

ON SOME FLINT IMPLEMENTS FROM EGYPT AND DENMARK.

By F. C. J. SPURRELL.

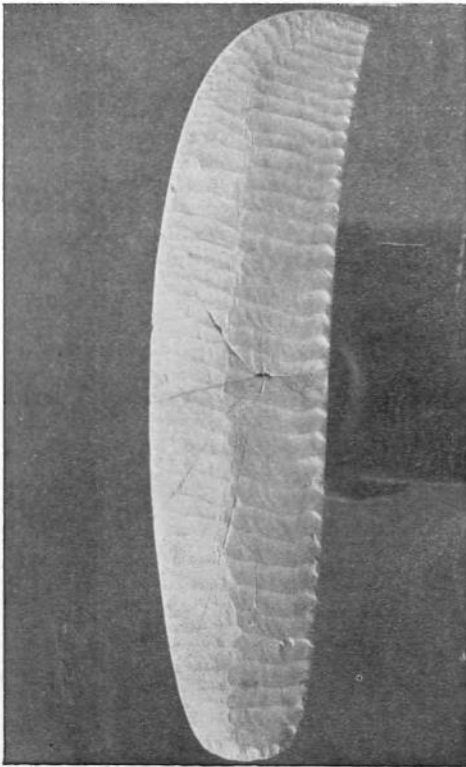
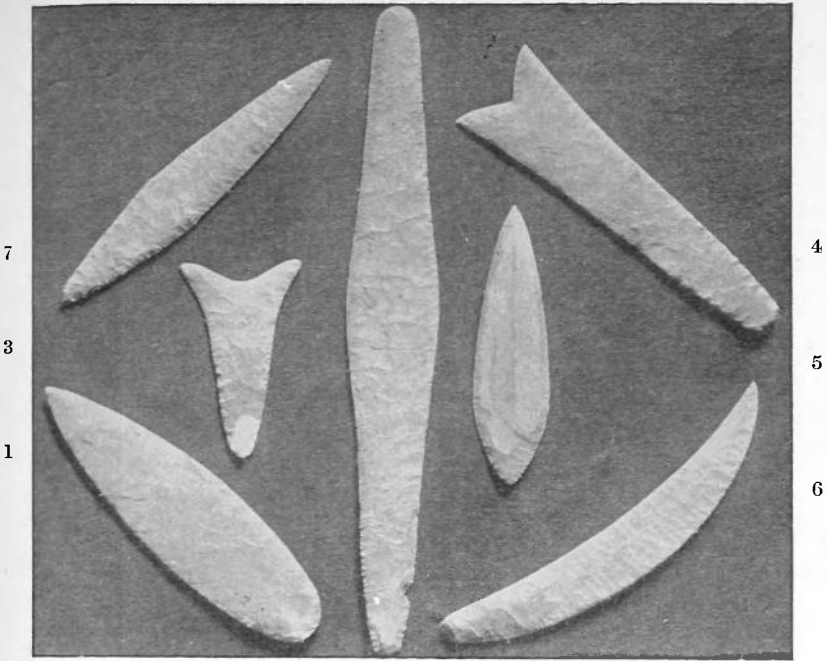
A large number of chipped flints are found over the surface in certain situations more abundantly than in others, though sporadically they occur in many parts of the Nile Valley. The specimens exhibited on this occasion were excavated by Prof. Petrie at Nagada in 1895. They are all made of local materials, as is shown by the crust still left on the stones. The majority are oval in shape, some symmetrical, others bean or kidney shaped and round, the length varying from a little over one to nearly eight inches. Few are pointed or show resemblance to the palæolithic hache.

The chipping is very uniform in kind. Some of the longer ovals are chipped at one end from side to side, making a sharp edge. Signs of use are seen on a very limited number, and when they occur appear to be disconnected with the intention of the maker. A variety diverges in some cases to a well-marked, broad end, making a triangle, with one corner for attachment to a handle; they are thin and flat. Along with these are hoe-blades, coarse chisels, rough knives, and a variety of forms closely resembling many of the ruder neoliths of this country. Thumb-flints, or slicking-knives, also occur, and hollow scrapers, with sickle teeth and long flakes notched along the sides, which might be saws or drags.

With them are also found polished basalt and hornstone celts, pecked into shape and formed into chisel-shaped objects, the edges very blunt, and the whole outline very stumpy. They are generally small. Some are of the form of the eared hatchet common at all times in Egypt, which was set sideways in a handle, the ears serving to bind it into a groove.

