

ART. III.—*Mesolithic habitation sites at St Bees, Cumberland.* By J. CHERRY, B.Sc., and P. J. CHERRY.

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THE archaeological survey of ploughed fields which we have carried out in recent years on the coastal strip of South West Cumberland, has resulted in the discovery of extensive habitation sites with strong Mesolithic affinities, south of Whitehaven at Tarnflat and at St Bees.

Mesolithic habitation sites have been reported at Drigg<sup>1</sup> and Eskmeals<sup>2</sup> in Cumberland and across the Solway Firth in South West Scotland.<sup>3</sup> In 1965 I discovered a similar site at Gillespie<sup>4</sup> on Luce Bay, where the coastline bears a strong resemblance to that at St Bees.

The Scottish sites are generally found close to the 50-foot contour, separated from the modern storm beach by a strip of the so-called "25-foot" raised beach, although at Isle Farm on Wigtown Bay flints were found at about 100 feet above O.D.

If any raised beach existed at St Bees it has long been washed away by the sea, or destroyed by the building of a sea-wall and promenade. About twenty yards inland from the promenade the ground rises up a terrace of clay, at the top of which a car-park has been constructed.

To the north the ground rises in a magnificent sweep up the grass-covered slopes of the red sandstone cliffs of the South Head. Further north at a slightly lower altitude stands St Bees lighthouse and beyond this is Tarnflat Hall Farm.

South of the car-park at St Bees lie the softer cliffs of boulder-clay which skirt the western edge of the golf

course and which are constantly being eroded by the sea and the rain.

A map showing the relative positions of the sites is given in Fig. 1.

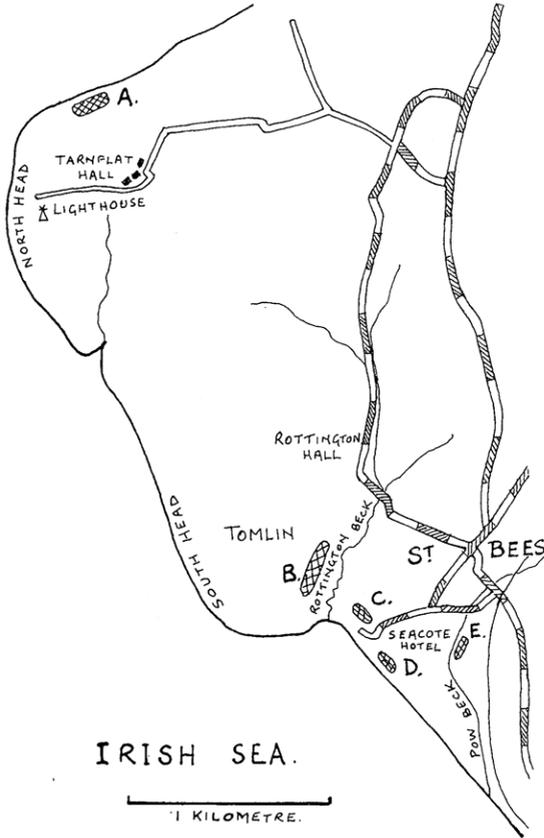


FIG. 1.

### A. Tarnflat Hall Farm

(Map Reference: 3946. 5149. NX 91).

At Tarnflat Hall the heaviest concentration of flint debris was found near to the edge of the cliff at the lower end of a north facing field, just below the 200-

foot contour. The field is No. 4882 on the O.S. 25-inch map, Plan NX 9414.

This site is at an unusually high altitude and is particularly vulnerable to winds from a northerly direction. In addition, the beach below can only be reached with difficulty down the red sandstone cliff.

Although the main concentration of flints was at the edge of the cliff, there was a light scatter in a general direction to the south between Tarnflat Hall and the lighthouse. Very few flints were found to the north of site A.

By far the greatest quantity of flint debris was found at St Bees, where the sites can conveniently be separated into four main groups.

### **B. Rottington**

(Map Reference: 3959. 5121. NX 91).

