronzes came to light while on the Itford Hill settlement only flint was found. Increased boneworking could never bridge the problem. In fact this imbalance is fully characteristic of what Binford has termed a 'curated technology',⁵ one in which the most important items of equipment are the ones most carefully maintained, with the result that the representation of different items in the archaeological record will be in inverse proportion to their actual significance to the community. With this useful concept may be linked the observations of Rowlands concerning 'recycling' of worn metal implements among many primitive groups.⁶ Instead of discarding worn bronzes, as the prehistorian might require, they may be used as the raw material for their own replacements or taken by the smith as part payment. Nowhere is this clearer at this date than at Mildenhall Fen where a large flint industry survived together with animal remains but, despite entirely favourable conditions, no bronze was found. Even so the excavator

¹ I. F. Smith, 1965, *op. cit.*

² J. Alexander, P. C. and A. Ozanne, in 'Report on the Investigation of a Round Barrow on Arreton Down, I. O. Wight,' in *P.P.S.*, 26 (1960), pp. 263-302.

³ P. Ashbee, 'The Great Barrow at Bishop's Waltham, Hants.,' in *P.P.S.*, vol. 23 (1957), pp. 137-66.

⁴ For this site and the two following: A. Pitt Rivers, *Excavations in Cranborne Chase*, vol. 4 (1898).

⁵ L. R. Binford, 'Interassemblage Variability—The Mousterian and the 'Functional' Argument,' in a paper to *Research Seminar on The Explanation of Culture Change*, Univ. of Sheffield, 1971, publication in press.

⁶ M. J. Rowlands, 'The Archaeological Interpretation of Prehistoric Metalworking,' in *World Archaeology*, no. 3 (1971), pp. 210-23.

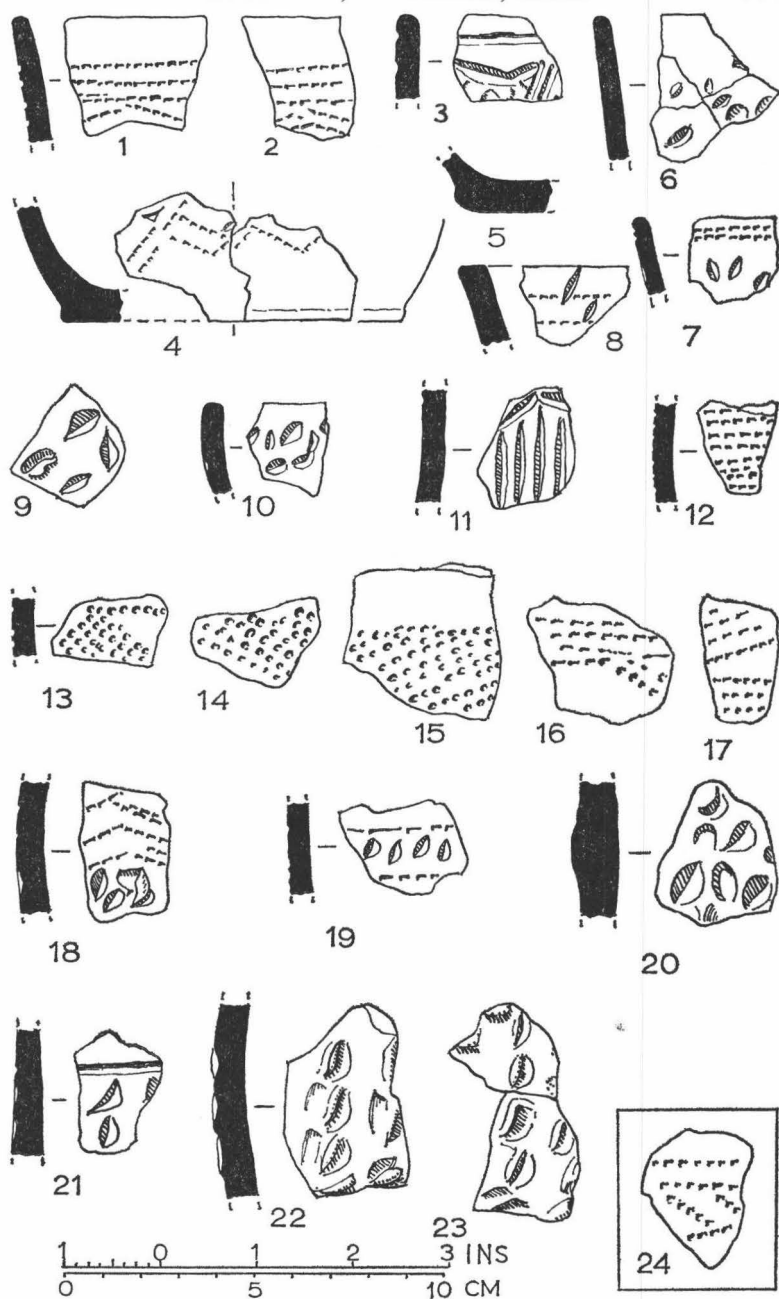


FIG. 7. ITFORD HILL CEMETERY-BARROW. 1-23, Beaker pottery. 24, Beaker sherd from settlement site.

remarked that many of the cuts found upon these bones could only have been produced by metal tools.¹ In these aspects at least the finding of the Itford Hill flints may go beyond a typological nicety and become a cautionary tale.

THE POTTERY

All pottery drawings are by E.W.H. and have been done in a stylistic, not a representational manner, without texturing. Cracks in pots have been shown only where they are necessary to indicate their relationship with repair holes.

THE BEAKER POTTERY (Fig. 7)

By RICHARD BRADLEY

A number of Beaker sherds were found scattered throughout the material of the cemetery barrow, upon its surface, at the bottom of the topsoil, within the ditch filling, flint layers, and within the filling of several of the cremation urns and pits. In almost every case pottery of the later Bronze Age was also present and the Beaker material can be regarded as residual.