Arrow-heads were found—one with a well-made tang and triangular head, others shouldered or heart-shaped. The barbed forms are the commonest. The barbs (without the tang) bend inwards—they were probably very

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FLINT IMPLEMENTS FROM EGYPT.

loosely fastened on. A very long barbed one and a rough variety was found pointed at both ends.

Although those already mentioned appear to belong to a different style and mode of workmanship, there is nothing to show that they do not belong to the finer work about to be described except that the two are not found together. The first were found in layers of soil, mixed with ashes and signs of living waste. The finer ones were exclusively found in graves in cemeteries apart from, but near by, the settlements. Broken specimens of the finer sorts did not occur away from the graves, nor did the characteristic ovals occur in the graves; but inasmuch as the grave specimens were all new and specially prepared for burial, and were all made from stones quarried and worked far away, the distinct facies of the two varieties of work may be reconciled by supposing one to represent use, the other honour among the same people. It is not implied that these implements were constructed for ceremonial purposes; only that they were brand new, fit for work—such as they were commonly put to—and ready for the unknown journey of the newly dead.

Of the finer, or grave, implements there are many varieties. One sort of these may be shortly styled flakes, by which is meant that (although they are glorified, splendid examples of flaking, from their simplest to their most elaborate forms) the character of a crude flake as struck from the block is preserved, and they thus differ from those implements which have been so completely worked over as to retain little or nothing by which their first outline can be determined.

All fine flakes, on separation from the parent block, have a point and a butt and three or four sides. The three-angled form is the commonest, and when the middle rib on one side is placed as close to one edge as possible, a razor-shaped blade is formed. This, when the back of the blade is neatly chipped and tooled, and when the inevitable wind is corrected as much as possible, and an edge or fine nicking is given to the cutting side, is a perfect knife. It must be noticed, however, that the presence of curves and wind was detrimental, and in the case of these flakes both are occasionally wholly absent.

Some of these flakes are ground, on one or both sides,

and then finely fluted. The back is finely tooled in a complicated manner resembling the seam when two edges of leather are brought together, making a waved line.

The impulse which started the several fissures took its origin from a small point, at first going deep into the stone but subsequently, by a sudden change, running for a long distance just beneath the surface at a uniform level. The horizontal direction also changed suddenly. The tendency for the flake to ripple along at an even distance beneath the surface, though differing in different specimens of flint, is very regular, and was the result of art, and no peculiarity of the stone.

The finer and most regular kind of flaking, or fluting as it may be called, requires a smooth surface on which to employ it, and was first practised on the smooth surface of large flakes. Knives were therefore first carefully chipped to the desired outline, then they were ground, probably on some hard stone such as quartzite—or it may have been with sand—as thin as possible, with regard to the future force to be employed; then they were fluted on one side, the other being left smooth, probably because they would not bear further reduction in thickness. Sometimes fluting was tried on fine chipping without grinding previously, but never very successfully. And sometimes fluting was carried across a considerably curved surface with partial success. In most cases it is evident that the object the workman had in view was to flake quite across the blade, and if unsuccessful in that to make the junction of two flutings so accurate as to give the impression of but one. Mitreing was not desired. The evidence for grinding is found at the junction-line of fluting, where small patches are sometimes left occasionally. There are none in the best work.

It is difficult to understand that the delicate blades of knives and the fine bangles were chipped by blows delivered directly. A more precise blow might have been delivered indirectly by means of an intervening substance, such as a point of stone or metal, but even this would appear too clumsy. The smallness of the point of origin, and the apparent slowness and deliberation of the action, indicates rather that fluting and ring-making was the result of pressure.

The pressure might have been direct or by means of a lever, and there are signs of some torsion having been used, as though a long bone or metal bar with a slot in it were used.

The nearest modern work to which this may be compared is that employed to shape the edges of the thick glass plates called deck-lights, some very fine specimens of which were exhibited at the last Naval Exhibition. The general resemblance was curious.

The remaining forms of simple flakes call for no special remark.

The finest knives are thin and narrow, and as much as fifteen inches long. They have a central bulge, from which the edges recede to either extremity, which in these symmetrical forms is rounded.

One end is less carefully finished than the other, and was covered by the handle. The remainder of the blade is well worked, but is never ground or fluted. Except the tang, the edges are finely notched, the best examples being  $\cdot 03$  inch apart and about  $\cdot 01$  inch deep. It is very delicate, regular work, made after the edge had been brought to a true line.