A scatter of flints and broken stones was found in a fairly well defined band 100 metres long, between the 50-foot and 75-foot contours on the west side of Rottington Beck. At the eastern end of the site the ground falls away rather steeply down to the beck, and flints, including a microlith, have been found in erosion scars in the high bank. The heaviest concentrations of flint and stone debris were found at the eastern and western ends of the site. The fields are Nos. 8513 and 8831 on the O.S. 25-inch map, Plan NX 9512.

Site B yielded a number of well-made microliths in a variety of geometric forms. An interesting feature was the presence of a number of cores and other artefacts made from plain and banded volcanic tuff.

### **C. St Bees car-park.**

(Map Reference: 3961. 5118. NX 91).

There have been extensive alterations during recent years to the level area between the red sandstone cliffs of the South Head and the lower boulder-clay cliffs

which lie almost half a mile to the south. A promenade and sea wall have been built and further inland an extensive car-park has been constructed. Between the car-park and sea wall the ground has been landscaped into an open area of grassland. Before this took place in 1968, a scatter of flints was found in erosion scars; in one area of about 6 square metres, at the extreme southern edge of the site, we picked up sixteen microliths and a number of small blades and spalls. One of the microliths and most of the blades and spalls were made from volcanic tuff. It is most unusual to find such a high concentration of microliths at these coastal sites.

When the car-park was extended to the west and north in 1968, loads of top soil were removed and spread over the grassy area above the sea wall. When this had weathered, more flints of microlithic character were found.

#### **D. South Cliff**

(Map Reference: 3964. 5115. NX 91).

On the lower slopes of the boulder-clay cliffs the ground was levelled to provide a new car-park for the Sea-Cote hotel. Worked flints were found in erosion scars and in the heaps of soil left by the mechanical levellers.

An examination of the cliff face above the car-park yielded a quantity of artefacts, most of which were made of volcanic tuff. These were found in the face of the cliff, at the edge of a level piece of ground, some 50 metres above the car-park. The artefacts were embedded in the cliff about 38 centimetres below the top, or lying on the steep clay slope immediately below. They were found over a distance of about 5 metres and included blades, flakes and microliths.

At the edge of the cliff at the southern end of the Sea-Cote car-park we found a fine example of an end

scraper worked on a blade; this was made from a fine-grained conglomerate rock and strongly resembles the "grattoir" of the Upper Palaeolithic.

### **E. Pow Beck**

(Map Reference: 3969. 5117. NX 91).

Flint debris was found in erosion scars and mole hills on a sloping bank, to the east of Pow Beck and the golf course. No microliths were picked up but several narrow-bladed cores with well defined striking platforms were found. There is little doubt that there is a much greater quantity of flint debris still to be found in this area.

### **Artefacts.**

#### *Cores* (Fig. 2).

Almost all of the seven hundred and fifty-five flint cores from these sites show some degree of patination although very few are heavily patinated. Site A produced the greatest percentage of patinated cores, the ratio of patinated to unpatinated artefacts being 2.5 to 1. At Sites B-E the ratio was less than 1.5 to 1. Among the cores from Site B, which were almost free from patination, were three single platform cores which had been reworked round the edge of the striking platform to form scrapers.

Although many of the cores exhibited typical narrow blade scars, others had been struck to produce broader blades and flakes. There was some similarity between these cores and those from around Williamson's Moss at Eskmeals, where there is evidence for mainly Mesolithic and Neolithic occupation on and above the raised beach. Similar core types have been reported from Barsalloch<sup>5</sup> and Low Clone<sup>6</sup> in Wigtownshire.

