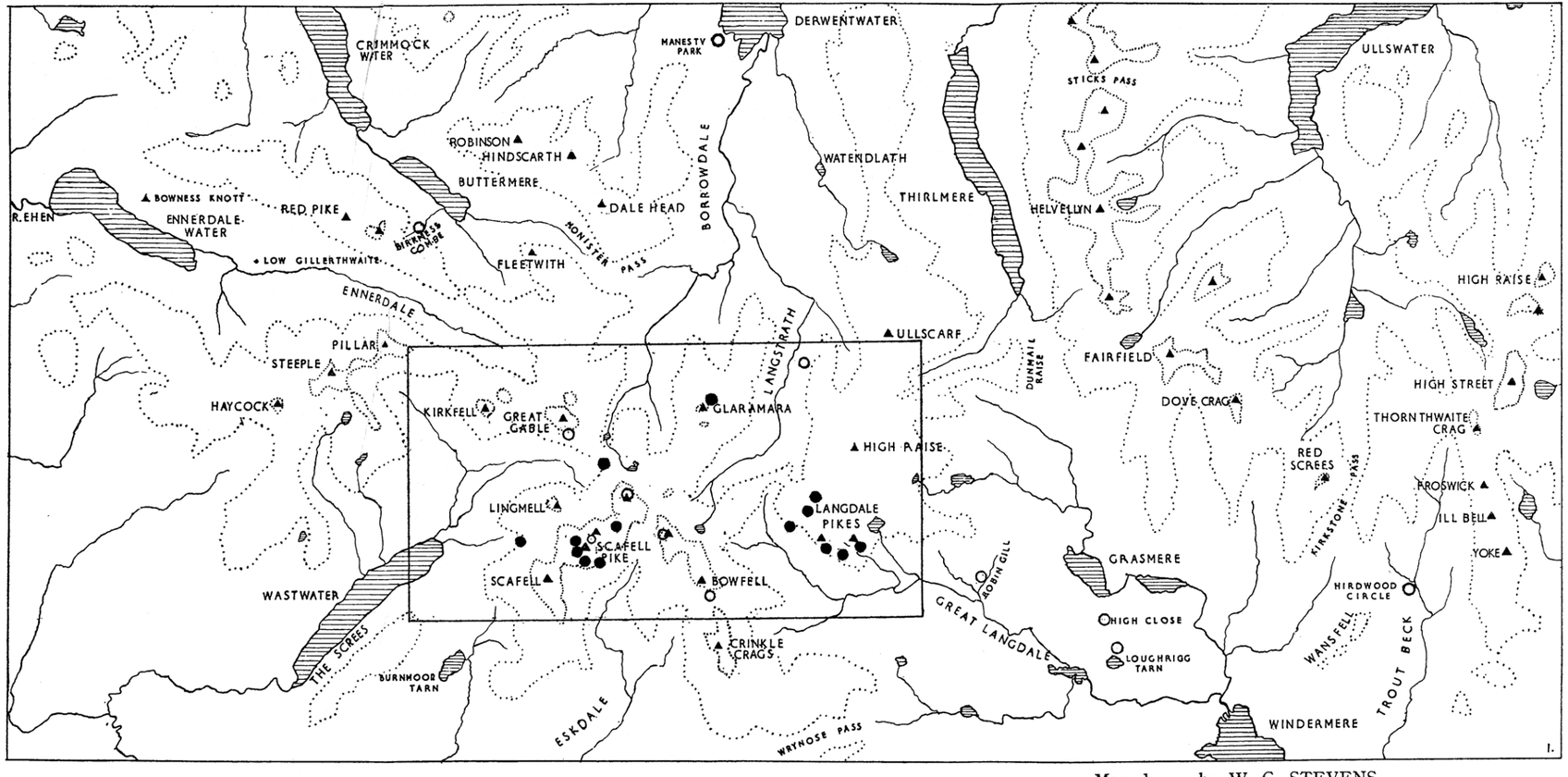


STONE AXE FACTORY SITES IN THE CUMBRIAN FELLS

MAP No. 1

SCALE OF MILES

0 1 2 3 4 5

REFERENCE

CONTOURS –

1500'

2500'

FACTORY SITES

FINDS .....

FOR CENTRAL AREA (WITHIN RED LINE) ON LARGER SCALE .. SEE MAP No. 2

Map drawn by W. G. STEVENS

ART. I.—*Stone axe factory sites in the Cumbrian fells.*
By R. G. PLINT.

Read at Keswick, July 7th, 1961.

IN 1947 the Pike of Stickle factory site was discovered by Mr Brian Bunch, and Miss Clare Fell's article on the Great Langdale stone-axe factory, communicated to our Society in 1950, has been printed in an earlier volume of *Transactions*.[1] In it she stated that the full extent of the workings was not known, but she suggested that further sites might be expected on Mart Crag (a short distance west of Pike of Stickle) and on Bowfell, as there were outcrops of similar rock at those places. Although nothing further on the subject has been published in our *Transactions* until now, a good deal of work has been done, and I hope to show that Miss Fell's suggestions have been more than justified.[2]

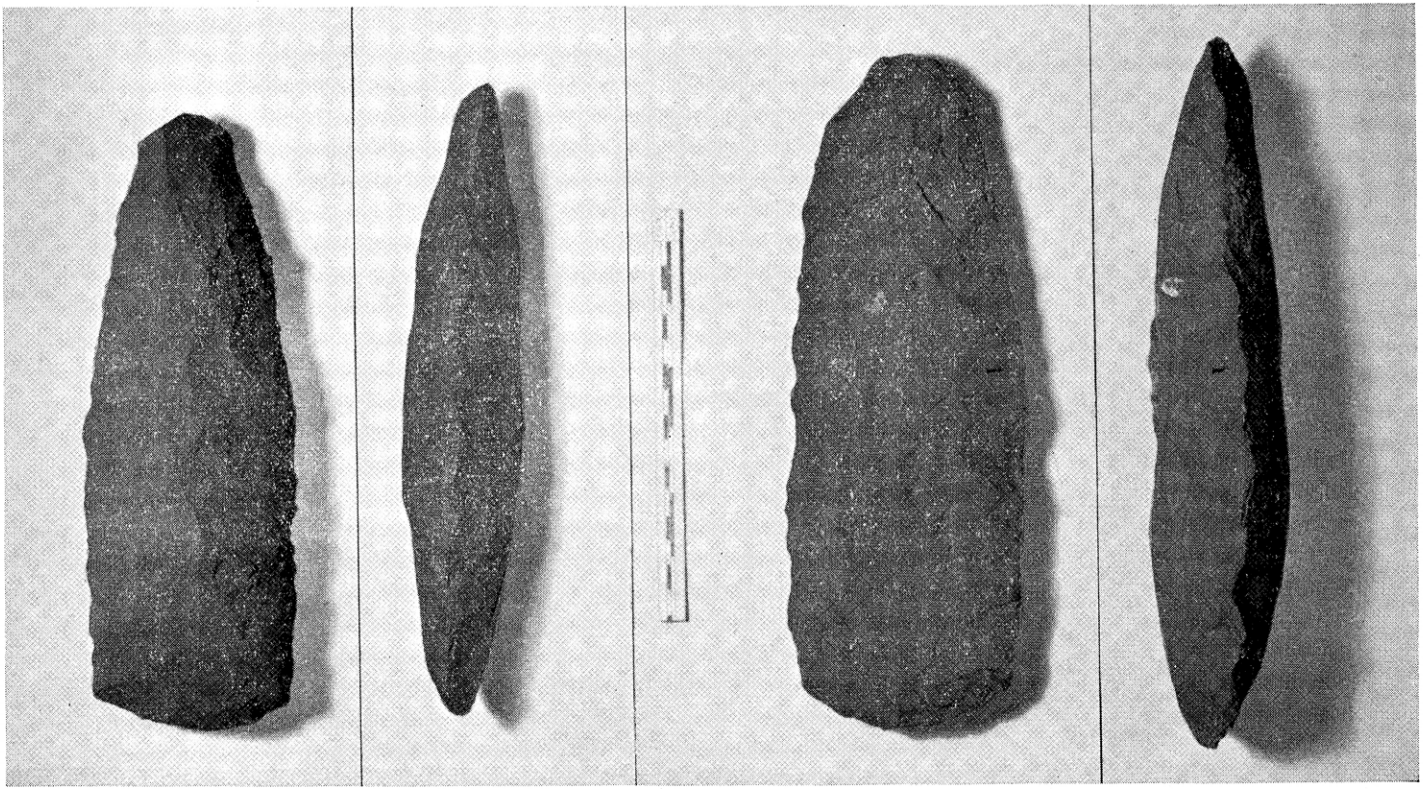
My first visit to the Pike of Stickle site was made in 1950, followed by many more, but it was not until 1952 that I discovered an extensive site on the adjacent peak of Harrison Stickle (NY 281073). This is on the south face, overlooking the Dungeon Gill ravine, and subsequent visits showed that the workings continued round to the eastern side, along the whole of the outcrop, until it disappears in the screes at the N.E. corner of the peak, where the pathway ascends from Stickle Tarn.* Specimens[A] taken from this site were identified as belonging to Group VI, with the exception of a flake and a broken axe, both of which were of types not encountered before in axe work. Following this discovery, I went over to the Pike with the intention of exploring the face of the crag

[1] CW2 1 1-14; cf. also *Proceedings of the Prehistoric Society* (hereafter referred to as *PPS*) xv (1949) 1-20.
[2] Cf. also *PPS* xvi (1950) 191 ff.; xix, pt. 2 (1953), 230; xx, pt. 2 (1954), 238 f.
* For this and all subsequent letter references see Appendix II, below.

from the western side, and I found many exceptionally fine sites where the flakes showed hardly any traces of patination, appearing as sharp and undamaged as on the day when they had first been struck. Two particularly fine undamaged specimens of broad-butted axes (Plate I) were found lying on one pile of flakes, and it is difficult to believe that they had been left behind deliberately. On two of these sites I found several flakes[B] which appeared to belong to Group XI and later examination showed that my surmise had been correct. The result of this was that I was asked to try and find the relative outcrop, in order to settle the controversy that had arisen about the location of that Group. It will be remembered that there had been a suggestion that the Group XI flake, found when the site was first discovered, had come from South Wales where that rock is known to occur.[3] I paid several visits to Langdale for this purpose, but was unable to do anything, owing to bad weather, until late in February 1953 when the snow cleared away; I then returned to the spot where the flakes had been found, and examined the rock round about until, about 20 ft. higher, I found an outcrop that appeared similar to the specimen flake that I had with me. I took several specimens for petrological examination, but the subsequent report showed that the rock was only "near XI", and consequently the search would have to continue.