The notching of these knives round the point shows that they were not intended for thrusting—indeed, the finish of this variety is all for show.

Some knives or spearheads are large and leaf-shaped. These are often ground and fluted. Another kind of knife is pointed and curved to form a thin crescent. Most of these are well flaked. One was found lightly ground and fluted. A kind of knife or spearhead formed for thrusting, having a sharp point, was sometimes ground and sometimes not, and rarely fluted. One of this shape was ground in facets, having a median line—a very metallic form. From the scimitar-formed knife, varieties show a gradual change at the tip, whose curve nearly approximates them to the next type.

The most admirable implements have a recurved tip. The finest flint was used for these, often clear and Chalcedonic, and on them the highest art was exercised. The form of these knives is commonly a straight blade, with the cutting edge recurved towards the handle, the blunt edge meeting it after turning to a right angle with the

blade. The knives are ground very thin on both sides, and then chipped with exactness, obliterating all signs of grinding, except when one side is left plainly ground.

Some implements are characterised as having the effective or business end much the wider. The smaller is often rounded and commonly rough, and was inserted in a handle or shaft. From that point the edges diverge until near the free end, when the widening increases, sometimes rapidly. The edges then curve back, either in segments of circles to the middle point, or from rounded corners to a slightly depressed centre; in all cases this termination deserves the name of fish-tailed. The business end is sometimes nearly a straight line. The largest of these spearheads have the greatest care lavished on them. They are sometimes ground and finely chipped, but not fluted, because apparently the shape made this too difficult. But, as if to compensate for it, some are smoothly polished intentionally, the polish going over the ridges into the hollows (not as in grinding, which only rasps the prominences). The section of some of these is the thinnest of the whole series. Except at the butt, the edges are worked to a cutting-line all round. In some it is merely a sharp line, in others it is carefully notched, coarsely or finely—the finest being the most regular of any known, very regular in depth and spacing—the notches are frequently  $\cdot 03$  inch apart and  $\cdot 01$  inch deep.

Some of these, from their size, were probably arrow-heads—others, perhaps, javelin-heads; but it is to be noted against the latter supposition that the largest and broadest are the most reduced in thickness; they are almost of papery thinness, a quality unsuited to a javelin or spear, where weight is desirable. They may have been arrow-heads specialised.

There are some examples of these beautiful flints in public and private collections—but they are not numerous—obtained from Thebes and other places through dealers, the origin of which was a mystery until Professor Petrie worked the cemetery of Nagada. Of these earlier examples Mr. Greville Chester in particular gathered some together, among which was a fine example (now in the possession of General Pitt Rivers) of the broad-bladed type, having the end recurved. It was mounted on a carved ivory handle

of true or dynastic Egyptian work. None of the Nagada specimens had any of the handles remaining, but one double-pointed arrow-head has the line marked completely up to which the woodwork once reached—(it had a cord wrapped round it with some leather, the association of which is not understood)—but the wood was wholly decayed; several others showed signs of some resinous cement at the rougher end. The wood had probably in every case been destroyed by ants.

Among the objects from Nagada were rings of flint. These are very fine and flimsy to look at. They were manufactured from the ring-shaped flints naturally occurring in the limestone and gravel of the country chipped into shape and then ground finely by means of emery, a mineral largely used then for forming hard stone vases and beads. They were probably armlets. General Pitt Rivers showed some in London many years ago; these were broader and unpolished, and there is one in the British Museum.

Some of the details of the implements made by the race described somewhat closely resemble the later neolithic work of Northern Europe.

But it will not be safe to conclude that, because in Egypt there are found implements belonging to various palæolithic and neolithic types such as are recognised in Europe, and apparently in a similar order of deposition, they were of synchronous manufacture, although the date assigned by Northern antiquaries to the later Stone Age of Denmark is, by a curious coincidence, the same as that assigned to similar work in Egypt by Professor Petrie, 3,000 B.C.

## II.—FLINT CHIPPING IN DENMARK.

It is a far cry from Egypt to Denmark, but it is well to take this opportunity to make a few remarks on a particular point in the manufacture of the fine stonework of the latter country.

Hitherto Denmark has held the pre-eminence in flint chipping. Worsaae<sup>1</sup> says that it is "quite unknown out

<sup>1</sup> *Danish Arts*, J. J. A. Worsaae, 1882, S.K.M. Handbooks.