The cores from Williamson's Moss were similar in size but with the exception of those found at the north

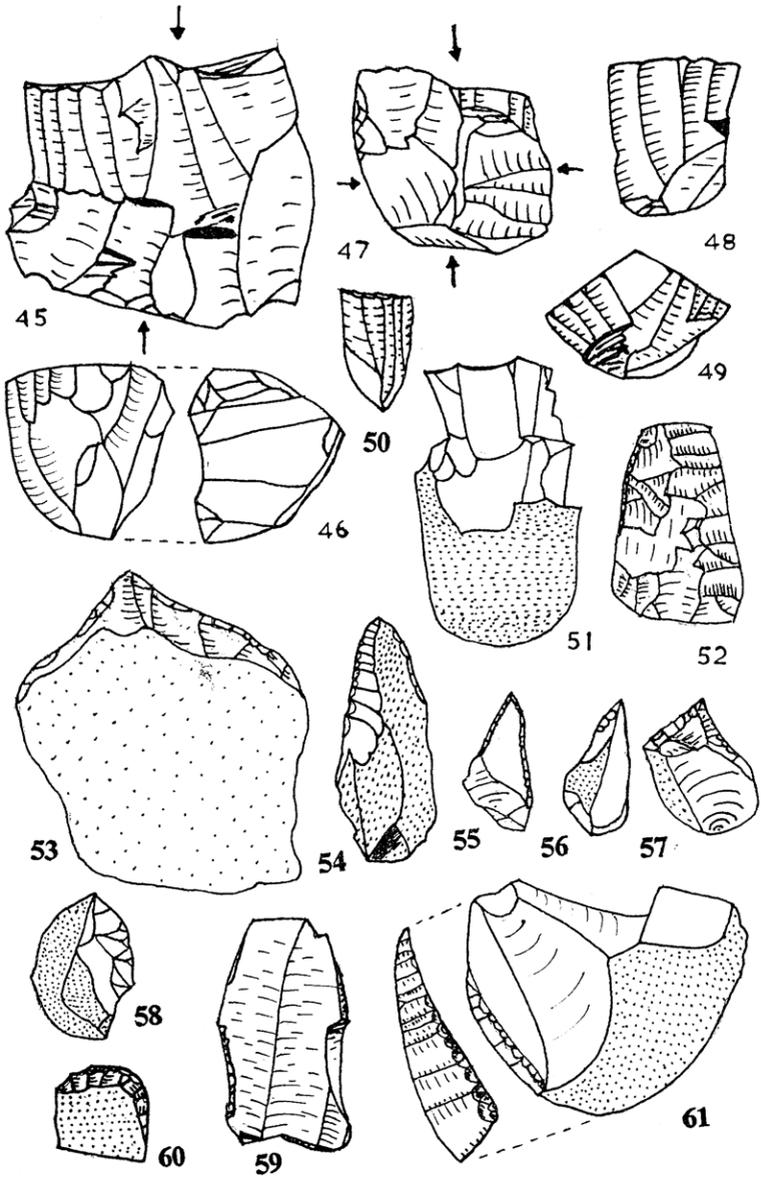


FIG. 2.

Table 1 : Core types.

Type	Description	Site B Rotting- ton	Site C Car-park	Site E Pow- Beck	Site A Tarnflat
SINGLE PLATFORM	slight patina +cortex	197	9	3	6
	slight patina no cortex	8	1	Nil	1
	patinated +cortex	257	7	2	30
	patinated no cortex	26	Nil	Nil	2
DOUBLE PLATFORM	slight patina angled	25	2	Nil	7
	patinated angled	53	9	1	10
	slight patina parallel	19	4	Nil	2
	patinated parallel	32	5	Nil	6
TRIPLE PLATFORM	slight patina	3	1	Nil	2
	patinated	11	3	Nil	4
QUADRUPLE PLATFORM	slight patina	Nil	Nil	Nil	Nil
	patinated	1	Nil	Nil	Nil
KEELED	slight patina	3	Nil	Nil	2
	patinated	Nil	Nil	Nil	1
Total		635	41	6	73

end of the raised beach and the terrace of clay beyond, they were less patinated.

The cores from Gillespie on the other hand, showed that a much greater percentage was patinated and that the degree of patination was generally greater. The average weight of the cores from Gillespie was three-fifths of an ounce, one-tenth of an ounce heavier than the Cumberland cores. There was also a greater percentage of cores from which the cortex had been removed. The overall impression gained is that the flint from Gillespie is bigger and of somewhat better quality. Comparison with the total collections from the other sites around Luce Bay and Wigtown Bay is difficult, since only the flints with white or grey-white patina were recorded by Dr Coles in his report on these sites.