Ninety-five small weathered sherds are represented in this assemblage, but are so fragmentary that the overall number of vessels cannot be estimated. The few sherds retaining any evidence of overall form seem to indicate vessels with straight sided, almost vertical, necks and rather globular bodies. It is likely that the overall shape is closest to Clarke's VII.²

The surviving decoration on these sherds may be set out as follows: to avoid confusion with the numbering of the fabrics there is no Type I.

	<i>No. of Sherds</i>
A. Square comb (Fig. 7, 17)	1
B. Short broad rectangular comb (7, 8)	10
C. Long broad rectangular comb (18, 19)	8
D. Short narrow rectangular comb	11
E. Short oval comb	1
F. Round pointed comb (13-15)	13
G. Dimpled roughened surface	1
H. Upright paired finger pinching (22, 23)	15
J. Scattered fingernail (10)	10
K. ? Rounded twig impressions	1
L. Decoration indeterminate (3, 11)	2
M. Undecorated	<u>22</u>
Total	<u>95</u>

¹ At the Itford Hill settlement the excavators considered that the sides and floor of Pit 26, Enclosure IV, Hut E, had been trimmed by a bronze palstave. *P.P.S.*, vol. 23 (1957), p. 177.

² D. L. Clarke, *Beaker Pottery of Great Britain and Ireland*, 2 vols. (1970).

The ratio of plain to decorated sherds is 22:73 and that of combed sherds to the remainder is 44:51. In each case a subjective judgment has been made where sherds retain more than one form of decoration (7, 8, 18, 19, 21).

The material is in four fabrics:

1. Reddish brown throughout with some grey core, rough body often untempered but with some occasional grog.
2. A similar ware but more evenly fired and with some medium flint filler.
3. Smooth very worn pink to grey body with some small flint filler.
4. Grey exterior and yellow-buff interior, slightly sandy body with almost no inclusions.

The relations of these fabrics to the decorative techniques already outlined are as follows:

	A	B	C	D	E	F	G	H	J	K	L	M
1	—	x	x	x	—	—	—	—	—	—	x	x
2	x	—	x	x	x	x	x	x	x	x	x	x
3	—	—	—	—	—	—	—	—	—	x	—	—
4	—	—	x	—	—	—	—	—	—	—	—	—

None of these features can support too close a date for this fragmentary material which in any case need not be contemporary overall. Even so, a very few characteristic decorative motifs may be helpful. Clarke has already suggested that the tendency towards plastic finger pinching of domestic wares was one which developed gradually among Beaker types and this view is supported for Sussex by the possible horizontal sequence at Belle Tout,¹ in which these types were late in date. At the same time the flattened horizontal triangle or lozenge motifs which are represented by a number of sherds in this group (Fig. 7, nos. 1, 2, 3, 4, 13, 14, 15, 16, 17 and 18) are well represented on complete vessels in the Southern British Beaker series. It is interesting to see that this is matched by no. 24 (Fig. 7) from the pit on the main site.² This is not to deny their appearance in the Northern tradition, but the first suggestion would generally be more consistent with their known distribution. Equally the fragmentary no. 11 with its vertical lozenge decoration seems to fall into Clarke's Southern British motif group. Closer discussion would be unhelpful, save to say that a Southern 2 or 3 context would possibly be the most satisfactory. The limited evidence for the vessels' overall form is entirely compatible with this view. If so an interval of five or six centuries might have elapsed between the two occupations of this site.

¹ *P.P.S.*, vol. 36 (1970), pp. 312-79.

² *P.P.S.*, vol. 23 (1957), Fig. 24, G.

Beaker Pottery (A note by E. W. Holden). Of the 95 sherds found only seven were surface finds close to or on the barrow. None was collected from elsewhere in the field (though searching over such a large area was not so intensive as around the barrow) and it is worth noting that not a single Beaker sherd came from Cutting C, or from the trial trenches A and B. Ignoring the few surface sherds, Fig. 4 (upper) shows how the remaining 88 were distributed in four groups with an outlier of three sherds in the depression in the N. Trench. All groups contained a mixture of sherds of varying fabrics and decorative motifs, so that no further sub-division is worthwhile.

The grouping may be coincidence, but it is remarkable how 41 sherds are over a section of the barrow, 20 in and over the SW. group of cremations (see Table 2 for sherds associated with cremations) and 9 sherds with the SE. smaller group. A further 15 in the SW. corner are not associated with any features. Of the 41 in the barrow area, 14 came from the filling of the ditch in the NE. quadrant. There was a lack of later sherds in the SW. corner, only 5 very minute later Bronze Age sherds being found. No Beaker sherds were in the western or eastern trenches.

From the limited evidence to be derived from the distribution of the Beaker sherds, south of the barrow might be a likely place to look for earlier occupation.

THE BRONZE AGE POTTERY (Figs. 8 and 9)

By ANN ELLISON

The Bronze Age pottery from the site consisted of six complete or almost complete vessels and fragments of at least twelve more. The complete pots were found inverted in the small holes shown on the plan (Fig. 2), and they all contained cremated bones. The 5½lbs. of sherds which were found in the SE. quadrant of the barrow at the time of the discovery of the site contain the sherds of at least eight vessels, some of which can be partially reconstructed. These were probably originally contained in some or all of the cremation holes (CH. 1-4) which, although having been disturbed by the plough still contained some burnt bone fragments (CH. 1 and 4) and some small sherds (CH. 2 and 3), whose fabrics could be matched against the 5½lbs. of sherds found on the surface and around the holes. A general scatter of sherds was found throughout the barrow, and the remains of two pots, represented mainly by body sherds, were found on the chalk surface. These two were not accompanied by cremated bones.

The vessels varied in colour from shades of buff and pink through to medium and dark grey. The colour often varied greatly over the surface of a single pot due to differential oxidation during firing.