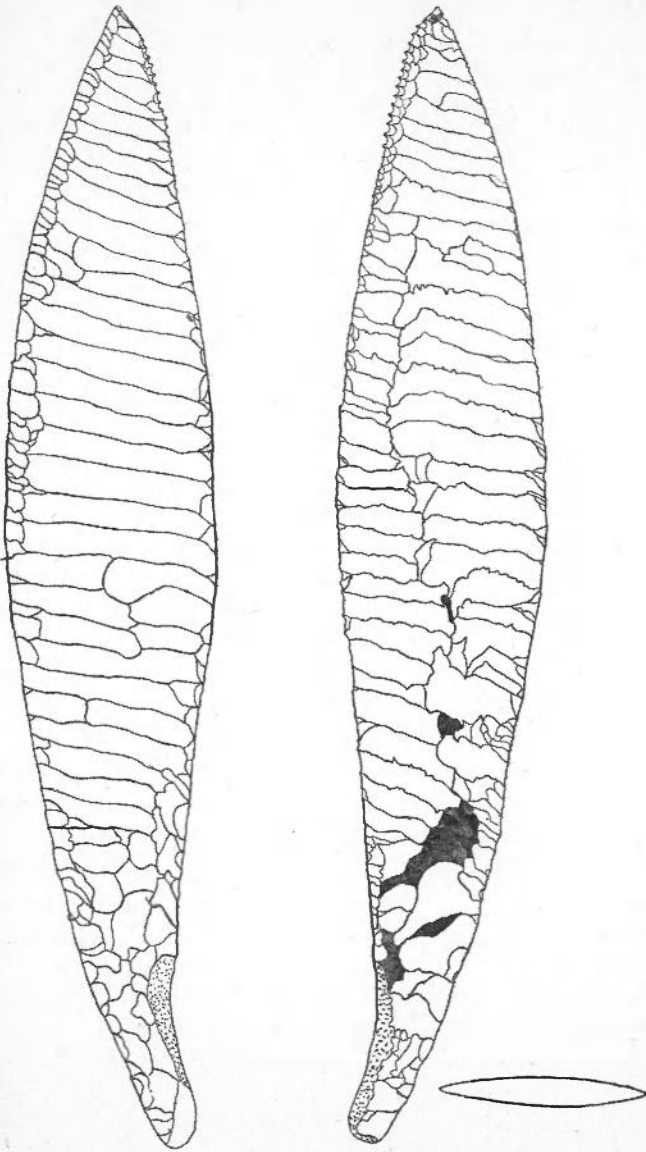
of Northern Europe," and his further opinion is accepted by everybody, viz., "It is remarkable that these flint implements have apparently never been attempted to be polished, as only in extremely rare cases are there a few slight traces that the polishing of the surfaces had ever been attempted. In this respect they form a great contrast to the large flint axes, which are apparently superfluously polished. It is possible that the workman feared to expose the thin, delicately chipped blade to the danger of breaking in grinding." I have never held this view that the traces of polish which he speaks of as rare were put on after the knife was finished as to chipping.

It was many years ago that, in examining the fine collection of Sir John Lubbock at High Elms, I came to the conclusion that the relics of polish on some blades was not the finishing-touch, as it was evident that some of the flaking was later than it.

As these objects, showing suitable signs for demonstration, are not common, it will be convenient to refer to some in the British Museum, to which easy access is so kindly given by Sir A. W. Franks. The specimens I refer to have usually the finest chipping on them; they have almost always very flat surfaces, such as blades without handles or the flatter part of daggers. The coarser forms rarely needed the refinement which the others received in their treatment.

The finest Danish flat knife-blades reach to 15 inches in length. But it does not appear by any signs that the longer blades were originally cleverly struck flakes. All appear by distinct marks to have come from blocks whose exterior mass has laboriously been knocked off piecemeal, so that only one knife was the result. There is never any trace of wind on them, although occasionally they may not lie quite flat. Besides, the structure of the flint is rarely good enough to permit of the separation of first-rate flakes as in the Egyptian stone. The general shaping of the blades was begun boldly, then shorter and shorter strokes were given at the edges as the curve became defined. Fine fluting could only be attempted after the surface had been reduced to great smoothness by careful and niggling work. When