No. 51 is a single platform core formed by endeavouring to strike blades or flakes from a pebble of poor quality flint. Nos. 45, 46 and 49 are examples of opposed, right-angled and obtuse-angled double platform cores. Nos. 48 and 50 are single platform cores exhibiting fine bladelet scars and demonstrate the skill of the Mesolithic flint knapper, required to strike blades from these tiny pieces of flint. No. 61 is a rejuvenation flake removed from the striking platform of a core where the knapper has been using a flake scar on the original core as a striking platform.

Table 1 shows the number, type and degree of patination of cores found on each site.

### *Microliths* (Fig. 3).

Seventy-two microliths have been picked up so far. Site C yielded a surprisingly high proportion of these in view of the comparatively small amount of flint debris found there. The classification of microlithic types<sup>7</sup> is given in Table 2.

**Table 2 : Microliths.**

Type	Rotting- ton	Car- park	South Cliff	Tarnflat
Obliquely Blunted Points	8*	5‡	1 †	Nil
Battered Backs	9	5‡	Nil	4
Points	2	Nil	Nil	Nil
Crescents	3	2	Nil	2
Quadrangles	6	3	1	3
Triangles	1	4	3 †	Nil
Fragments	9	1	Nil	Nil
Total	38	20	5	9

\* 1 with serrated edge.

† All made from volcanic tuff. For other artefacts of this material see Table 3.

‡ Includes 1 made from volcanic tuff.

Site A: The microliths 1 to 8 include the battered-back blade No. 1, the quadrangular form No. 5 and the point No. 7 which is blunted around most of its edge, together with a number of pieces of doubtful classification.

Site B: The obliquely blunted points Nos. 17 and 20 (Clark 1a and 1b), crescents Nos. 18 and 19 (Clark 5b), quadrangular forms Nos. 22 and 23 (Clark 6b), needle point No. 25 and the point No. 24 which is similar to No. 7 from Site A.

Microliths discovered in 1972 include the worked point No. 42 and the curved point No. 39. These were found in close proximity to each other towards the eastern end of the site and are the biggest flint microliths found so far on any of the West Cumberland sites.

Site C: The trapezoid No. 9, needle point No. 10, obliquely blunted points Nos. 11 and 15 (Clark 1b and 1a), crescent fragment No. 12 (Clark 5b), quadrangular form No. 13 (Clark 6a) and triangle No. 14 (Clark 4b). All these were made from flint.

The obliquely blunted point No. 27 and the nondescript fragment No. 29 were made from tuff of the Borrowdale volcanic series.

Site D: The triangles Nos. 30, 38 and 40 together with the obliquely blunted point No. 28, are all made of volcanic tuff and the quadrangular form No. 26 is of heavily patinated flint.

### *Scrapers* (Figs. 2 and 3).

Site A: Again we found a number of steeply worked scrapers. There was one example of a side scraper worked for hafting, of the type which has been found at Williamson's Moss and on the Scottish sites, Fig. 2, no. 58. This sort of scraper does not occur on the Bronze-Age sites of South West Cumberland.

Site B: Three core-scrapers were found here. Many of the scrapers were made by removing the minimum of cortex from the pebble fragment but a few which have most, or all, of their cortex removed, have had a flake struck from their dorsal surface to give a well defined and convenient thumbhold. This practice was particularly popular on the Bronze-Age sites at Seascale.<sup>8</sup>

A high proportion of the scrapers were steeply worked, the scars of retouch being about 90 degrees to the primary flake scar. There were sixteen scrapers worked on shallow primary flakes and again the minimum of cortex had been removed. Fig. 3, nos. 62 and 64 are examples. No. 63 is a double ended scraper worked on a narrow flake. The total number of scrapers from this site was one hundred and eighteen.