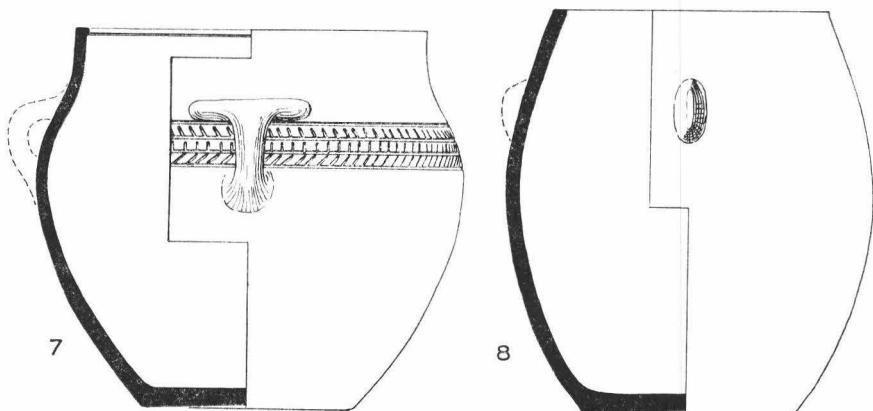
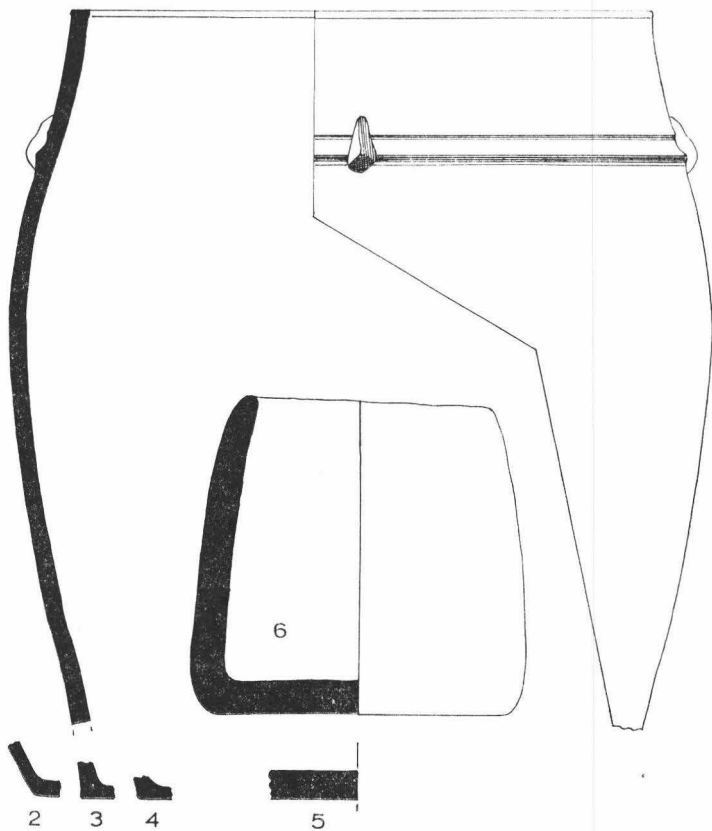


FIG. 8. ITFORD HILL CEMETERY-BARROW. 1-8, Bronze Age pottery. Scale $\frac{1}{4}$

In some cases the outer surface of the vessel had been carefully smoothed, thus concealing the amount of contained calcined flint filler. The fabrics can be divided into three main categories:—

A. Hard, fine, clay matrix with fine calcined flint filler (<2mm. diameter).

B. Hard, coarse, clay matrix with fine to coarse flint filler. There is a lot of variation within this category (to which most of the vessels belong) but this variation is continuous, and no valid subdivisions can be made. Many of the vessels tend to have much very fine (<1mm. diameter) and very coarse (*c.* 5mm. diameter) flint inclusions, at the expense of medium-sized ones.

C. Buff to black, soft, soapy clay matrix with sparse medium flint filler.

There is a direct correlation between the fabric types and vessel forms—the thin-walled globular pots being of Fabric A or of the finer fabrics contained within the B category, while the more straight-sided vessels are all of Fabric B. Fabric C is only represented by one vessel and by other single sherds.

Fig. 8.

1. *Central cremation*, Fabric B. Large, thin-walled, convex-sided vessel with a mouth diameter of 12in. (31cm). Base sherds with angles were found (Fig. 8, 2-4) but they may not belong as they appear to be too thin for the centre base sherds (Fig. 8, 5). The overall height cannot be determined accurately. Four vertically applied, unperforated lugs, triangular in shape (3 remaining) at 90-degree intervals, joined by a regular groove. Outer surface slightly smoothed.
6. *Cremation 11*. Fabric B. Plain, small bucket with narrow neck. Very thick-walled, rounded rim. No surface treatment. No decoration.
7. *Cremation 10*. Fabric B, with more fine than coarse filler. Globular with bulbous shoulder. Square rim with slight folding-over just below rim on inner surface. One bar handle with T-extension at upper end (probably two originally, but one upper side of this vessel is completely missing). Light incised decoration consisting of four horizontal lines delimiting three zones which are filled with diagonal and vertical strokes. Surface slightly smoothed.
8. *Cremation 9*. Fabric B. Small convex-sided vessel with square rim and three equally spaced vertically positioned unperforated applied lugs (two fallen off). Surface roughly smoothed.