12. KNIFE FROM DENMARK.

the surface was to be fluted it was ground—from the appearance it is clear that sand was used—and the blade was made as flat and smooth as possible; then flaking was resumed, and very fine work was carried over both sides of the blade from both edges. These flutings met in a line somewhere on the side, forming an irregular raphe. In happy cases the flutings pass quite across the blade, a distance of  $2\frac{1}{4}$  inches or more, but usually the flake from one side was met by another from the opposite side. The intention was clearly to make the two flutings meet so that they should have the appearance of one. When they do not do so the irregularity is quickly corrected, and no determined attempt to “mitre” or alternate between each other is found. After fluting no polish was intentionally given. The polish which is sometimes seen is that of accidental use, or the action of the earth in which the instrument lay. A want of flatness—which was the best the Scandinavian artists were able to accomplish—in the blades caused them to succeed in the very difficult operation of making the even parallel fluting to pass across the great curvature at an even depth without detriment to its regularity, in a manner which surpasses the Egyptian in this particular. But the direction is never straight across, it is markedly diagonal, and in this is behind the Egyptian work.

When the knife was completed the edges were smoothed and made up to an even cutting-line, and lastly, in some of the finest examples, the edges were carefully notched, not at haphazard, but at regular distances apart, with the flake completing the notch on the other side exactly opposite.

Wear, of course, obliterated this finish, which was never so delicate as the Egyptian, but enough remains on some specimens in our collections to show it.

The object the operator had in view was that of ornament, and his care was to obliterate all trace of the grinding stage. In the largest knives this is often successful. In the British Museum (Table-case G) is a knife, a sketch of which is given (No. 12, Pl. VI). It is 12 inches long, by  $2\frac{1}{4}$  inches wide. The flutings are mapped out in order to show the raphe or junction-line where they meet on one side. Near the haft small portions

of the blade, with the ground part visible, are shown black, and one small patch near the tip. The latter is unusual, the imperfections being mostly seen at the other end. On the other side of the blade, so successful was the artist that his flutings pass quite across and obliterate all faults. (Fig. 12.)

A large knife lying next to it is 14 inches long, and shows no tell-tale patches in its perfect sides. Both these knives show notching, the larger most.

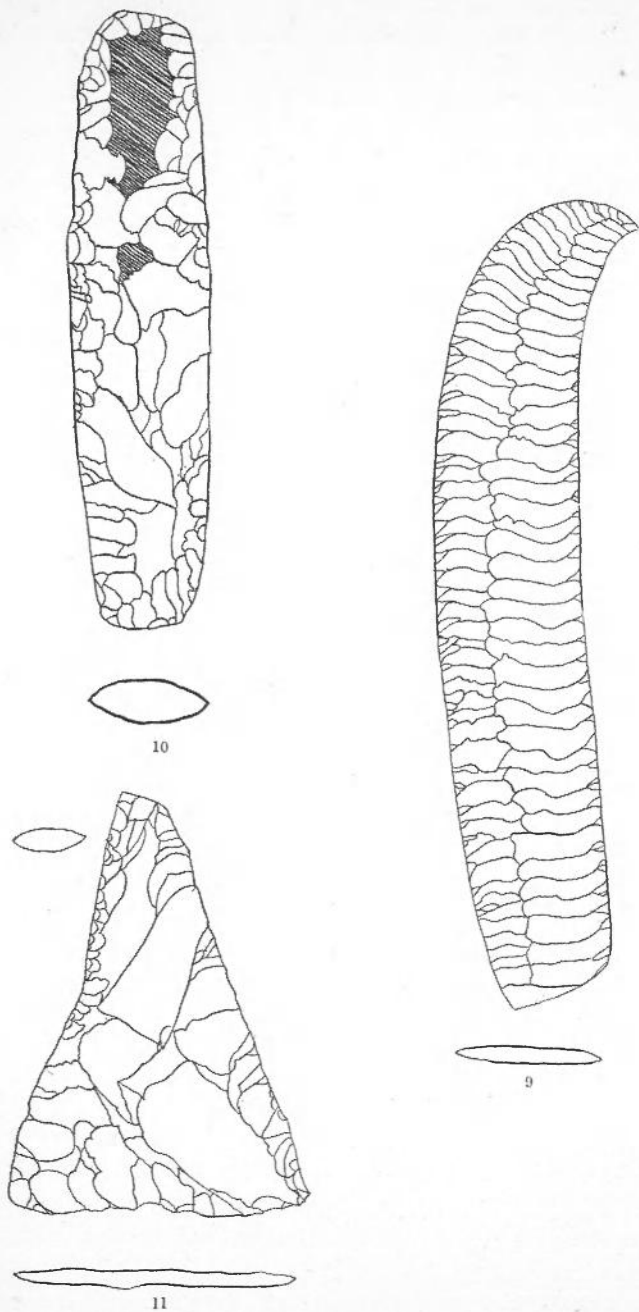
For the sake of reference, as there are no plates in which this particular is shown, there are in the British Museum some blades in which patches of the ground surface may be found, viz., a dagger—"Denmark 279," "Denmark 303," "Denmark 322;" 112 Knife. In table G, "Denmark 225c," and "Denmark 286." Besides the parallel fluting, there are the very fine zig-zag or puckered lines on some knives, chiefly the handles of daggers, in which situation they closely recall the stitched edges when two pieces of leather are drawn together, and of which they appear to be an imitation. These lines are so well known as to require no illustration. They appear to differ in no particular from those found in Egyptian work except the situation in which they are found and their greater regularity.