Site C: The majority of scrapers from here were

steeply worked and included a large nosed scraper, Fig. 2, no. 53. Only three scrapers exhibited shallow working and these had convenient concave areas on their dorsal surfaces. There was also a scraper made on the end of a tiny fragment of blade, Fig. 3, no. 44. The total number of scrapers from this site was ten.

Site D: No scrapers were found here.

Site E: Two scrapers were picked up, both made from thick flakes struck from cores, with blade scars on their dorsal surfaces.

### *Knife-forms* (Fig. 2).

This term is used to describe tools worked mainly on flakes and occasionally on broad blades where the angle between the dorsal surface and the negative bulb is small and where the retouch is along a more or less straight edge. The secondary working takes the form of fine blunting or flaking, or a combination of the two. Tools of this type could be used for scraping or cutting.

Site B yielded twenty-two knife-forms, Nos. 52 and 59 are examples. No. 52 is unpatinated and has both flaking and blunting along its edge. The blunting is very fine and even, which does not seem to result merely from utilisation.

Site C produced three knife-forms, No. 54 shows steep blunting along the side of the flake opposite the cutting edge, presumably to form a rough place for the finger to obtain purchase. The thickness of this tool at its bulbar end makes it seem unlikely that it was intended for hafting. The secondary working stops just short of the narrower end.

No knife-forms were found on any of the other sites.

### *Worked points* (Fig. 2).

There were only seven awls or borers found and six of these were picked up at Site B and one at Site C. Nos. 55 and 57 are examples which are worked along

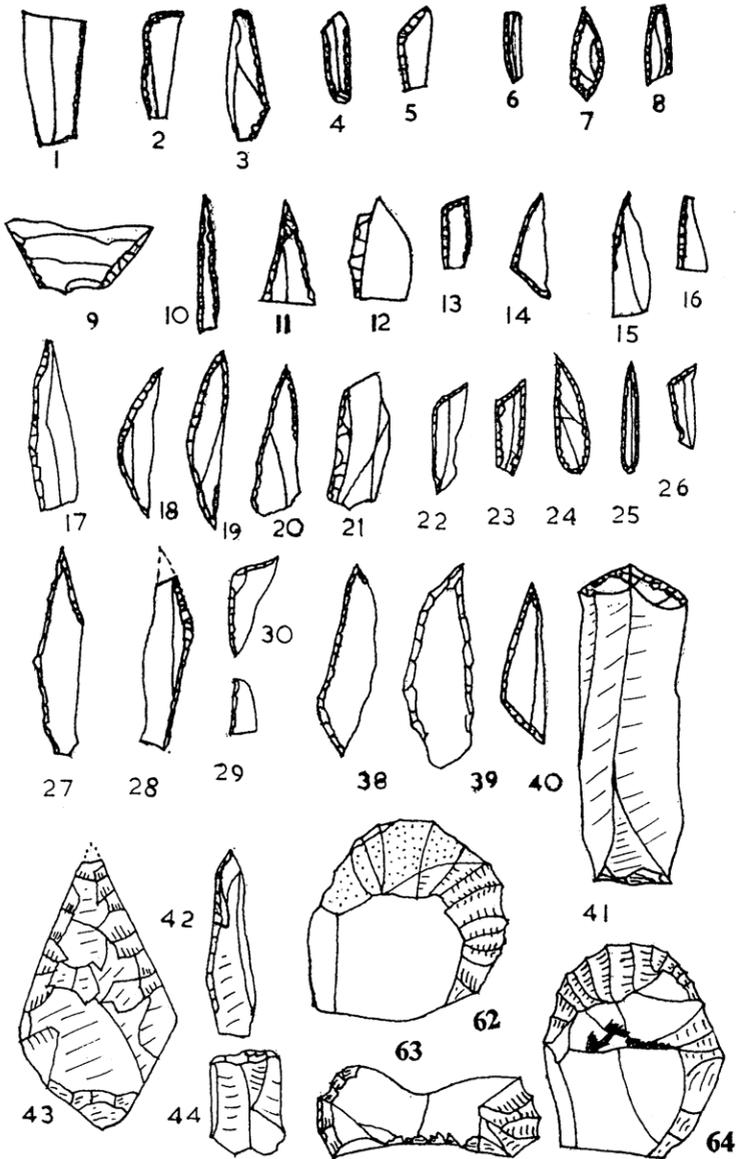


FIG. 3.

two edges to form a point; the fine blunting on No. 55 is paralleled in a borer of similar size from Williamson's Moss, Eskmeals. The remainder of the awls were blunted down only one edge to the point, as illustrated by No. 56.