Fig. 9

9. *Cremation 8*. Fabric B. 'Short' bucket urn with a simple rounded rim. Slight rise towards centre of base. Row of finger-tip impressions in body of pot 1in. (2.5cm.) below the rim. Twelve repair holes bored from both sides after firing, associated with cracks in the vessel. One portion of rim missing. No surface treatment.
10. *Cremation 5*. Fabric B. Thin-walled bucket with slightly convex profile. Two pinched-up vertical unperforated lugs at roughly 180 deg. above the widest point of the vessel. Four repair holes (two pairs) bored from both sides after firing. One portion of rim missing. Surface slightly smoothed.
- 11 and 12. *Cremation 6*. Fabric B. Mostly featureless body sherds plus one inclined rim sherd with slight groove just below the rim on the outside (Fig. 9, 11), possibly from an open bowl, and two joining sherds with a slight raised plain horizontal cordon (Fig. 9, 12). Two separate vessels of similar fabric are probably represented. No surface treatment.

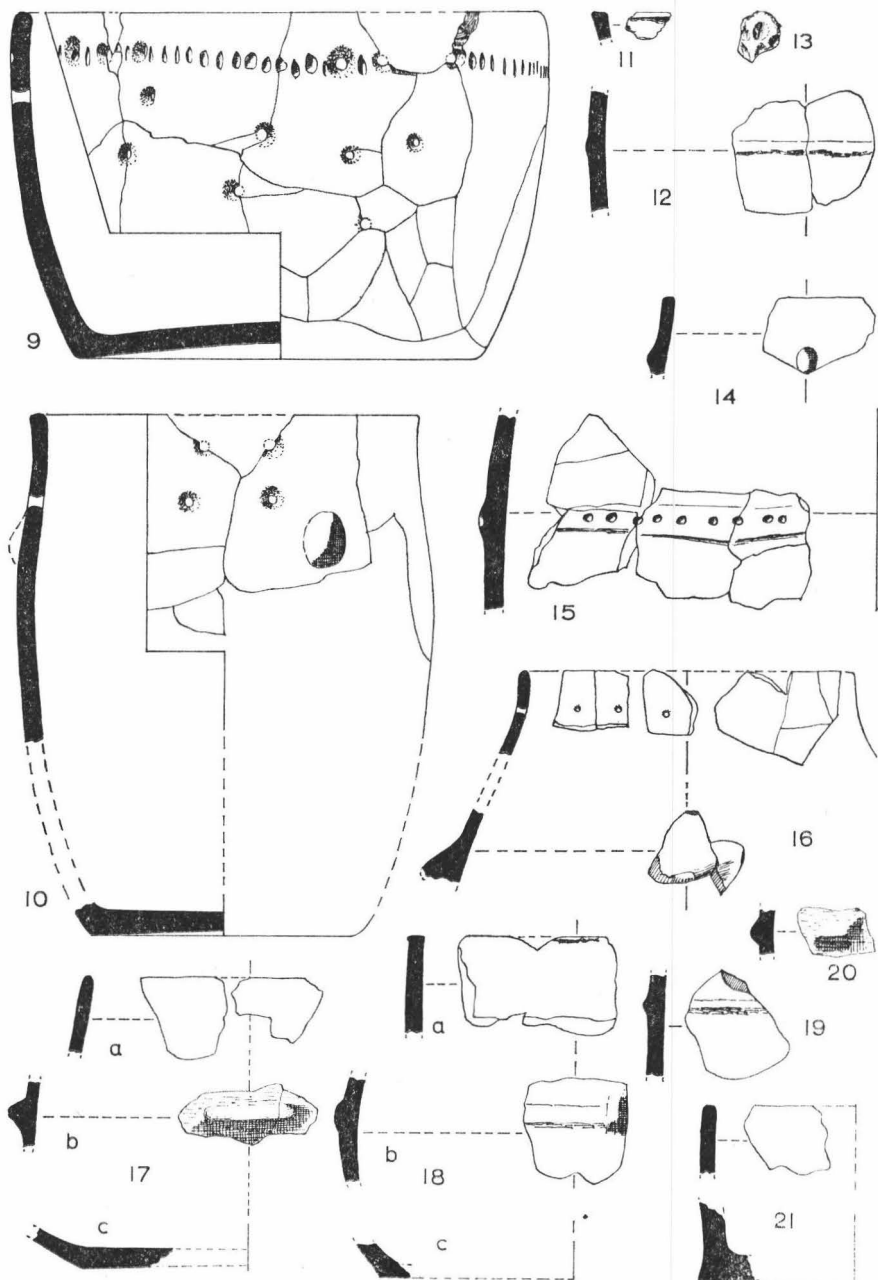


FIG. 9. ITFORD HILL CEMETERY-BARROW. 9-21, Bronze Age pottery. Scale $\frac{1}{4}$

13. One body sherd found inside the central urn (Fig. 8, 1). May be intrusive. Fabric B. Decorated with one and a half finger-tip impressions, possibly part of a row.
15. *Cremation 12*. Fabric B, but with fairly sparse grit. Body sherds only—three joining ones with a pinched-up cordon decorated with an uneven row of circular impressions formed by a blunt instrument. Outer surface smoothed well to conceal the flint filler. One sherd of Fabric C was also found associated with this group of sherds. Original size probably greater than that of the pot containing the central cremation (Fig. 8, 1).

Sherds from the SE. Quadrant. From the 5¼lbs. from the plough-soil, together with the sherds found from a similar area during the excavation, the pieces of at least eight vessels could be isolated.

Fig. 9.

14. Fabric B. Rim sherd of small globular vessel with small oval pinched-up lug 1¼in. (3cm.) below rim. Inside surface smoothed.
16. Fabric A. Rim and body sherds of a large thin-walled globular vessel. Horizontal unperforated lug, and bored (after firing) holes ¾in. (2cm.) below rim. A continuous row of holes might have been expected, but plain rim sherds are also present. Surface well smoothed.
- 17A and B. Fabric A. Rim sherd and body sherd from a thin-walled vessel. Long horizontal unperforated lug. Well smoothed surface.
- 17C. Fabric identical with 17A and B, but the wide angle of this base sherd suggests it must be from a different vessel—either an open bowl or a very large globular pot (?possibly Fig. 9, 16).
18. Fabric B. Square rim with some folding over under the outer edge; base sherd and body sherd of convex-sided vessel. Low vertical unperforated lug and horizontal raised plain cordon at the level of the lug.
19. Fabric B. Body sherd with narrow plain raised cordon.
20. Fabric B. Body sherd with horizontal unperforated lug.
21. Fabric C. One square rim sherd and heavy base with very slightly protruding foot and rising towards centre of pot.