The resemblance in details of chipping between Egypt and Denmark is curious, but, as far as is known at present, is confined to that, the shapes of the implements being very different.<sup>1</sup>

It seems very unlikely that a method of working should have travelled from the East across the plains of Europe in one direction, and into the valley of the Nile in another, without the similar shapes of the implements having travelled along with it. Besides, there are no specimens from lands surrounding Denmark which show the route

<sup>1</sup> Various arrow-heads with flat points are figured in books on the English and Continental Stone Age. Most of these are so simple, small, and inconspicuous as to have escaped notice. Some of those more elaborated have doubtless been included in the irregular forms commonly jumbled together as "scrapers" and "thumb flints," their use wholly unsuspected. Some of more distinctive shape are figured in A. P. Madsen's

*Antiquites prehistoriques de Danemark*, on pl. 22, Nos. 6, 9, 10. There is, however, in the British Museum an implement closely resembling the Egyptian broad arrow-heads, whose business edge, however, is little curved. It is labelled "Cumberland," and evidently lay in Peat. The section given in the sketch (No. 11, Pl. V) is taken  $\frac{3}{4}$  inch from the edge. Its total length is 4.4 inches; breadth 3.1 inches. Query—was this Danish?



9. IMPLEMENT FROM EGYPT.  
10. PART OF KNIFE FROM DENMARK.  
11. ARROW POINT FROM CUMBERLAND.

taken, although diligent collection has been for many years in practice.

On the whole there appears to be good evidence to show that the mere endeavour to excel in laborious dexterity of manipulation produced similar results in a material of limited capacity for shaping in lands disconnected by thousands of miles.

#### PLATE IV.

1. A fine implement in rose-tinted, opaque flint, finely indented all round, 8 teeth to 1 cm.
2. This implement is  $14\frac{1}{2}$  inches long, by  $2\frac{1}{10}$  inches at the widest part, finely indented 10 to 1 cm. all round, except near the handle.
3. Fish-tail arrow-head, indented 12 to 1 cm.
4. Ground then re-chipped. It is wrought to a fine cutting-edge, but not indented,  $8\frac{1}{2}$  inches long.
5. Leaf-shaped lance, head ground, with a middle ridge on each side, edges indented except the lower quarter.
6. Sabre-shaped, 9 inches long, convex part indented, concave edge slightly bevelled and smooth.
7. Dagger-blade, two-thirds toothed, the rest evidently inserted in a handle once.
8. This knife is a good example of the parallel fluting. It was obtained at Abydos. It is plain ground on one side.

#### PLATE V.

9. This drawing represents the most perfect implement of the whole series found. It was ground and then fluted on both sides. The ground surface is obliterated except near the haft-end. The convex edge was toothed, the back is bevelled smooth, the depth of the flutings for  $\frac{3}{4}$  inch are  $\frac{1}{20}$  to  $\frac{1}{30}$  of an inch. The material is a translucent, Chalcedonic yellow flint. There is evidence of much gentle usage on this, for it is much smoothed and the tothing nearly obliterated. The flaking of the original apparently meets in a middle line on each side; a magnifying glass was needed to map out the exact outline of the chips, so thin were they at the ends.  
Its length is 8.6 inch, breadth 1.5 inch.
10. Part of knife from Denmark in British Museum.
11. Arrow-point from Cumberland (England) in British Museum.

#### PLATE VI.

12. Knife from Denmark in British Museum.