Notes on
Flint Implements
found at Little Ferry

W. Stevenson

No. 9

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From the Saturday previous to that on which the "Sutherland Field Club" made its first excursion to the Little Ferry in the months of April for the purpose of searching for Flint Implements found there, I have more or less every week since devoted part of my leisure hours to the same object: and I am happy to say that I have been successful far above my expectations, having in my collection upwards of 200 scrapers, about 40 tools of various kinds - 40 complete arrow-heads and 60 incomplete. On most of the occasions I was ~~by~~ accompanied by my son, who, though he did not find the greatest number, was successful in picking up the most perfect of the arrow-heads. On every occasion but one we were successful in obtaining arrow heads. The greatest number collected at ~~one time~~ was 13. On every occasion we also picked up scrapers, the greatest number found at one time being about 50.

Seeing then, that we have been so successful in collecting so many implements, I thought it might not be out of place to make them the subject of several remarks; and craving your indulgence for a patient hearing in such a dry and stony subject, I shall, in the first place presume, that you are all aware of the fact, that Archaeologists have divided the primitive antiquities of a country into three periods, viz:- The "Age of Stone"

the "Age of Bronze", and the "Iron Age" The periods embraced under each of these are not to be regarded as quite distinct and separate, the one from the other, but as gradually intermingling with and merging into each other. There must have been a time however, in the remote ages of Antiquity, when little or nothing was known of metals: when the people, few in number, and savage in their habits, and clothing themselves chiefly with the skins of animals, must have used weapons and implements of stone, wood, bone, horn, or some such easily wrought material. These implements would still be used after Bronze and even Iron was discovered; but would most quickly cease to be used in those districts of a country where these metals were discovered, less quickly in the more remote and inaccessible parts of the same country, and still less quickly in those countries far removed from the seat of the discovery. Even at the present day flint implements and weapons are in use among uncivilized tribes in Asia, africa, America, & the Islands of the Pacific Ocean.

Besides those found on the surface, which are generally highly finished, there is another class which was discovered in different parts of France and other countries of Europe about 1847 and in England from fifty to a hundred years earlier. These are in general larger, ruder, and less varied in shape than the former; and from the fact that they are chiefly found in caves beneath layers of Stalagmite, and in "River Drifts", a much earlier period of time is embraced in their manufacture. The names, Neolithic and Paleolithic, have been given by Archaeologists to

these different kinds. Those found at the Little Ferry belong to the Neolithic Period.

Regarding the manner in which these implements were made, we have, of course, no records; but judging from the method in which savages of the present day fabricate their tools, we may safely conclude that those of prehistoric times would use methods somewhat similar.

In order to understand the methods probably used, it may not be out of place to describe the process in which gun-flints are made at the present day. The tools required in the process are few and simple:- 1. A square faced blocking or quartering hammer, from 1 to 2 lbs. in weight, made of iron or iron faced with steel. 2. A well hardened steel flaking hammer, bluntly pointed at each end, and about a pound in weight. 3. A light Oval hammer: 4. A square edged trimming or knapping hammer, either in the form of a disc, or oblong and flat at the end, and made of steel not hardened: 5. A chisel about 2 inches wide, not sharp, but flat at either end, and set vertically in a block of wood which forms a bench for the workman.

The method is as follows:- A block of flint is broken by the quartering hammer in such a manner as to detach masses whose surfaces are nearly as possible plane and even. One of these pieces is then held in the left hand, so that its edge rests on a leathern pad tied on the thigh of the seated workman - the surface to be struck inclining at an angle of about 45°. Taking the flaking hammer he detaches a splinter, which if the

Flint be good, may be 3 or 4 in. long. Another splinter is next detached by a blow given at about 1 in. distant from where the first blow was given; and then other blows are given until the block begins to assume a more or less regular polygonal outline. The first splinters are usually thrown away as useless.

The second and succeeding splinters are those used for gun flints. To obtain these, a blow is given by the same hammer midway between two of the projecting angles of the polygon, and nearly in a line with the blow dislodging the previous row of flakes. Each flake is taken in the left hand, and by means of the knapping hammer and the chisel fixed in the bench is cut into lengths of the width required for a gun-flint. It is then placed over the chisel at the spot where it is to be cut; and if the workman be expert, he will cut it at one blow. The finished gun flint is formed by chipping off the sharp edge at the butt end, and slightly rounding it by means of the same tools.