Other Pottery (not illustrated).

CH.13. Body sherds: two of Fabric A and ten of Fabric C.

CH.14. Two pieces of burnt clay which could be pieces of broken loom weight, daub or potting clay.

SW. Quadrant. Body sherds: seven of Fabric B and two of Fabric C.

SE Quadrant. Body sherds not obviously belonging to the eight vessels isolated above: three of Fabric B and one very small plain rim sherd of Fabric C.

Ditch Filling (NE. Quadrant). Twenty-one body sherds of Fabric B, probably from two separate vessels.

Discussion of the Bronze Age Pottery. In 1959, the nature of a group of bronze ornament types common in bronze hoards and in several 'Deverel-Rimbury' settlements in south England were investigated by Margaret Smith.¹ They were found to have close parallels in Montelius III contexts in Northern Europe and seemed to represent a phase of trade which has been called the 'Ornament Horizon' in south England. On the basis of this continental correlation, the hoards and settlements containing these objects were redated from the Late Bronze Age to the Middle Bronze Age. Subsequent authors have dated more and more Bronze Age settle-

¹ M. Smith, 'Some Somerset Hoards and their place in the Bronze Age of Southern Britain,' in *P.P.S.*, vol. 25 (1959), pp. 144-87.

ment evidence as Middle rather than as Late Bronze Age, and this has led to a definition of a Late Bronze Age filled with the evidence of bronze hoards but empty of any evidence for settlements or burials. This situation has recently been discussed by Burgess¹ who envisages much of the British Bronze Age material occupying the Early Bronze Age, leaving unexplained 'gaps' in both the Middle and Late Bronze Ages. This trend in thought was initiated by Longworth's study of collared urns,² which established their predominantly Early Bronze Age dating.

However, in recent years, evidence for settlements and burials in the 'empty' Late Bronze Age has been increased both by new excavations containing stratified settlement material (e.g. at Eldon's Seat, Dorset³ and by new consideration of earlier literature. The latter approach has been most important in Sussex, where chronological division of the Middle and Late Bronze Ages supported by stratified settlement evidence has been in use since 1935 (when it was devised by Professor Hawkes),⁴ and at Highdown Hill, a stratified sequence of pottery was found running from the Middle Bronze Age right into the Iron Age.⁵ Hawkes' dual scheme is still applicable in Sussex, although with slight modifications. In fact, marked continuity in pottery styles from the early Bronze Age until well into the Iron Age can be demonstrated for the South Downs area. The main Middle Bronze Age settlement sites which have produced Hawkes' earlier categories of pottery (Plumpton Plain A, 1-4) are Plumpton Plain,⁶ Park Brow,⁷ Cock Hill,⁸ and Itford Hill,⁹ and it is in this broad grouping of pot types that the vessels from Itford Hill cemetery-barrow can be included.

¹ C. B. Burgess, 'Chronology and Terminology in the British Bronze Age,' in *Antiq. Journ.*, vol. 49 (1969), pp. 22-29.

² I. H. Longworth, 'The Origins and Development of the Primary Series in the Collared Urn Tradition in England and Wales,' in *P.P.S.*, vol. 27 (1961), pp. 263-306.

³ B. Cunliffe and D. W. Phillipson, 'Excavations at Eldon's Seat, Encombe, Dorset,' in *P.P.S.*, vol. 34 (1968), pp. 191-237.

⁴ C. F. C. Hawkes, 'The Pottery from the Sites on Plumpton Plain,' in *P.P.S.*, vol. 1 (1935), pp. 39-59.

⁵ A. E. Wilson, 'Report on the Excavations on Highdown Hill, Sussex, August, 1939,' in *S.A.C.*, vol. 81 (1940), pp. 173-203; 'Excavations on Highdown Hill, 1947,' in *S.A.C.*, vol. 89 (1950), pp. 163-78.

⁶ Hawkes, 1935, *op. cit.*

⁷ G. R. Wolseley, R. A. Smith and W. Hawley, 'Prehistoric and Roman Settlements on Park Brow' in *Archaeologia*, vol. 76 (1927), pp. 1-40.

⁸ Ratcliffe-Densham, 1961, *op. cit.*

⁹ Burstow and Holleyman, 1957, *op. cit.*

Most of the vessel forms can be matched among the pottery found at the Itford Hill settlement. The small, convex-sided pots with lugs (Fig. 8, 8; Fig. 9, 14, 17, 18, 20) are matched by Burstow and Holleyman, 1957, Fig. 21, K and Fig. 23, B, F, G, H, J, the raised cordons (our Fig. 9, 12 and 19) by Fig. 20, C and Fig. 23, L and M,¹ and the rows of finger-tip impressions on the body (our Fig. 9, 9 and 13) are paralleled in Fig. 21, G and F.² The slightly turned-over rim of Fig. 9, 18a also occurs at the Itford Hill settlement (Fig. 22, A),³ as do the punched cordon (our Fig. 9, 15 cf. Fig. 23, K⁴ and the shape of our Fig. 8, 1 pot (cf. Fig. 23).⁵ The most overwhelming evidence for the similarity of the two assemblages and their approximate contemporaneity, however, concerns the handled globular vessel with the incised decoration (Fig. 8, 7). A large part of the upper portion (including one handle) of this pot was not present in the cemetery. The pot had therefore been broken before its use as a cremation urn. One rim sherd (and possibly the handle) from this pot were found on the settlement site.⁶ This sherd does not join on to the pot from the cemetery barrow site, but a detailed study of the fabric, filler, colour, form, decoration and disposition of black reduction patches has convincingly demonstrated that it comes from the pot shown here (in Fig. 8, 7). It therefore seems highly probable that this cemetery-barrow was directly connected with the Itford Hill settlement, although, of course, it may not have been the only cemetery for that site, and may possibly have served other settlements as well. This is the first proven instance of the direct association of a burial site with a Bronze Age settlement in Britain and is therefore of some importance.