Petrological reports generally take several months to come through; so, pending their arrival, I started to explore the crags and gullies that lie between Pike of Stickle and Loft Crag, finding plenty of evidence in the shape of flakes, discards and hammer-stones, but in a declining degree as the search approached nearer to Loft Crag. This is due to the inclination of the bedding plane of this particular band of rock. It shows on Pike of Stickle at a point several hundred feet below the summit, and thereafter can be traced across the face in an easterly direction

[3] Cf. *PPS* xvi (1950) 191 ff.



PL. I.—Two roughouts of the broad-butted type from the south face of Pike of Stickle. Both show exceptionally fine workmanship in flaking.

facing p. 2.

Photos by W. M. Speight.

at an inclination of about 20°, getting higher and higher as it crosses the gullies until it reaches its highest point at Loft Crag. In addition to the upward tilt there is also a declination back into the fell of much the same angle, as shown by the course of the outcrop along the S.E. face of Harrison Stickle. This backward tilt led me to believe that there was a possibility of an outcrop appearing in Langstrath, which lies to the north and west of the Langdale Pikes, and this possibility has since been confirmed. Professor Watson's site (1931[4]) (NY 271684) is actually on the Langstrath side of the Pikes.

During many of these visits pieces of rock similar in appearance to granite were often found (and can still be found) amongst the piles of flakes. They appear to be pieces of water-worn pebbles or boulders; one of them,[5] sent up for examination, was identified as similar to granite found at Low Gillerthwaite, Ennerdale. It is probable that in their original form they were used as hammer-stones or anvils. Further examination might be useful, as some of them may not be granite[C].

About this time, too, I found a flake (Fig. 1) bearing secondary working; so far it seems to be the only such specimen. It is 3 in. long, oval in shape except at one end, which is straight and a little thicker in section. Down one edge there is a row of alternate chippings, making it into a small saw that can be held easily between finger and thumb. It may well be that smaller tools such as knives and scrapers were manufactured here, though at present there is no evidence to support this theory. It should be remembered that flint pebbles are to be found on the beaches, and these were worked at sites on Walney Island.

My visits to the fells during those years were not confined solely to Langdale. In Birkness Comb, Buttermere, I found some flakes and a discard; later, on Great Gable,

4 *PPS* vii (1941) 58-68.
5 Geological Survey and Museum, 1952, E 25129.

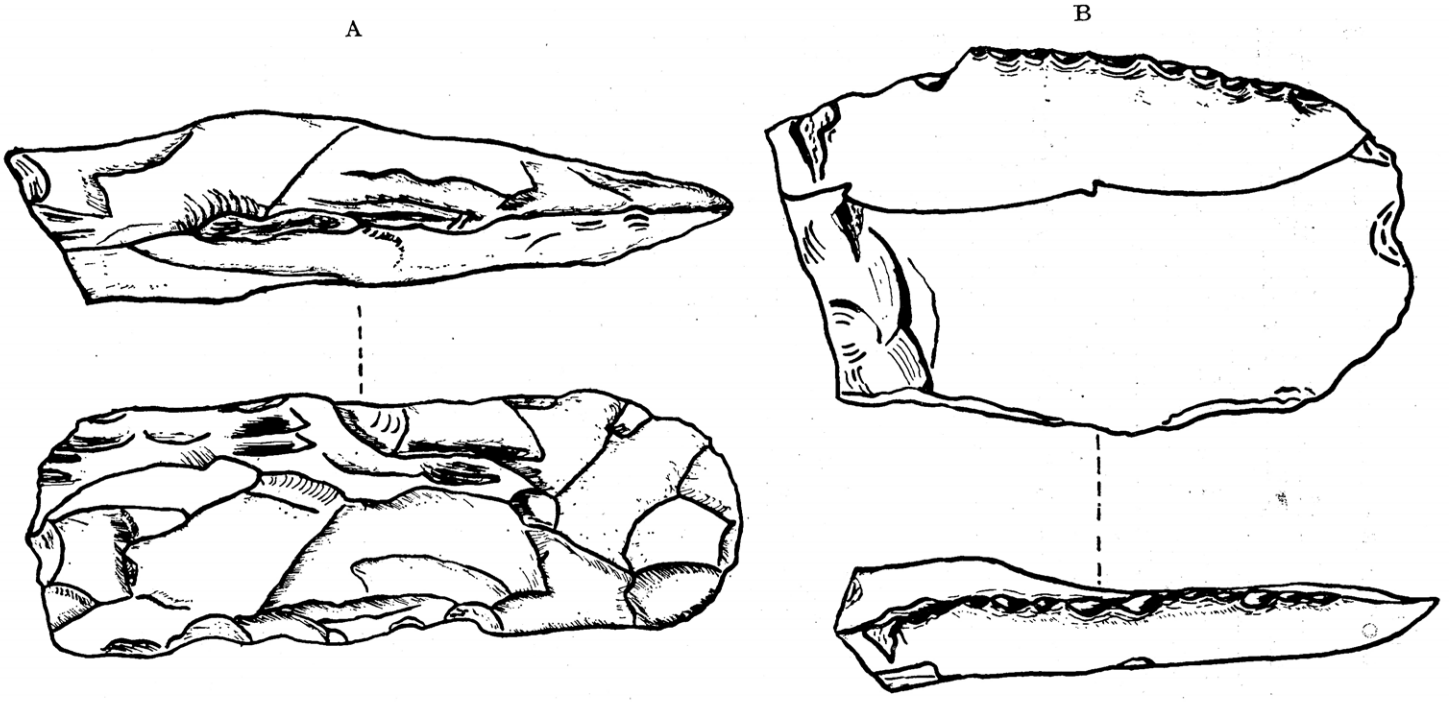


FIG. 1.—A. Very small roughed out chisel. (Found by J. Davies.)
B. Flake showing secondary working in saw form.
Both from Pike of Stickle. (Actual size.)

between the foot of Great Hell Gate and the Napes Needle, more flakes were found. The specimens from Birkness[D] have been accepted, but there is some doubt about those from Gable[E]: the finding of a discarded rough-out would probably clinch the matter. Langstrath was also visited and a flake[F] found on the pathway near the Gash Rock (NY 268114); this might have been dropped by someone returning from the Langdale sites, but the presence of a large piece of similar rock in the bed of the nearby stream seemed to preclude that possibility. A further search in 1959 seemed to point to the Gash Rock[F] as the outcrop, but an examination of specimens taken from it has pronounced it to be a tuff, somewhat similar to Dr Wallis's 1112/4 material.

It was in September 1955, while climbing with my son Guy on Gimmer Crag (the prominent buttress below Loft Crag), that I noticed some flakes at the foot of the S.E. Gully which appeared similar to my Group XI specimen, and I took them home for comparison. As far as one could judge, the specimens were identical; so a few days later my son and I set out for the crags to have another look for the outcrop. We went to the foot of the gully to get our bearings, and then climbed up the broken crags on the right, working about until we found the expected "flake trail", which we followed to a terrace some 20 to 30 ft. below the summit of Loft Crag (NY 278071). There were abundant signs of workings here — and it will be remembered that a site had previously been found at the eastern end of the crag, by Miss Fell and others in 1949. Specimens were taken from the face of the crag, above the terrace, and then we went over to the Pike of Stickle site, to see if by any chance we could find the outcrop that had eluded me on the previous occasion. This time I stayed on the spot where the Group XI flakes had been found, and my son climbed round until he was directly above me, then taking several specimens of the nearby rock. Incidentally, they were taken only a few