### *Arrowhead* (Fig. 3)

A fine lozenge-shaped arrowhead No. 43, in brown caramel flint was picked up at the seaward end of Site B. This was found in 1972 and confirmed our view that some of the material, especially at this end of the site, was later than Mesolithic.

### *Blades.*

Site A: This site yielded thirty-two blades, ranging in size from 1 cm to 3.7 cm, of which twenty-four retained their bulbs of percussion and of these thirteen showed signs of secondary working, or utilisation. These included one point with slight retouch and one scraper worked on the end of a blade. There was also a blade made from black chert with no retouch.

Site B: Two hundred and twenty-four blades ranging in size from 0.8 cm to 3.7 cm were found, only twenty-two of which had any sign of retouch. Of the blades with no secondary working, eighteen had been truncated and twelve were minus their bulbs of percussion. There was an end scraper worked on a blade and one which had been retouched to form an oblique point.

Site C: Twenty-three blades were found of which eight had retouch or utilisation, one was retouched across one end and two were worked to form points. Fifteen blades had no bulbs of percussion.

Site D: This site yielded one ridge-backed and two blade fragments of black chert together with three flint blades ranging in size from 1.9 cm to 3.2 cm.

Site E: Here we found one thick blade blunted along one edge, one notched blade and another with retouch in the middle of one edge. Three unworked blades were found, one of which had its bulb of percussion removed.

*Stone artefacts* (Fig. 4).

Artefacts of volcanic tuff were picked up on all the sites, ranging from five pieces from erosion scars at Site E to more than one hundred pieces from Site B.

At Site D artefacts made from volcanic tuff far outnumbered those made from flint and included four microliths and nineteen blades.

Tuff artefacts were also concentrated at the southern edge of Site C, where blades and spalls of plain and banded tuff were scattered over an area of only a few square metres.

Nos. 31 and 32 are single and double platform cores respectively. No. 33 is a single platform core of banded tuff. No. 37 is a large narrow flake with the scars of secondary flaking on its dorsal surface. No. 35 is a "pick" or borer which has resolved flaking down the two edges flanking the point. No. 34 is a scraper worked on a thick flake. No. 36 is an almost parallel sided fragment of schist with a perforation at one end which appears to have been drilled from one side only. It might well have been fractured along its length in antiquity, so that the perforation could originally have been of hour-glass type.

The Petrographic Department of the Institute of Geological Sciences have described the end-scraper, Fig. 3, no. 41, as follows: "although superficially resembling a patinated flint (it) can be seen to be a clastic rock and not flint, when a high-powered lens is used".<sup>9</sup>

A complete list of artefacts made from volcanic tuff is given in Table 3. Microliths made of this material are listed in Table 2.