The Itford Hill settlement pottery is all paralleled at Plumpton Plain, Site A, where further parallels for the cemetery material can be found, e.g., the holes below the rim of our Fig. 9, 16, cf. Hawkes, Fig. 1, D.⁷ However, the Plumpton Plain example was a coarse 'bucket'-shaped pot and not a fine globular form. The small, thick-walled bucket pots (Figs. 8, 6 and Fig. 9, 9) are not found on the settlement sites, but such simple vessels have been found elsewhere in Sussex from burial sites, e.g., Broadwater,

¹ *ibid.*

² *ibid.*

³ *ibid.*

⁴ *ibid.*

⁵ *ibid.*

⁶ *ibid.*, Fig. 24, A and B. [The rim and body sherds (7) of A have been found at Barbican House Museum, Lewes, where the settlement finds are stored. The handle, B, could not be readily found, so no comparison of this with the single remaining handle on the urn has been made. E.W.H.]

⁷ Hawkes, 1935, *op. cit.*

Haywards Heath and Goring.¹ A group of urns possibly similar to that in the Itford barrow was found at Alfriston² although neither the vessels nor illustrations of them have survived. The 'short' bucket (Fig. 9, 9) is a very unusual form and the only good parallels that can be found are from a barrow at Landford, Wilts.³ However, many of the 'top halves of bucket urns' found inverted in burial sites throughout southern England may in fact originally have been vessels of this form, and many of the sherds from the Sussex settlement sites could be from 'short' vessels rather than from taller bucket forms.

One vessel form is notable for its absence at the Itford Hill cemetery-barrow—the bucket urn with finger-printed cordon. This form was fairly common at the only other cremation cemetery of the period in Sussex yet discovered, that on Steyning Round Hill.⁴ This burial site was situated fairly near to the Park Brow settlement⁵ and may have been related to it in the same way as the Itford Hill settlement and cemetery barrow seem to have been. Such a hypothesis is strengthened by the fairly frequent occurrence of cylindrical urns with finger-pinched cordons at Park Brow⁶ and Steyning Round Hill, while the lack of the vessel type in the Itford Hill barrow is matched by a very low percentage of sherds with finger-printed cordons relative to the very many bag-shaped pots at the Itford Hill settlement. If these assemblage differences do not represent a great chronological disparity (and the occurrence of similar globular pots at Plumpton Plain, Park Brow and at the Itford Hill sites argues against this), they may represent the presence of distinct small localised groups within the Sussex Middle Bronze Age.

The repair holes in the pots illustrated in Fig. 9, 9 and 10 are the first to be recognized in Sussex, although they are extremely common on later Bronze Age urns in Wessex, the Thames Valley and East Anglia and also occur on some earlier classes of pottery. Holes on prehistoric pottery can be bored before or after firing and from one or both sides of the vessel wall. They seem to have two main functions: firstly as repair holes, in pairs either side of cracks or breaks in the fabric of the pot. Presumably this would enable the

¹ R. C. Musson, 'An Illustrated Catalogue of Sussex Beaker and Bronze Age Pottery,' in *S.A.C.*, vol. 92 (1954), p. 106, nos. 405, 406 and 482 respectively.

² *S.A.C.*, vol. 37 (1890), pp. 193-4.

³ J. P. Preston, *Excavations of Early Iron Age Site at Landford* (Cambridge, 1929), nos. 2, 4, 12 and 36.

⁴ G. P. Burstow, 'A Late Bronze Age Urnfield on Steyning Round Hill, Sussex,' in *P.P.S.*, vol. 24 (1958), pp. 158-64. Typologically later Bronze Age pots are also present at this site.

⁵ *ibid.*, Fig. 1.

⁶ Wolseley, Smith and Hawley, 1927, *op. cit.*, Figs. 1 and 3.

cracks to be held together with leather thongs or sinews. There is some evidence that iron rivets were used for this purpose in the Iron Age,¹ but there is no evidence for the use of bronze for this purpose. The implications of the occurrence of repair holes in different percentages of different types of vessel throughout the later Bronze Age are of great interest but are also of great complexity. They will therefore be dealt with at some length elsewhere. The other function is that of apparent decoration. The rows of holes found below the rims of pots exemplified by Plumpton Plain A² and at Park Brow³ fall into this category, and this trait is also found in Dorset.⁴ The holes below the rim of the pot shown in Fig. 9, 16, above, may be decorative, but as they were bored after firing and do not form a continuous row, and as all three holes occur adjacent to breaks, the repair hole interpretation cannot be ruled out. Such rows of holes may have been decorative in themselves or have been devised so that strings or thongs could be passed through the holes in varying directions so as to produce various linear patterns or for the purely functional purpose of providing a balanced and stable way of hanging up the vessel.

The Sussex Middle Bronze Age pottery assemblages as a whole are very different from the contemporary assemblages in Wessex. Contrasting with the situation in Wessex, in Sussex there is no sharp division by form or fabric into the bucket and globular urn categories. Most of the vessels have a more or less convex profile and there is no great variation in fabric or wall thickness. In Sussex, the only example of the true 'Deverel-Rimbury' globular urns as defined by Calkin⁵ is the fragment of a Type I globular from the ditch of a linear earthwork on Glatting Down, in the extreme west of the county,⁶ while the M.B.A. sites we are concerned with all lie much further east, beyond the River Arun.