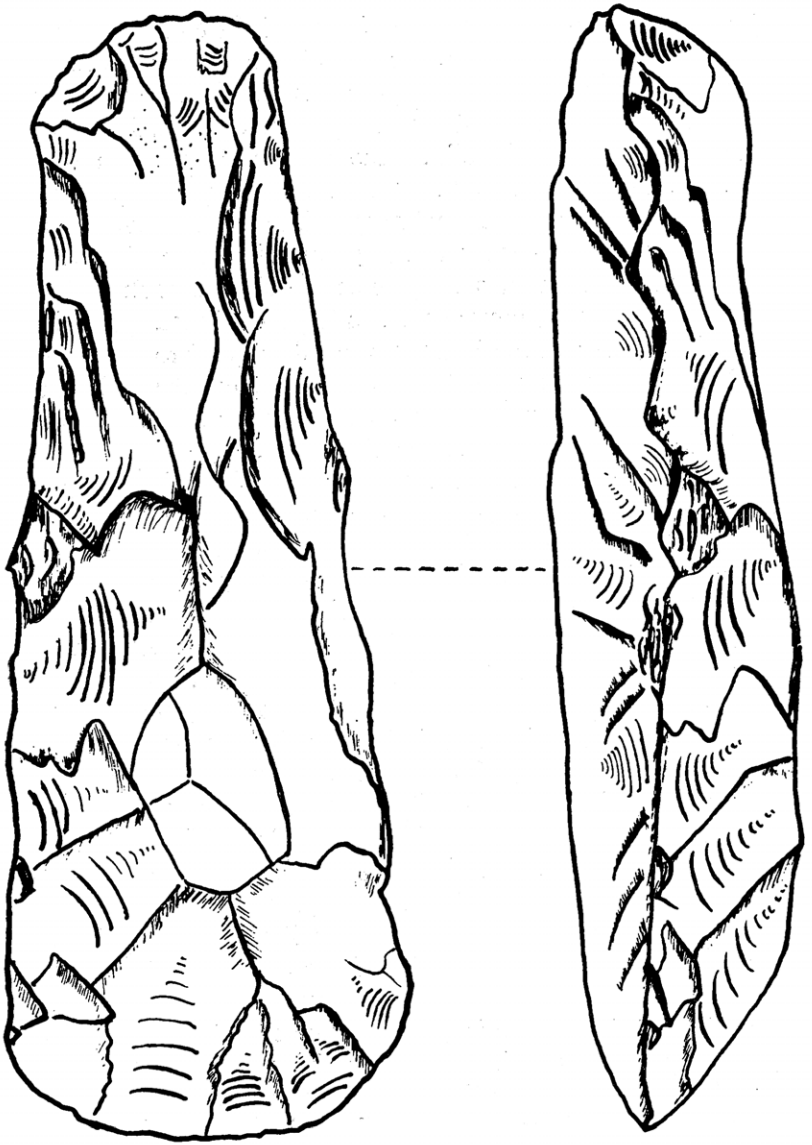
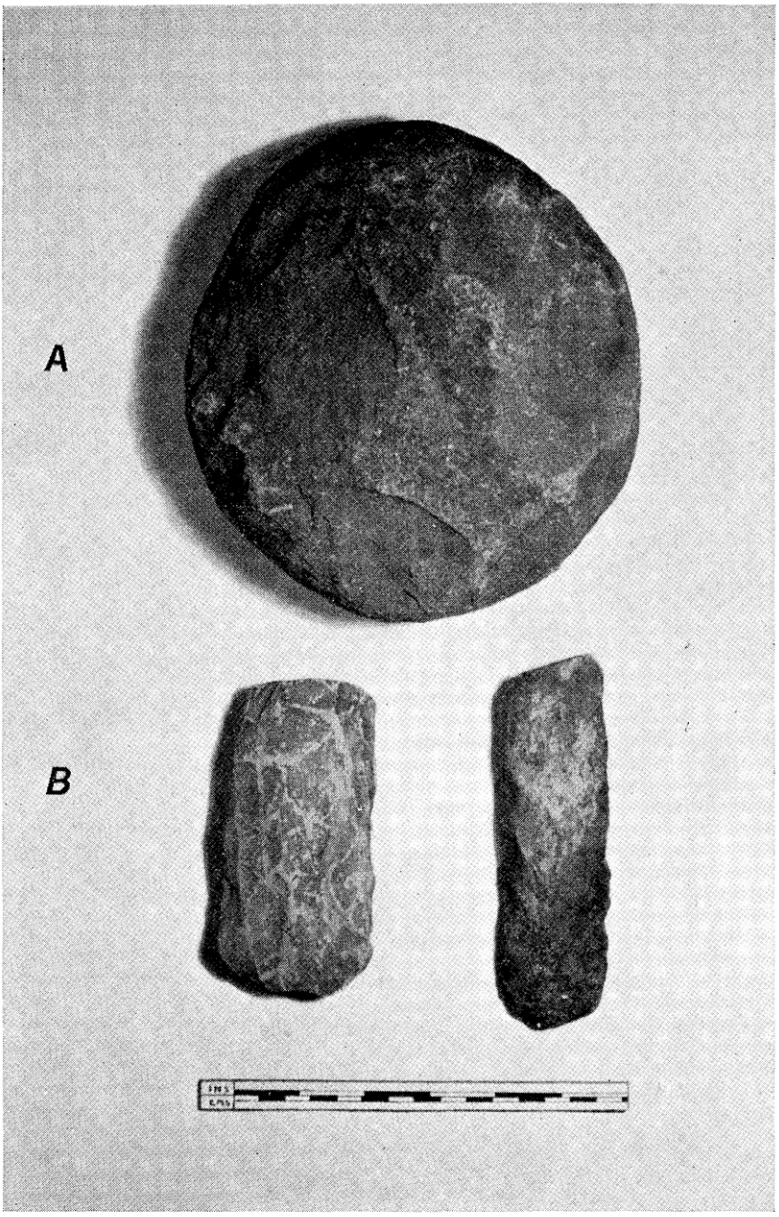


FIG. 2.—Roughed out axe showing finely tapered sides. Pike of Stickle. (Actual size.)



Pl. II.—A. The curious stone disc found on the Harrison Stickle site. The flatness of the sides appears to be natural.

B. Roughed out axe and chisel, both broken, from Brown Tongue site. Heavily patinated, they show signs of having been trampled upon for many years.

facing p. 7. *Photo by W. M. Speight.*

feet to the right of the place from which I had taken the "near XI" type. Both sets of specimens were duly sent off for examination, and great was our delight when we received confirmation from the late Dr J. F. S. Stone that the outcrops of Group XI in the Lake District had now been found, and the controversy had thus been settled.[6] The whereabouts of the outcrop of Group VIII still remains to be solved, although this too has been the subject of several searches.

Shortly after this, I found a curiously shaped stone (Plate II) on the track that runs through the Harrison Stickle site. It is a disc of rock, about 2 in. thick and 6 to 7 in. in diameter; for three-quarters of its length the circumference has been rounded, apparently by rubbing. A somewhat similar disc has been found on the same site, but in a much rougher state; so far, no information as to their purpose has been forthcoming. Professor Stuart Piggott is of the opinion that they could not be claimed as stone discs similar to those found in various Neolithic contexts.[7]

In 1952 I had written a short account of the Great Langdale factory for the *Journal* of the Fell and Rock Climbing Club of the English Lake District, and it had aroused some interest amongst the members. One of them, Mr A. W. Green of Liverpool, was walking along the track on the Mickledore side of Scafell Pike, in September 1954, when he noticed what he thought were some large flakes lying in the pathway. He picked them up and sent them for identification to the British Museum, which confirmed that they were indeed man-made flakes, and that the rock[G] was Group VI. This discovery opened up new ground, but for various reasons nothing further was done until 1959, when there was a spate of discoveries in that region.

The earliest recorded finds in the Scafell Pike area were

[6] *PPS* xx, pt. 2 (1954), 239 and note 2.
[7] Cf. Piggott, *Neolithic Cultures of the British Isles* (1954) 144 and 176.