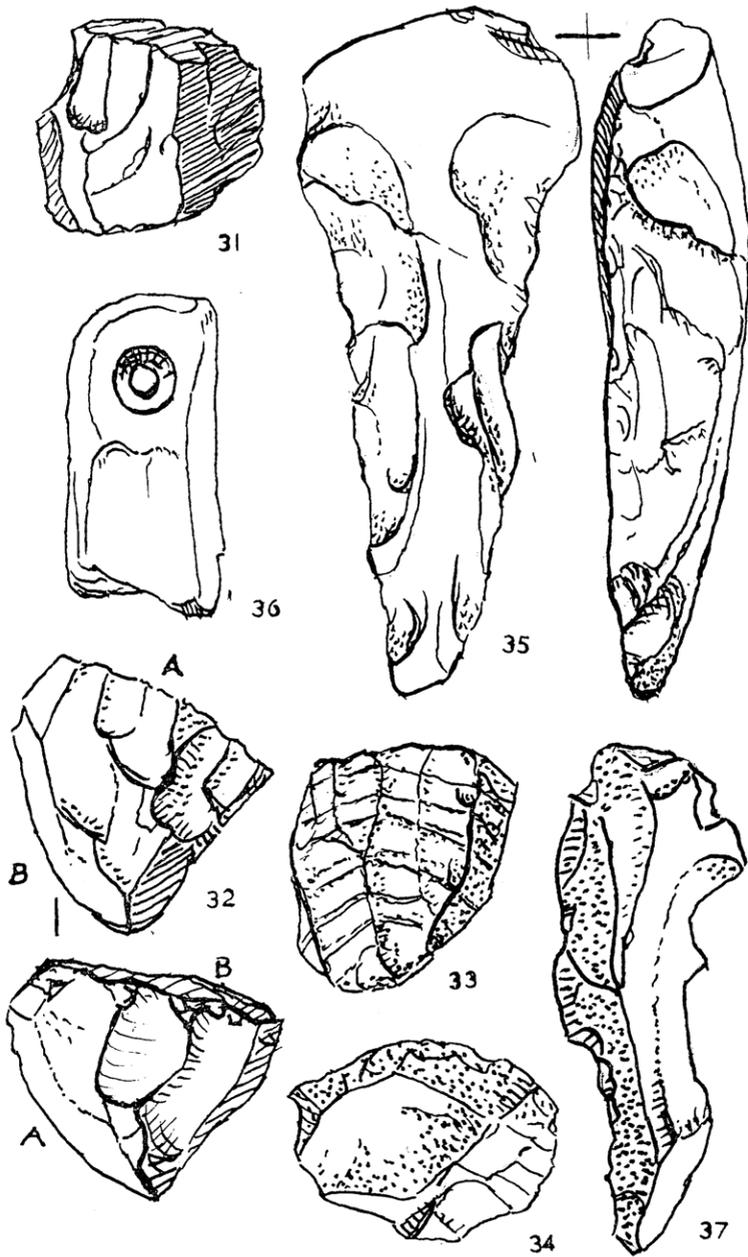


FIG. 4.

**Table 3 : Artefacts made from volcanic tuff  
(including banded tuff)**

(For microliths in this material see Table 2).

Artefact	Site B Rotting- ton	Site C Car- park	Site E Pow- Beck	Site D South Cliff	Site A Tarn- flat
Cores	16	1	1	Nil	2
Blades	26	15	1	19	3
Bulbular Rejects	Nil	1	Nil	Nil	Nil
Flakes	47†	34	4	19	1
Struck Pieces	24	7*	Nil	3	1*
Scrapers	2	2	Nil	Nil	Nil
End scraper ("Grattoir")	Nil	Nil	Nil	1‡	Nil
"Pick"	1	Nil	Nil	Nil	Nil
Core Rejuvenation	Nil	1	Nil	Nil	Nil
Total	116	61	6	42	7

\*Including 1 hammerstone.

†Including 1 flake with blunting on one edge.

‡Clastic rock.

### Discussion.

The most interesting feature of these sites is the extensive use of volcanic tuff, parallel to the use of flint, producing a similar range of artefacts even down to the microlith.

The tuff has been identified as similar to the Borrowdale Volcanic Series by the Petrographic Department

of the Institute of Geological Sciences; the banded variety, which is sometimes referred to as banded jasper, is to be found in Ennerdale. Both types could be expected to occur as pebbles along the sea-shore and in the glacial drift around St Bees.

The end-scraper of clastic rock represents the use of yet another sort of stone to manufacture small tools and demonstrates the effort made by these people to lessen their dependence upon the meagre supply of poor quality flint pebbles. From a study of the beach deposits at St Bees and at Fleswick Bay which lies just to the south of Tarnflat, it would seem unlikely that it was a shortage of flint beach pebbles alone that prompted the use of other types of stone, since there is a larger quantity of flint pebbles here than at Drigg or Eskmeals.