The best British parallel for the Sussex Middle Bronze Age assemblage with its predominance of bag-shaped vessels is in fact the 'Ardleigh Group' of SE. Essex which has been recognised and described by Erith and Longworth.⁷ This assemblage contains

¹ D. P. S. Peacock, 'A Petrological Study of Certain Iron Age Pottery from Western England,' in *P.P.S.*, vol. 34 (1968), pp. 414-27.

² Hawkes, 1935, *op. cit.*, Fig. 1, d.

³ Wolseley, Smith and Hawley, 1927, *op. cit.*, Fig. 1.

⁴ J. B. Calkin, 'The Bournemouth Area in the Middle and Late Bronze Age, with the Deverel-Rimbury Problem Reconsidered,' in *Arch. Journ.*, vol. 99 (1962), pp. 1-65, see p. 53, Fig. 12, 6.

⁵ *ibid.*

⁶ E. and E. C. Curwen, 'Covered Ways on the South Downs,' in *S.A.C.*, vol. 59 (1918), pp. 35-75; also C. M. Piggott, 'Five L.B.A. Enclosures in North Wiltshire,' in *P.P.S.*, vol. 8, pp. 48-61, Fig. 8.

⁷ F. H. Erith and I. H. Longworth, 'A Bronze Age Urnfield on Vince's Farm, Ardleigh, Essex,' in *P.P.S.*, vol. 26 (1960), pp. 178-92.

'baggy' squat globulars with lugs and taller lugged pots with convex profile which are very similar to some of the Sussex M.B.A. vessel forms.¹ However, the heavily rusticated buckets, often with relief horseshoe motifs, which are so common at Ardleigh are completely absent in Sussex and the decorative motifs on the globular urns in Essex consist mainly of filled triangles, while the Sussex globulars tend to have simpler decoration made up of horizontal and oblique lines.

Therefore, even this parallelism is by no means close when the material is considered at the assemblage level and the unique character and integrity of the South Downs group should be emphasised. The local groupings of Middle Bronze Age pottery styles, which may be due either to the existence of limited exchange or redistribution networks or to the presence of distinct social groupings, is also reflected in the distribution of particular types of bronze artifact. Thus the distribution of the M.B.A. twisted rod armlets, known as 'Sussex loops' (which Curwen has suggested may be the products of a single craftsman), is concentrated in the Brighton area.² This distribution roughly coincides with that of the South Downs M.B.A. pottery group. Within this integrated pottery group we can even begin to detect smaller local groups such as the Itford Hill sites and the Park Brow plus Steyning Round Hill assemblages, which suggest the presence of small social units possibly making some or all of their pottery. However, this remains to be verified by detailed analysis of the pottery using petrological techniques, and a programme of such work is at present being undertaken by the author (A.E.).

CHARCOAL

By JOAN M. SHELDON, B.SC.

Very small amounts of charcoal were associated with the Central (primary) cremation, and cremations 4, 6, 8, 9. The charcoal, some of which is too minute for identification, includes: Oak (*Quercus* sp.), Ash (*Fraxinus excelsior*), *Prunus* sp. (excluding *P. spinosa*) and *Crataegus* type.

THE CREMATIONS

By

H. B. A. RATCLIFFE-DENSHAM, M.B., B.S., B.SC., M.R.C.S.,
L.R.C.P., F.S.A.

There were eleven samples of cremated bone which appeared to represent parts of twelve skeletons.³ The fragments of bone were very comminuted; they had been subjected to great heat, were

¹ *ibid.*, e.g., Fig. 7, H16, D21, and D4.

² Curwen, 1954, *op. cit.*, pp. 200-2.

³ Cremations 14 and 16 both contained minute amounts of burnt bone, too comminuted to yield any information.

apparently much calcified, and had lost nearly all their carbon. They were mixed with small pieces of flint which had also been comminuted by fire.

In every sample the identifiable fragments derived, almost exclusively, from the skulls and from the shafts of the long bones; the rest of the axial skeletons, the limb girdles and the extremities were scarcely represented. Ribs, pelves and digits do not decay easily while awaiting cremation, so that the absence of the bones of the trunks must have had some other cause, such as intense heat at the centre of the pyre, or relative inaccessibility for collection. Their absence seriously limited the available information.

The first four peripheral cremations were represented by two very small samples, C.1 and C.4, which were found in situ in hollows near the 5½lbs. of sherds. In the three most intact cremations the urns appeared to have been about one-third filled with brown loam, topped up with comminuted bone and flint, and sealed with chalk sludge, before being capsized into their holes.

The following information derives mainly from the thickness of crania and long bones, the state of the cranial sutures and of dental root canals.

Primary (central cremation). Adult; elderly; small boned but possibly male. Cranial walls 2½-6mm. thick (11mm. at the Torcula). Cranial sutures closed but visible. Small teeth; root canals closed. Only moderate markings of the extensor muscles of the hand on the radius. Thickness of femoral shaft, not at the *linea aspera*, =7mm. Platycnemic and, probably, sabre tibia.

Cremation 1. Ten small pieces of burnt bone. A child. Sections of fibula, femur, and, probably, humerus.

Cremation 4. A few tiny fragments of long bone, apparently from a small individual. Age and sex unknown. Not an infant.

Cremation 5. Adult; young; small boned; probably female. Cranial walls thin. Cranial sutures open. Small ear and petrous temporal bone. Small, permanent teeth and sockets; root canals patent. Femur moderately pilastered; shaft thickness 5mm. (8mm. at *linea aspera*). Tibia platycnemic and small. Tiny fingers.

Cremation 6. Twelve tiny fragments of small bones. A small individual, but not an infant.