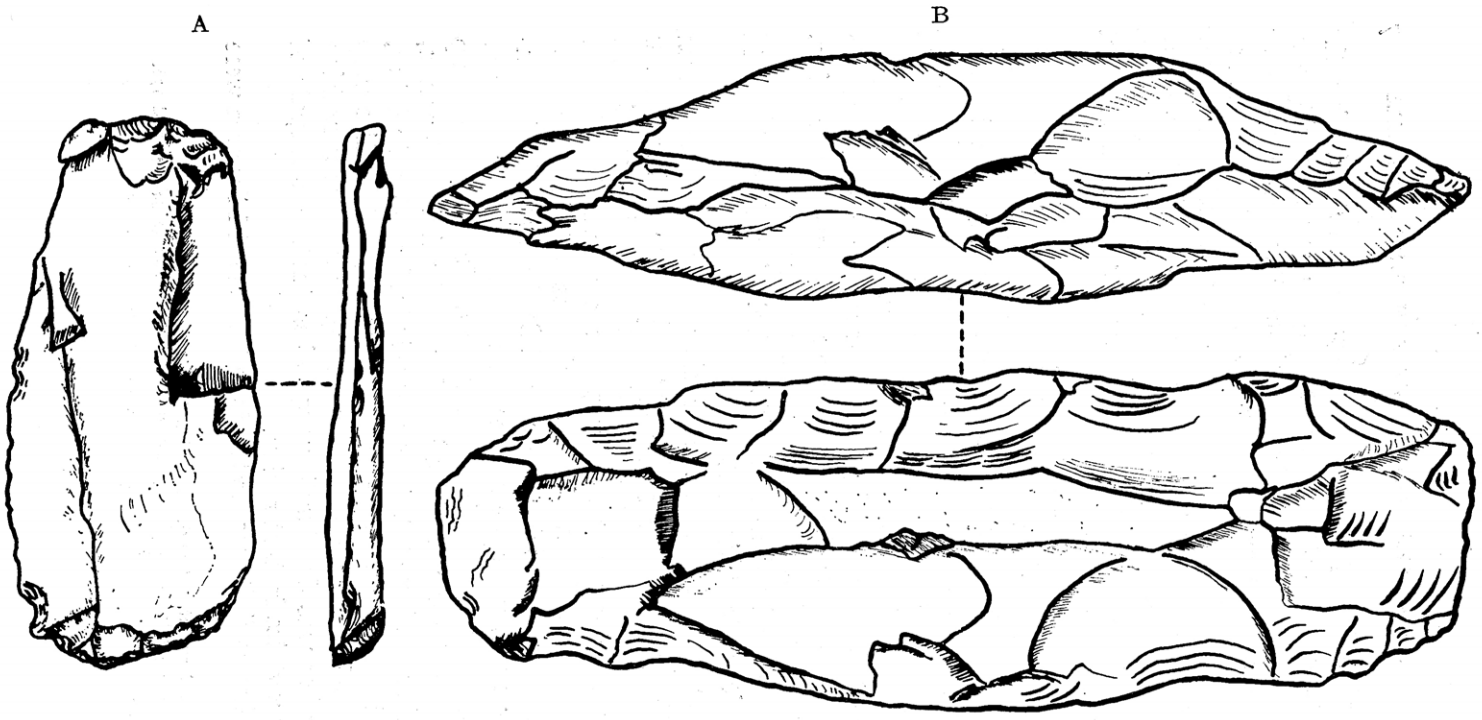


FIG. 3.—A. Flake with possible secondary working. B. Very small roughed out axe.
Both found on Pike of Stickle by J. Davies. (Actual size.)

both made by Mr C. F. Tebbutt: an axe in the hollow between Broad Crag and the Summit in 1931,[8] and a flake near the path over Broad Crag, on the Esk Hause side, a few years later.[9]

In May 1959 my son was ascending Scafell Pike by the track on the Lingmell side when he noticed a number of flakes in the pathway at a point (NY 213075) where it turns to the right over a small outcrop. Searching about, he found quantities of flakes and several broken rough-outs. He then continued on his way to the Mickledore side, where he again found further evidence of axe manufacture. These finds were reported to Miss Fell, and shortly afterwards all three of us set out from Borrowdale to inspect the new sites, via Styhead and the Corridor route. On leaving Styhead that route drops down a little, to pass below the screes from Spout Head (NY 221093), and here—right in the middle of the track—more flakes[H] were found. An examination of the scree showed that the work had been carried on there, and a rough-out was found. We then proceeded on our way to the site on the Lingmell side of the Pike; it was found to be fairly extensive, but nowhere was there any real depth of chippings such as can be found on the Langdale sites. Another curious feature was that the chippings are frequently found covered over by quite large pieces of rock, instead of the rock being embedded in them, as might have been expected. The large angular blocks could hardly have rolled over on their own, as the slope at that height (3,000 ft.) is not very steep. Specimen flakes, rough-outs and two hammerstones[I] were collected here for examination. Unfortunately, there was not sufficient time to visit the Mickledore sites, so we returned via the summit, Esk Hause and Grains Gill. No traces were seen crossing the hollow between the Pike and Broad Crag, but on the further side of the Crag we found more flakes[J], and this

[8] CW2 xxxiii 287.
[9] CW2 l 1, note 3.

FIG. 4.—Great End. NY 224084. Appendix ii No. 1115. Much of the flaking is due to frost fractures. Found by W. Fletcher. (⅔ actual size.)

site would appear to coincide with that where a flake was found by Mr Tebbutt in 1939.

By a strange coincidence Miss Fell had received, a few days prior to this visit, a letter from Mr T. A. Gomersall, stating that he had found a rough-out some years previously, when ascending the Pike via the Lingmell track, and that he had handed it over to the late Miss Mary Fair of Eskdale (but it would seem that she had never reported it). He also submitted rough-outs and flakes from this site, one of which has been examined petrologically.

I gave a short account of these discoveries and showed some of the specimens at the Society's meeting in July 1959. This aroused the keen interest of our member Mr W. Fletcher of Calderbridge, near the foot of Wasdale. Living so close to the spot, he was able to put in some intensive exploration on the Pike and he discovered several more sites on the Mickledore side, and also traces of workings on Great End (Fig. 4). Specimens[K] from all these sites have been examined petrologically; some have been identified as Group VI, but for others the term "near Group VI" is being applied, on Dr Wallis's recommendation, pending the possibility of a new group being identified to cover the material. So far, only one polished axe corresponding to the Scafell Pike material has been identified: it is described in a note by Miss Fell.[10]

In September 1959 I visited the area again and was able to confirm that Mr Fletcher had re-discovered the site previously found by Mr Green; and it is certain that the site found by my son on the Mickledore track is the same one also. I met Guy that day on Mickledore, and he told me that he had found a site on Brown Tongue at about 1,500 ft. (NY 200074) on his way up that morning. We went down to examine it and found six discards and a number of flakes[L], all but one of them heavily patinated. The site was right in the centre of the track

[10] Cf. Appendix I, pp. 21-23, below.

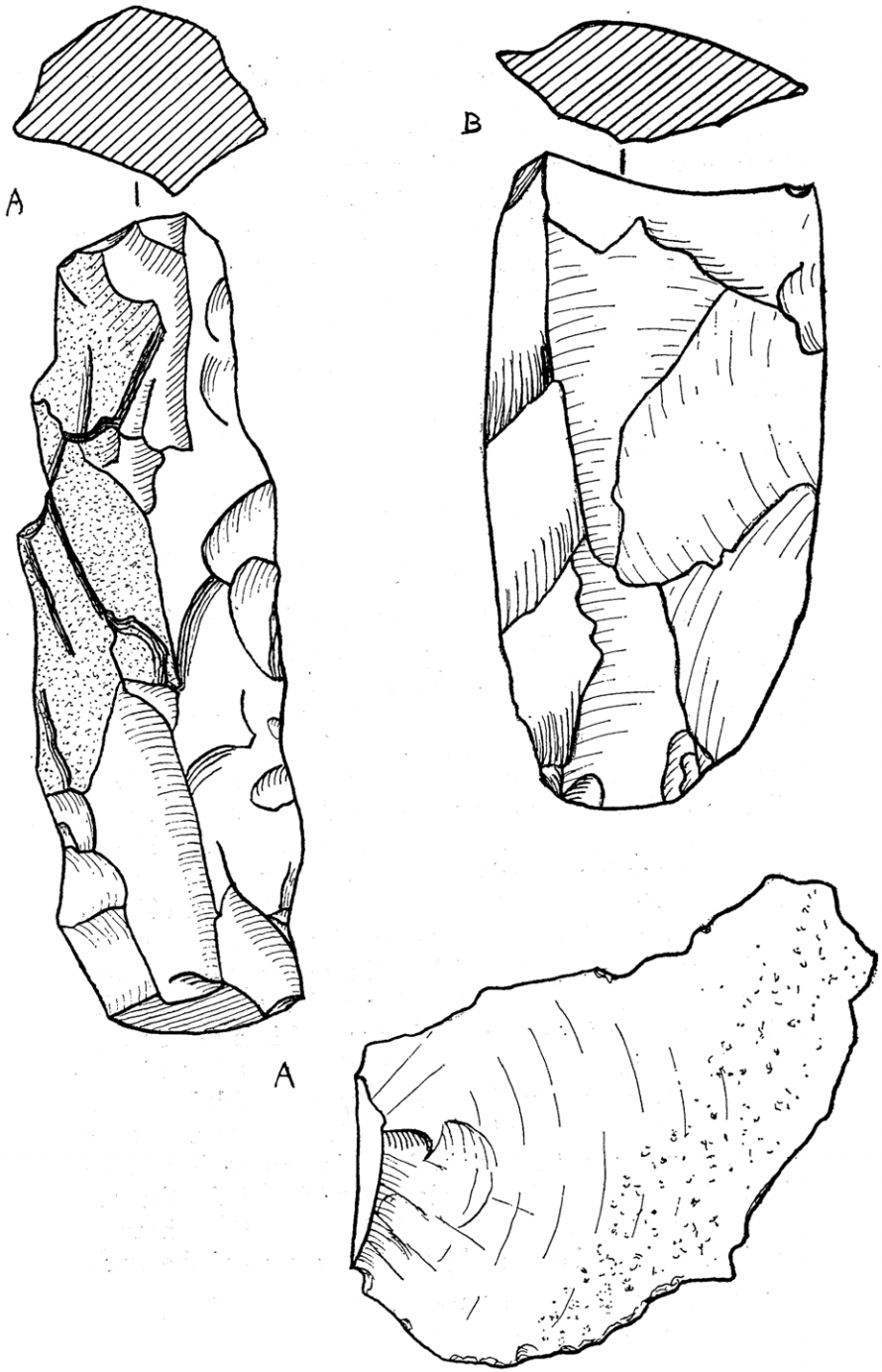
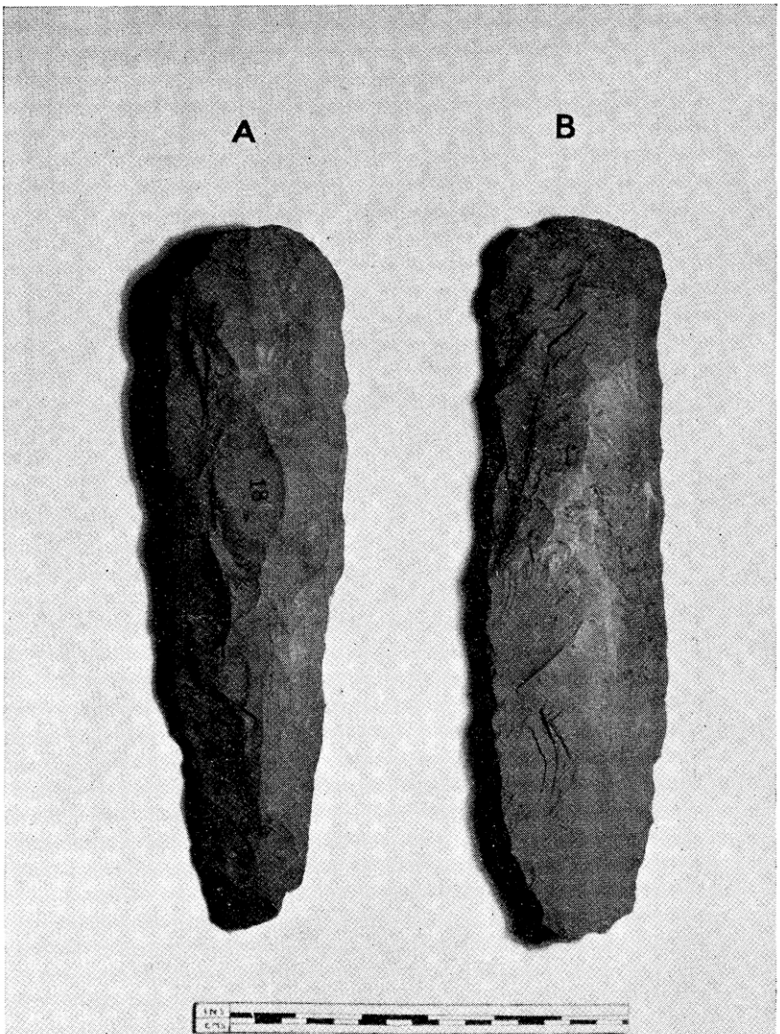