The industry on the South Cliff which seems to have been devoted almost entirely to the production of small stone blades and microliths, lies between 30 cm and 40 cm below the surface of the cliff top, in a position beyond the reach of the plough. The soil build-up over these artefacts seems to be due mainly to soil washing down from the higher ground. The material exposed on Rottington Beck would similarly have escaped the plough.

Examination of the soil in which the artefacts were stratified, in the cliff and the bank of the stream, by Dr W. Tutin of the Department of Botany at the University of Leicester, has shown that it is not suitable for pollen analysis. So that dating by this means is not possible at the present time.

Excavations at Low Clone and Barsalloch in Wigtonshire, showed that 54 per cent and 14 per cent respectively of the flints came from the undisturbed levels, so that it is likely that considerable quantities of material are still undiscovered on the St Bees and Tarnflat sites.

The geometric element among the microliths is much stronger at St Bees than at Eskmeals or Drigg. At the latter site the geometric element was particularly weak, though not entirely absent.

A smaller proportion of material could be ascribed to cultures later than Mesolithic than was the case at Eskmeals, although Neolithic and possibly Bronze-Age artefacts were found, particularly at the seaward end of the Rottington fields. The Mesolithic material from the South Cliff seems to be uncontaminated with artefacts from later cultures. A small quantity of artefacts made from black flint, which is foreign to this area, have recently been found as a small isolated group in a hollow to the north of the golf course, some distance inland from the south cliff. These will be the subject of a further note when work on the site has been completed.

The rate of erosion of the South Cliffs leaves no doubt that a significant part of this site has fallen into the sea, leaving only the tantalising remains of a microlithic tuff industry. Large quantities of material will have been lost during the construction of the various car-parks. Nevertheless we have recovered sufficient material to be certain that the people who made most use of the Tarnflat and St Bees sites followed a Mesolithic tradition, working both flint and stone to make the same type of tools.

Despite the greater quantity of artefacts and debris of volcanic tuff on Site B, including blades and cores, no microliths made of this material have so far been found there. This can be explained to some extent by the stony nature of the field, which makes such small neutral-coloured objects difficult to distinguish. The most interesting finds were the "pick" or large borer made from a large pebble of volcanic tuff and the perforated fragment of slatey schist. The schist appears to have split leaving only one half of an hour-glass

perforation. The material is not suitable for a whetstone and, since it was found in association with the arrowhead and other Neolithic material, it is possibly a fragment of a pendant. It has been suggested that it might be a small fragment of an archer's wristguard, but we think this is unlikely.

Although the practice of removing the bulb of percussion from microliths and some of the smaller blades was carried out at St Bees and Tarnflat, there are no microburins or notched blades in the assemblage from these sites. In this respect they are similar to those at Drigg, Eskmeals, Low Clone and Barsalloch. In strength of the geometric element and in overall size, the St Bees and Tarnflat microliths differ markedly from these Cumberland and Scottish sites.

A scatter of nondescript flints, mainly patinated, has been picked up in the ploughed fields and erosion scars right to the top of St Bees Head above Site B. This includes one large piece of black flint with a chalky cortex and a scraper made from the same material. It has been our purpose in compiling this report to record the sites at St Bees and Tarnflat, dwelling in more detail on those differences of culture which appear to give the sites their particular character. We have tried to avoid, as far as possible, comparison with Mesolithic sites outside the North West region until more of the Cumberland sites have been exhaustively examined.

Differences in the type and form of artefacts made by people following the same traditions, are bound to occur when they are living in different environments, separated by distance and possibly time, from other groups. Different people will develop in slightly different ways, depending upon the sources of food available, thus one area might produce better fishing and another, better hunting, so that greater emphasis would be placed on manufacturing the appropriate tools and weapons.

### References.

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- <sup>9</sup> The Petrographic Department of the Institute of Geological Sciences. Private communication.

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