Cremation 7. Child. A tablespoonful of burnt fragments. Cranium 3mm. thick. Lower border of a child's mandible. A piece of femoral or humeral shaft 3mm. thick, and another 1.5mm. thick.

Cremation 8. Two individuals. 1. Adult, in early twenties; small boned; female. Cranial walls thin and sutures open. Slender, narrow chin. Small, unworn teeth, including an upper 'wisdom.' Root cavities open, but tips nearly closed. Long bones slender and thin.

2. Child; probably about three years old. Part of the ramus, the coronoid process and the inferior margin of the mandible. An erupted, two year old, temporary molar with the roots still long. Fragments of cranial wall.

Cremation 9. Adult; young; small boned; possibly male. Cranial walls about 5mm. thick in vault; sutures open. Dental root canals open. Wall of shaft of humerus 5mm. thick and that of femur 6-7mm. S. all hands (metacarpal).

Cremation 10. Child. Cranial vault about 2.5mm. thick; sutures wide open. Part of a crown and of a root of a temporary tooth, and part of an unerupted permanent one. Wall of shaft of humerus 2mm. thick. Fragments of shafts of tiny long bones.

Cremation 11. Adult; middle aged or old; small boned; female. Cranial vault thin walled; temporal squamous suture open. Basi-occipital-sphenoid suture closed and invisible. Petrous temporal bone very small. Odontoid process of axis vertebra suggested a slender mobile neck. An articular process of a dorsal vertebra, small and unworn. Condyle of the mandible smooth and small. Shafts of humerus and, probably, femur small but, relatively, thick walled. Tibia apparently platycnemic.

Surface. Among the 5½lbs. of potsherds, from near Cremations 1-4. A dense felt of fine roots containing tiny particles of burnt bone, softer than the roots. These had to be picked out individually. A few pieces of long bone appeared to belong to a small person who was not a baby.

Discussion. Five of the twelve individuals represented were adults, four were children, and three gave no indications of their age at death. Steyning Round Hill¹ and Cock Hill² are the only other published sites of the later Bronze Age in Sussex where cremated, human bones were found. The remains from Steyning were not reported on; those from Cock Hill consisted of two infantile inhumations and three cremations, representing in all, probably, three adults and six children.

The site at Cock Hill was less exposed than at Itford Hill and the cremations from the former were more complete, had been subjected to less heat (apparently), and contained more charcoal than those from the latter. It chanced that parts of one adult skeleton from Cock Hill had been only charred, which renders it the best source of our knowledge of the physique of the people of Sussex during the later part of the Bronze Age. The subject, a young woman, had been cremated with an infant (Cremation III)³ and their remains had been buried in a bag and marked with a stake.

Certain matters now require consideration:—

1. Bone is a complex of tissues which may be summarised as an elastic, organic, and a rigid, inorganic framework, sandwiched between a soft, organic marrow and a tough, organic periosteum; the whole being enclosed in a variable thickness of soft organic tissues.

2. Cremation of a cadaver causes both chemical and physical changes.

3. The main chemical change is the oxidation of the organic into mainly volatile inorganic substances. The speed of this depends on the temperature, the supply of air and the removal of the organic gases. The extent of the change depends on the time for which the heat and the oxygen are available.

¹ *P.P.S.*, vol. 24 (1958), p. 158-64.

² *S.A.C.*, vol. 99 (1961), pp. 78-101.

³ *ibid.*

4. The first physical change is the evaporation of the volatile products of combustion which can distort, crack or burst impermeable tissues, which have not been completely oxidised.

5. The next physical change is the thermal expansion of the bony framework. The amount of distortion and comminution caused by this depends on the thermal conductivity, the surviving elasticity and the co-efficient of expansion of the tissues, all of which depend on the chemical changes, and so on the supply of air and on the temperature.

Thus it will be seen that the distortion of bone caused by cremation on an open pyre will be very variable and that any morphological deductions which are made from such bone must be treated with great care. With the above proviso the following information derives from the bones of the young woman from Cock Hill:—

A cranial vault 3-6mm. thick, with open sutures and narrow markings for the meningeal vessels. The ears were small, the cheeks probably rounded and the temporal muscles of mastication not strongly developed. The jaws were small, with healthy alveoli and small tooth sockets. The digastric muscles for eating were well developed. The occipital arteries were poorly marked. The neck was lightly boned and muscled. The trapezius, deltoid and great pectoral muscles of the shoulders were well marked. The upper end of the shaft of the humerus was 3mm. thick and about 64mm. diameter. The elbows were small, with shallow olecranon fossae. The fingers were tiny but fairly well muscled. The ribs were slender. The great sciatic notch was rather wide angled (a female characteristic). The femoral shafts were 5.5mm. thick and markedly pilastered (buttressed); the epicondylar lines were moderately defined. The knee joints showed no obvious signs of wear. The small kneecaps could only have belonged to a tiny woman. The tibiae were moderately narrowed from side to side (platycnemic). The fibulae were relatively stout, with strong markings for the extensor and the abductor muscles of the feet. The feet were probably of moderate size, with straight big toes.

The finds at Itford Hill do not add much to this picture, but they reinforce it in places; confirming the awful child mortality. The small size of the Itford Hill men was at variance with the sexual dimorphism which seems to have existed in the preceding Neolithic and in the succeeding Iron Age, but the evidence for their masculinity was by no means conclusive.

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LATE NOTES. Since this report was printed:—

1. The radiocarbon date quoted on p. 89 and f.n.1, p. 70, when calibrated with the tree ring curve may be as early as 1230-1330 B.C., according to *Current Archaeology*, 32 (May, 1972), pp. 232 and 242.

2. It has been discovered that the pottery assemblage found at Alfriston in 1889 (see p. 111 and f.n.2) is in Hastings Museum, Acc. nos. 952.52.1/2/3. It is hoped to publish these three vessels in a future volume of *S.A.C.*