FIG. 5.—A. Roughed out axe and flake from Glaramora. See appendix ii, O.
B. Roughed out axe from Scafell Pike/Lingmell Track. See appendix ii. K.
All found by T. A. Gomersall. (⅔ actual size.)



Pl. III.—Two roughouts of the narrow-butted type.
A. Pike of Stickle. Found close to those on Plate 1.
B. Site west of Pike of Stickle.
Each one has been spoilt by a plunging flake.

facing p. 13. *Photo by W. M. Speight.*

and must have been walked over by very many people during the last hundred years — so it is not surprising that some of the specimens (Plate II) bore rust stains, from the nails of climbing-boots. The axe specimens were all on the small side, and were probably made from rock found on the moraine of which Brown Tongue is composed.

A visit was also paid to Mart Crag[M] (NY 264078) in 1959, and again there were plenty of flakes on the site, together with rough-outs; the rock was confirmed as being from Group VI. A subsequent visit to the fell lying between this Crag and Pike of Stickle disclosed many more sites and a good specimen of a narrow-butted axe was found (Plate III). Although several visits have been made to Bowfell the results have been disappointing so far, and the same may be said of Esk Pike[N]. A few flakes have been found on each fell, but as yet there is no real evidence of any work having been carried on there.

The most recent discovery is one on Glaramara by my son, in October 1959, subsequently confirmed by a later visit. The site is a promising one and it is hoped that it may be possible to have it examined scientifically in the near future. The same site was discovered independently by Mr T. A. Gomersall in 1960, and a rough-out and flake[O] (Fig. 5) collected by him have been sent to Dr F. S. Wallis for petrological examination.

Further investigations were carried out in 1960 by Mr Fletcher, who collected a number of rough-outs (Figs. 6-8) from the site on the Mickledore side of the Pike and one[P] close to the summit cairn (NY 215072); he also found flakes much lower down Brown Tongue than those found in 1959. Finally, in September 1960 Mr C. H. Houlder, of the Royal Commission on Ancient Monuments in Wales, whose work on a Neolithic axe factory site at Mynydd Rhiw, Caernarvonshire, has recently been published,[11] accompanied us to the Brown Tongue and

[11] *Trans. Caernarvonshire Hist. Soc.*, 1960; to be published in detail in *PPS* xxvii (1961).

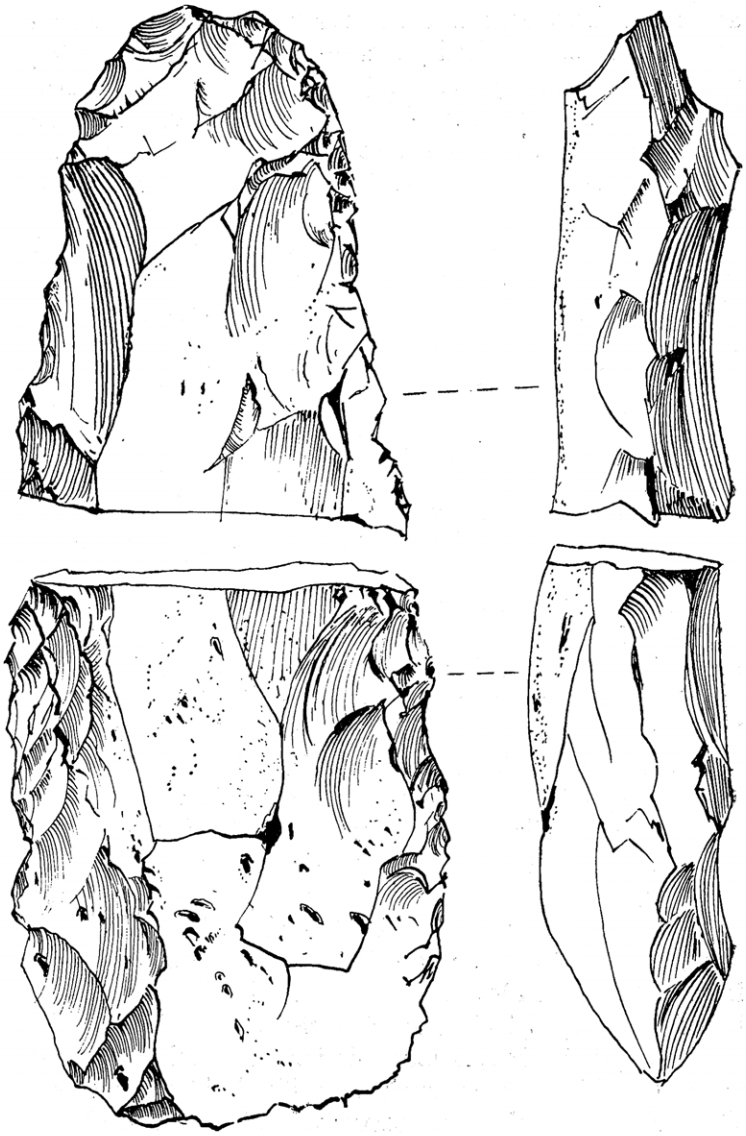


FIG. 6.—Scafell Pike. NY 213070. Roughed out axe broken in half in an advanced stage of manufacture. One half was found lying on a ledge and the other portion on the ground below by W. Fletcher. (⅔ actual size.)

Scafell Pike workings. As a result of this visit Mr Houlder is hoping to start an investigation with a field team in July 1961; this venture has been sponsored by the Prehistoric Society and by the National Trust, who own much of the area, and it has the support of this Society.

* * *

It will have been noticed that I have mentioned the finding of flakes and sites on the ordinary tracks and pathways over the fells; this I think shows that our forebears usually climbed the fells as we do today — by the easiest route. The Brown Tongue site for instance lies directly in the pathway that follows the crest of the ancient moraine mound leading up to Hollow Stones. Here the walker is confronted by the precipice of Pikes Crag and is forced to go either to the right or to the left to pass it. On the right the way lies up steep scree to Mickledore (the name of the gap between Pikes Crag and the crags of Scafell); on the left it leads up to the col between Lingmell and Scafell Pike. From both these points the way is now clear to the summit of the Pike, and both tracks pass through different sections of the extensive factory site. Passing over the summit towards Esk Hause, flakes are again seen in the track on the further side of Broad Crag. From this high-level route there is no difficulty in ascending Great End (on the left hand), where rough-outs have been found, or carrying on to Esk Hause and Esk Pike, where flakes have also been found.

Groups VI and XI, together with the unnamed material from Scafell Pike and the flakes found on Great Gable, have one thing in common: they are all found in the rock comprising the Borrowdale Series of Volcanic Tuffs. A peculiarity of this rock is that it tends to weather white; I sometimes wonder if this lighter colour was used by Neolithic man as a guide — the light-coloured band on Pike of Stickle shows up quite clearly when seen from Esk Pike or Bowfell.

FIG. 7.—Scafell Pike. A. NY 212073. B. NY 211072. Roughouts in process of manufacture. In each case the work has commenced with the shaping of the butt. Found by W. Fletcher. ($\frac{1}{2}$ actual size.)

Looking back over the years at the pattern of the discoveries, it would seem that what at first appeared to be an isolated factory now looks more like the final link in a long chain of events.

I do not think there can be much doubt that the people who worked on these sites had their permanent settlements along the Cumberland coast and in the Furness district; and it would appear that the original penetration into the fells came from the west, culminating finally in the discovery of the Langdale site. The confirmation that a piece of granite found on Pike of Stickle was similar to that occurring at Low Gillerthwaite, Ennerdale, provides an important clue to the probable route between the Ehenside Tarn settlement (where axes of Group VI rock in various stages of manufacture have been found) and the Langdale factory. The river Ehen may have been followed to its junction with Ennerdale Water, or a direct route taken over the fells to the head of the lake, near Low Gillerthwaite, where granite boulders and pebbles suitable for use as anvils or hammer-stones[12] can be found. From thence the way would lead directly up the valley to Windy Gap (between Green Gable and Great Gable), down to Styhead and then up again to Esk Hause. A divergence from this route, as it descends from Windy Gap, may account for the probable site near the Napes Needle on Great Gable, and the finding of flakes and a rough-out at Spout Head, on the right of the track as it leaves Styhead, provides another clue. From Esk Hause the way would lie past Angle Tarn and Rossett Crag to the summit of Stake Pass; and almost in a direct line from the pass to Pike of Stickle, a mile distant, lie two more sites, namely Professor Watson's (1931)[13] and Mart Crag Moor (1948).[14] As regards an approach from the north, there is considerable evidence for Neolithic settle-

12 Cf. also *PPS* xv (1959) 9, ix and pl. iii 6 for a hammer-stone of hornblende diorite granite from Criffel or Dalbeattie; a further specimen is in the author's possession.

13 *PPS* vii (1941) 58-68.

14 *PPS* xv (1949) 1-20.

FIG. 8.—Scafell Pike. Specimens from various sites on the Pike between contours 2750′ and 3000′, found by W. Fletcher. (⅓ actual size.)

ment in the Keswick area. Rough-outs were found at Portinscale in 1901,[15] and in 1960 Mr J. B. Nevitt found one[Q] at the S.W. corner of Derwentwater (NY 251192). There is also the further evidence of the finding of a flake near the Gash Rock in Langstrath. Whether the northern approach was responsible for the site on Glaramara is perhaps doubtful; this mountain is completely cut off from the fells to the west, north and east by the Borrowdale and Langstrath valleys, and the only high-level approach is from Esk Hause. The finding of a piece of granite hammer-stone or anvil[R] on this site, similar in appearance to that found on Pike of Stickle, tends to support exploration from Esk Hause. On the eastern side there is the evidence of the butt-end found at Robin Gill,[16] Langdale, a rough-out at Loughrigg Tarn,[17] further east, and more recently, in 1958, another rough-out was found by Mr T. G. E. Powell at High Close (NY 341053) just above the tarn; these finds imply a high-level route as far as the head of Windermere. The use of that lake would present no difficulty to a people able to transport their axes to the Isle of Man, and it may well have been used as part of the transport route to the Furness district, where many rough-outs have been found from time to time. Confirmation of a true eastern route is suggested by the finding of a rough-out at Hirdwood Circle,[18] Troutbeck and further east still of another rough-out and two polished axes at Gaythorn Hall[19] two miles south-east of Crosby Ravensworth. The track may have gone by way of Thornthwaite Crag, High Street and High Raise and the neolithic settlements on Bampton Common and at Shap, and if this were so it would mean that the Roman road over High Street followed the line of the earlier track for part of its way. Penetration from the

15 CW2 ii 418.
16 CW2 xxix 331.
17 PSAL2 vi 438.
18 CW2 l 7.
19 In the possession of O. R. Bagot, Esq., Levens Hall.

south would naturally come to the head of Windermere; the finding of a small rough-out near the summit of Underbarrow Scar,[20] Kendal (NY 487921), in 1958 is of great interest, for it suggests that the limestone ridge formed part of the southern approach route, and links up with the more recent find of a rough-out at Slyne[21] (SD 475658) and an earlier one[22] on the Morecambe Golf Links.

From an examination of the known sites it is evident that the output of the Langdale factory must have far exceeded those of the other sites. The amount of its waste is so great that the scree shoots running down from Pike of Stickle are distinctly lighter in colour than those of other crags in the valley, and the terraces on the face of the Pike are still piled high with flakes of all shapes and sizes. The Harrison Stickle site, near by, does not show anything like the same activity; one wonders whether the cold and draughty situation of that site had anything to do with it. The face of the outcrop on the Pike of Stickle site is of considerable thickness, and would therefore provide a ready supply of loose material both on the terraces and on the scree below. In addition, the site is well sheltered from both the north and the east, and even in the middle of winter it can be quite pleasant amongst the terraces; in fact it is a perfect factory site.

A word of warning should be given to intending visitors. All the sites mentioned are well within the range of the ordinary fell-walker, with the exception of those on the face of Pike of Stickle and in the gullies lying between South Scree and Gimmer Crag. Great care is required owing to the steepness of the terraces and the looseness of the rock in the gullies, and they should only be visited in the company of climbers used to such places.

* * *

[20] CW2 lx 200 f.
[21] In the possession of R. Walton, Esq., Slyne, who found it in his garden (1960).
[22] Large rough-out in Lancaster Museum.

STONE AXE FACTORY SITES IN THE CUMBRIAN FELLS
MAP No. 2

SCALE OF MILES

0 ½ 1 1½ 2

REFERENCE

CONTOURS –
1500'
2000'
2500'
3000'

FACTORY SITES (MAJOR) . . .
FACTORY SITES (OTHER) ●
FINDS . . . . . ○

KEY TO SITES ON SCAFELL PIKE

1. LINGMELL TRACK
2. MICKLEDORE – LEFT OF TRACK TO SUMMIT
3. MICKLEDORE – RIGHT OF TRACK TO SUMMIT
4. PENN
5. SCAFELL PIKE / BROAD CRAG GAP

Map drawn by W. G. STEVENS

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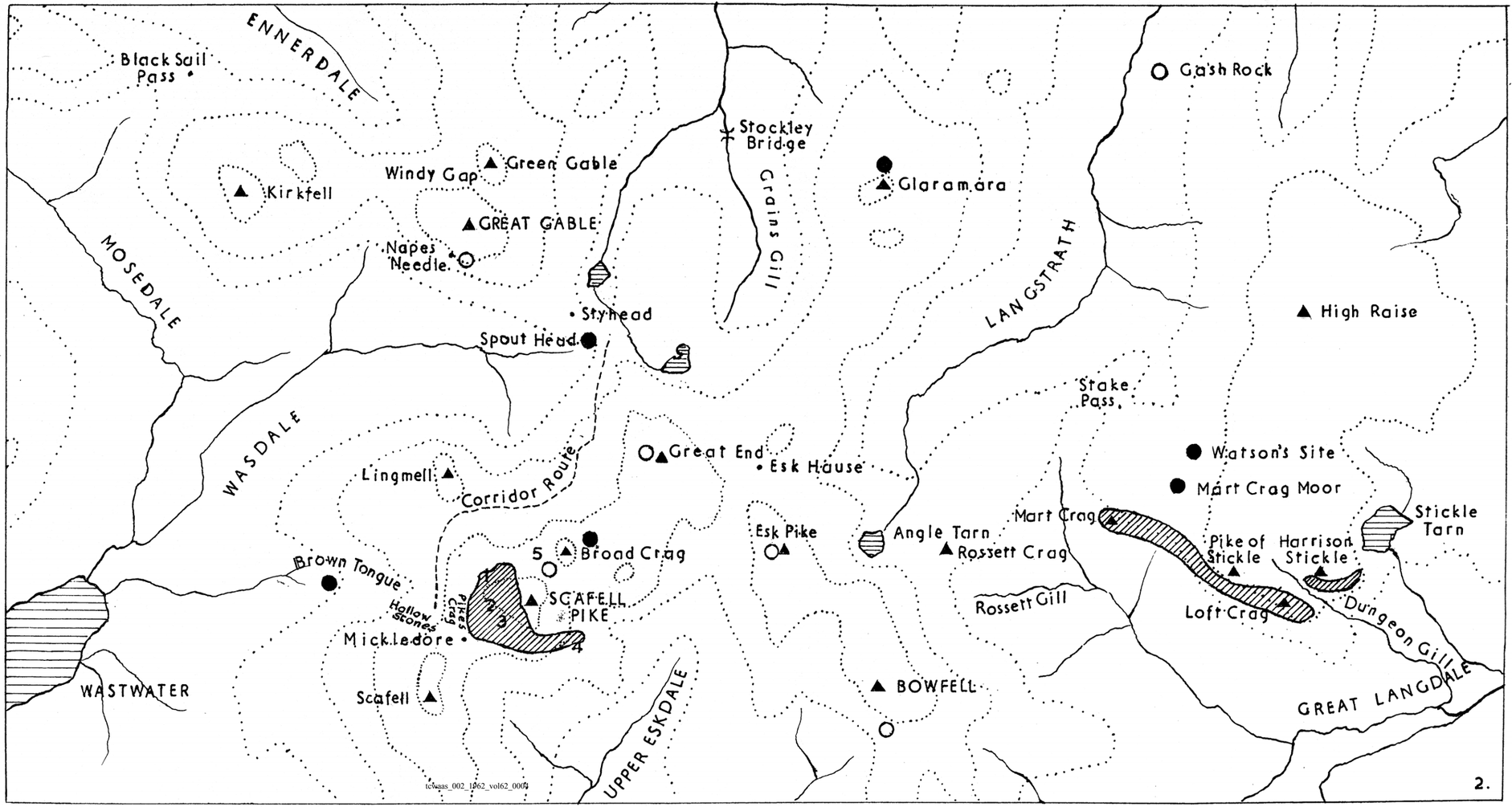


I should particularly like to thank Dr F. S. Wallis for examining so many specimens — without his aid it would not have been possible to forge a probable chain of evidence — and also Miss Clare Fell for all her help and guidance over the past ten years, and for her assistance in putting together this paper. I am also very grateful to Mr J. Davies, Mr T. A. Gomersall and Mr W. T. Green for their help in the way of information and allowing me to use some of their specimens for illustration. I am deeply indebted to Mr W. Fletcher for the drawings of his finds, to Mr W. M. Speight for his photographs and to Mr W. G. Stevens for his maps. I also thank my son, B. G. Plint, for his company on the fells and for his illustrations.

APPENDIX I: *Note on a polished stone axe from Low Mill, Beckermet, Cumberland.* By C. I. FELL, F.S.A.

I am indebted to Mr H. B. Stout for bringing to my notice this very fine polished stone axe (Fig. 2) and for giving me permission to publish it. He tells me that it was found in 1878/9 by one Tim O'Brian, while draining on Low Mill farm, at a point about a quarter of a mile north of the well-known Neolithic settlement at Ehenside Tarn[23] (approximate map-reference NY (35) 009079). Since then it has been used as a door-stop at the farm, until it was presented to the West Cumberland Group of this Society in 1960.

The axe is a very fine example, related to the type described by Miss L. F. Chitty, F.S.A., as the "Cumbrian Club" — a form characteristic of the area covered by our Society, as first noted by Sir John Evans.[24] Its present length is 11¾ in.; the cutting edge, which originally will have been convex in outline, is damaged and shows modern chipping with a lesser degree of patination than is evident on the shallower flake scars on both faces. The butt is squared and ground to an edge and the sides are facetted, the greatest width of these being 5/16 in. The greatest overall width, just below the centre of the implement, is 4 3/16 in., while that of the butt is approximately 2⅜ in. and that of the cutting edge 1⅞ in. Both surfaces show long, parallel

[23] *Archaeologia* xliv (1874) 273-292; for a recent assessment cf. Stuart Piggott, *The Neolithic Cultures of the British Isles* (1954) 295-299.
[24] Evans, *Ancient Stone Implements*, 1st ed. (1872), 106 f.

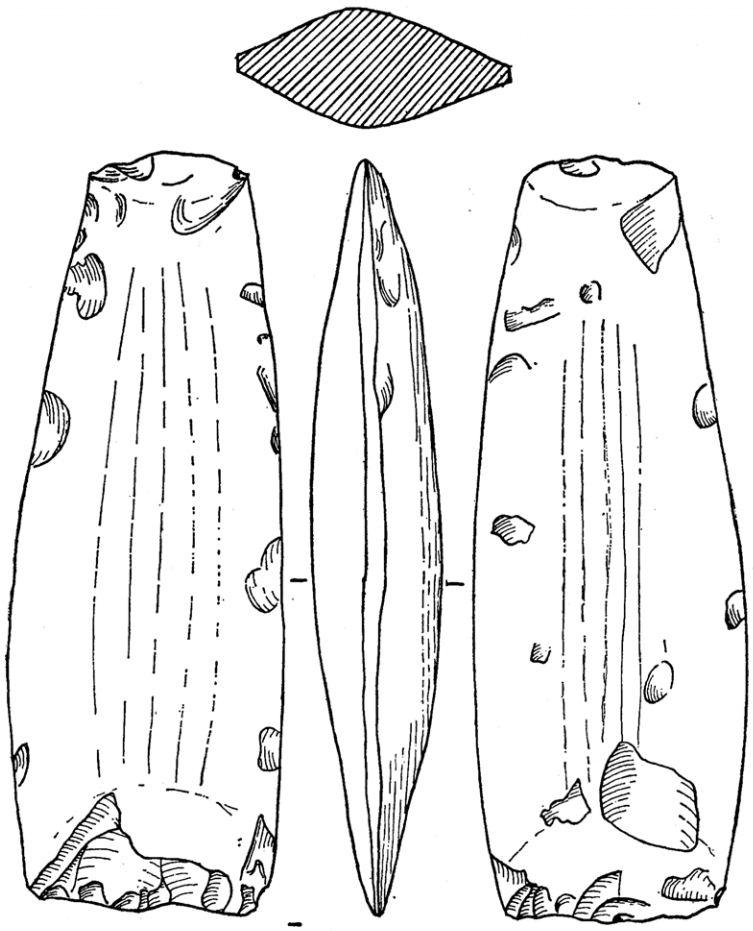


FIG. 9.—Polished stone axe from Low Mill, Beckermet, Cumberland. See Appendix i. (⅓ natural size.)

grinding marks. The fresh scars at the cutting edge show a blue-grey, fine grained rock, the patinated surfaces being of a lighter, brownish-grey colour.

The axe was petrologically examined through the courtesy of Dr F. S. Wallis, then at the City Museum, Bristol, who reported that the rock should be described as a "Tuff, near Group VI (Great Langdale)". This brings it into line with nos. 1112-1114 of the series examined by the Stone-axe Sub-Committee of the South-Western Group of Museums and Art Galleries, all of which came from Scafell Pike and are described above. There seems little doubt that the rock from which this axe was made originated in that area.

The discovery of widely-spread extensions of the Group VI (Great Langdale) and "near Group VI" areas of working, reported above, emphasizes the importance of the central hills of the Lake District as a source of raw material for the heavy implements of the Neolithic agriculturalists of Britain. The known distribution of its products has been considerably increased under the stimulus of the Council for British Archaeology, since the maps published in early reports on the Great Langdale axe-factory.[25] A recent notable association of Group VI axe fragments with Neolithic pottery and flints at Hurst Fen, near Mildenhall, Suffolk, has now been published.[26] Here the material is assigned by Professor J. G. D. Clark to the closing phase of the Middle Neolithic of that locality, and he points out that the stone-axe trade appears to have been active in Zone VIIc of Dr Godwin's pollen analytic zonation of post-glacial deposits in the south-eastern Fens. As Professor F. W. Shotton of the Department of Geology, Birmingham University, so aptly put it in a letter to me, "What a tremendously important site this (Group VI factory) must have been. It is not surprising that, taking the country as a whole, I am sure that Group VI is the most abundantly distributed axe material. It must have been a Neolithic triumph to get the agency for this factory."

APPENDIX II: *Reports on examination of specimens.* By Dr F. S. WALLIS and GEOLOGICAL SURVEY MUSEUM.

A: no. 832, Harrison Stickle, N.E. site. Butt end, usual characters of Group VI.
834, *ibidem*. Flake, usual characters of Group VI

[25] *PPS* xv (1949) 13 ff. and fig. 8; xvii, pt. 2 (1951) 99-158, fig. 3B and fig. 4A; CW2 1 (1951) 6 and fig. 6.
[26] *PPS* xxvi (1960) 202-245, particularly 226, 242 f. and Appendix II.

833, Harrison Stickle, S.E. site. Flake. Macro: a greenish, medium-grained tuff (new type). Micro: consists of rounded and partially re-dissolved crystals of orthoclase set in a fine-grained nearly isotropic base; some calcite is present, also epidote and many small spots of leucoxene.

924, *ibidem*. Butt end. Rhyolite (new type). Macro: a greyish-blue, fine-grained rock with white spots. Micro: consists of a micro-crystalline background full of chlorite and also porphyritic felspars.

B: 835, 836 Pike of Stickle. Flakes, usual characters of Group XI (It is difficult to pinpoint these sites, but one is above a very large boulder on the face of the crag, 1,750 ft. contour, and the other is immediately above the point where the trod leading from below the cave on South Screes debouches on to the face of the crag. R.G.P.).

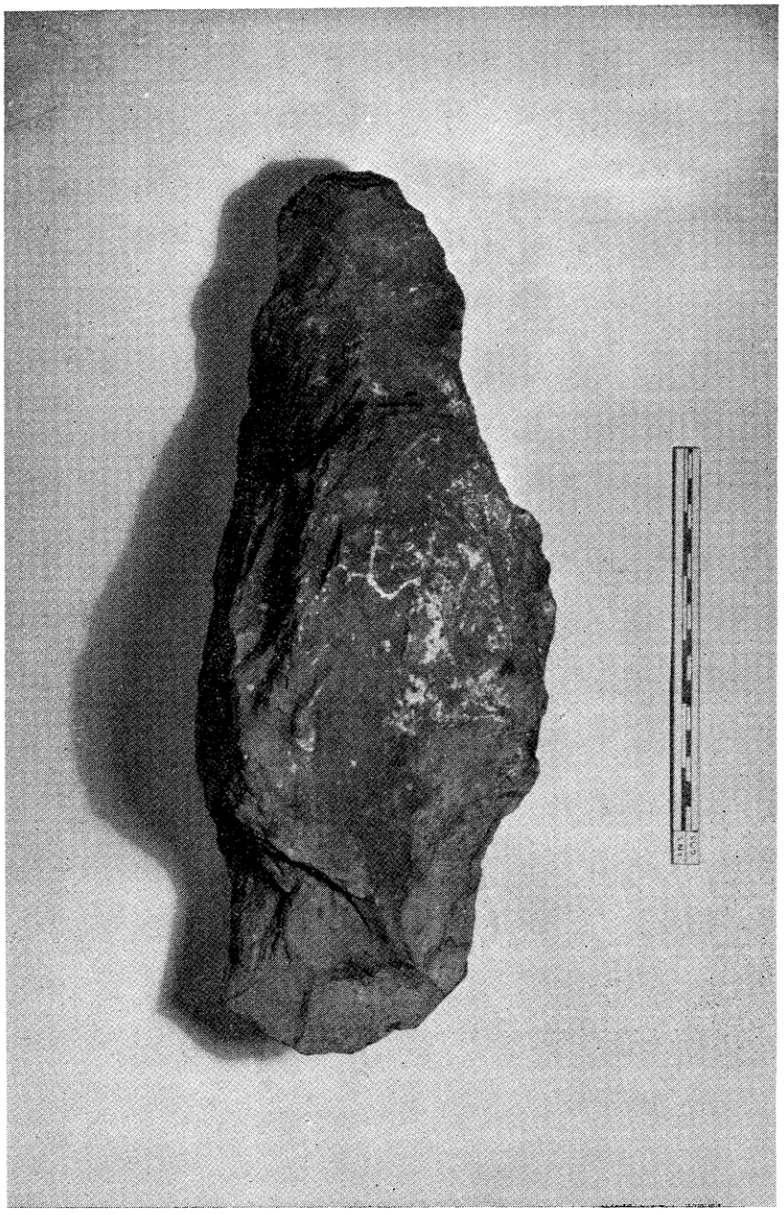
C: Letter from Geological Survey and Museum 11.7.1961. No. 1. Enq. 1895. Pike of Stickle. Part water worn pebble hammerstone. A fine-grained tuff containing tiny laths of plagioclase, aggregates of flakes of epidote and grains of magnetite in a very fine-grained matrix of microlites of felspar. The rock is similar to specimens in our collection from Pike of Stickle. No. 5. Harrison Stickle. Part of hammerstone or anvil. A granophyre similar to a specimen in our collection from Bowness Knott, Ennerdale.

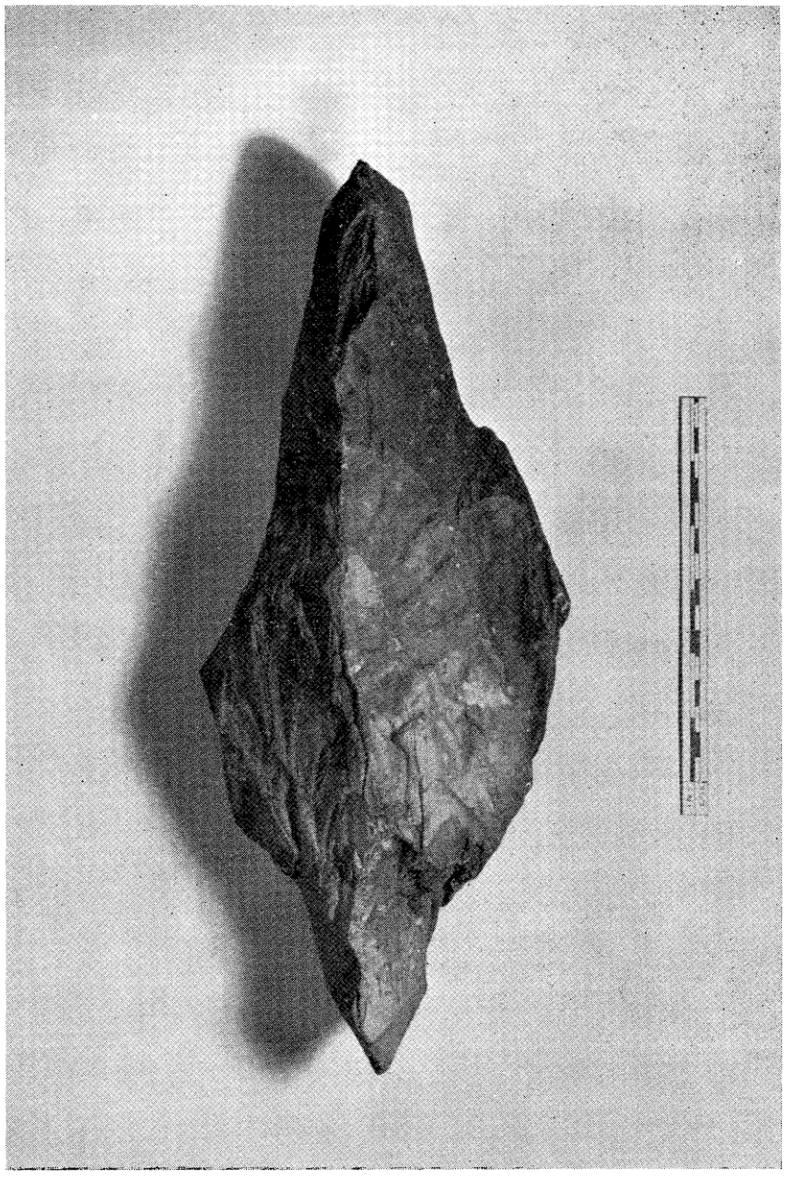
D: Letter from Dr Wallis (21.12.59). Birkness Comb. Slide no. 10: a coarse acid (andesitic) tuff.

E: 921, 922 Great Gable. Flakes, an acid tuff. Macro: a black flinty rock weathering white. Micro: a very fine-grained rock with isotropic matrix full of dark dusty iron ore and scattered small crystals of orthoclase.

F: Letter from Dr Wallis (21.12.59). Gash Rock. Slide no. 1: flake, "close to Group VI but not near enough to be included." Gash Rock, outcrop. Slide no. 2: tuff somewhat similar to nos. 1112-1114.

G: 907, 908 Scafell Pike. Flakes, epidotised tuff. Macro: a bluish-grey very fine-grained rock. Micro: consists of a fine-grained dark isotropic base with small clear grains of felspar; a little epidote is present; Group VI.





Pl. 4.—Two views of a piece of rock from the Harrison Stickle site showing the process of manufacture. The piece is 13″ long and 6″ thick, yet the lines of the axe can be clearly seen. The cutting edge, the butt and one side have been roughly formed but there is still a good deal to be removed from the cheeks. (In possession of J. de F. Somervell, of Crook, Westmorland).

Photos by W. M. Speight.

H: Letter from Dr Wallis (12.12.59). Spout Head. Flake. Slide no. 9: practically indistinguishable from Group VI.

I: Ditto (21.12.59). Scafell Pike/Lingmell track. Hammerstone. Slide no. 7: porphyritic acid lava (Dr F. Moseley has examined this slide and considers the rock to be local).

Letter from G.S. & M. (11.7.1961). No. 2. Enq. 1896. Scafell Pike. Water worn pebble hammerstone from Lingmell Site. An albite-porphyrite containing laths of albite altered to chlorite and epidote. Original pyroxene crystals have been completely altered to flakes of epidote and patches of sepentinous material and iron ore. These are set in a micro-crystalline matrix crowded with grains of chlorite, epidote and iron ore.

J: Letter from Dr Wallis (21.12.59). Broad Crag/Esk Hause track. Flake. Slide no. 11: tuff somewhat similar to 1112-1114.

K: Ditto (21.12.59).

1112: Scafell/Lingmell path. Broken rough-out. Collected by T. A. Gomersall (NY 212075). Fine-grained tuff, with isotropic background containing many small felspar fragments. Section is full of dark dust which gathers into spots and gives a curdled appearance. Tuff. Not Group VI but closely related to it.

1113: Scafell Pike. Rough-out. Collected by W. Fletcher.

1114: Scafell Pike. Flake. Collected by C. I. Fell.

1115: Great End. Probable rough-out. Collected by W. Fletcher. (Dr Wallis, in a letter of 4.3.60, notes that nos. 1112-1114 cannot be identified with Group VI and may be a new Group. R.G.P.)

L: Ditto (4.3.60). Brown Tongue. Flake. Slide no. 13: near, but not an exact match for Group VI.

M: Ditto (21.12.59). Mart Crag. Practically indistinguishable from Group VI.

N: Ditto (4.3.60). Esk Pike. Flake. Slide no. 12: same as no. 1112.

O: Ditto (-.5.61). Glaramara. "Rough-out (A) is near to Group VI and in fact is so near that it comes within the variation allowed. Flake (B) is exactly the same as the above rough-out."

P: Ditto (-.5.61). Scafell Pike. Rough-out from near summit cairn. "The rough-out cuts across the junction of two rocks and we have been able to obtain a section which shows both types of rock. The finer part is somewhat similar, but is *not* the same as Group VI; e.g., it does not contain the small needles which are usually present. The coarse or other part of the rock is very different from Group VI and is full of crystals of felspar and sugite."

Q: No. 1141 of the Stone-axe Sub-Committee, S.W. Group of Museums and Art Galleries and the C.B.A. Derwentwater. Rough-out. Usual characteristics of Group. VI.

R: Letter from G.S. & M. 11.7.1961. Glaramara. Part of hammerstone or anvil. A granophyre matching a specimen in our collection from Red Pike, Buttermere.