The ancient flint-workers had no iron tools to work with, but it is found that flakes nearly similar to those formed as described above, can be obtained from the flint blocks by means of the blows of a rounded pebble judiciously administered. The chief difficulty is in making the blow fall in the proper place, and applying such a force as will dislodge the flake without shattering it. This can be done by holding the hammer simply in the hand. The process which they adopted must have been somewhat analogous to that in which the gun-flints are made. Having struck off a flake by means of a rounded stone, the ancient flint worker may have placed

it on a smooth block of stone, with its flat face upwards, and by a succession of blows, applied at a slight distance along the edge of the flake, chipped it into the desired form. The upper face of the flake would not be injured, and there would be no difficulty in forming the circular edge of the "Scraper" the instrument which I have supposed he was making. This is one of the most common, and seemingly the simplest formed instrument found.

In the case of arrow-heads &c, another process must have been adopted. Among the Esquimaux the instrument employed usually consists of a handle formed of fossil ivory, curved at one end for the purpose of being firmly held, and having at the other end a slit in which is placed a slip of the point of reindeer's horn. The following models will better explain these "arrow flakers" as they may be termed. Sometimes they consist of a piece of horn mounted in a block of wood.

The bench on which the arrow heads are made is said to consist of a log of wood, in which a spoon-shaped cavity is cut: over this the flake of chert is placed, & then, by placing the arrow flaker gently along the margin vertically first on one side & then on the other, alternate fragments are splintered off, until the object thus properly outlined presents the spear or arrow head form, with two cutting serrated edges. The flake from which the arrow head is to be made is sometimes fixed by means of a cord in a split piece of wood so as to hold it firmly, & the large surface flaking is produced either by direct blows of the hammer, or by means of a punch of reindeer, and afterwards finished by the arrow-flaker. The delicate fluting, like

ripple marks, seen on several arrow and lance heads across their surface may have been produced by the use of a pointed tooth of some animal as a punch.

As I have already remarked, one of the simplest forms into which flakes are capable of being easily & readily converted, has received the name of a "Scraper", from its similarity in character to a stone implement in use among the Esquimaux for scraping skins and other purposes. The French call it a "grattoir". A typical scraper may be defined as a broad flake the point of which has been chipped to a semicircular bevelled edge round the margin of the inner face. Among the Esquimaux they are, as a rule, mounted either in a handle of fossil ivory or of wood; & from the form of the handle they would seem to be used for being pushed forward on a flat surface. In whatever manner they may have been used the term scraper seems equally well adapted for them: & there seems no reason why the same term should not be applied to those used by the primitive inhabitants, since their edges indicate, by their being worn away, that they have been used as scrapers.

Scrapers are classified and described (1) from the character of the flakes from which they have been made & (2) from the outline of the portion of the margin which has been chipped into form, and the general contour of the implement. From their outline the following terms are used (1) horse-shoe shape (2) Kite Shape (3) discoidal or nearly circular: (4) duck's bill: (5) Oyster shell: (6) Side scrapers, or such as are broader than they are long: (7) double ended scrapers from their being chipped into the scraper form at both ends: (8) circular scrapers

(9) Spoon shaped from their having a sort of handle: (10) tanged Scrapers, or those whose butt has been chipped to a chisel edge at right angles to the flat face.

To give a description of each which I here exhibit would be tedious: I shall therefore direct your attention to a few of them only. Card I. Those on this card are all of the horse shoe shape. Nos. 1 to 11 are all formed from outside flakes. Several on the Card are formed partly of the outside flake or rather show part of the outside crust. On the left hand corner of the outer side of No. 1. there is a circular mark: the same is observable on the right hand corner of No. 10 where the mark is more hollow: at the butt end of No. 12 on the flat face: at the butt end of No. 13 on the outer side there is a similar mark: and On Nos. ~~72 & 118~~ On No 1. card 2 & 45 card 3 there is a bulb. The same marks are observable on a number of other specimens ~~on the other cards~~, but more distinctly on the flakes which I collected ~~chiefly~~ specially on account of these marks to which I wish to direct your attention. If a large piece of flint be struck by a spherical ended hammer at right angles, only a small part of its surface is struck. A very small circle is formed, & the part struck is driven inwards into the body of the flint, flint being slightly elastic. A circular fissure is thus produced between the part of the flint which is condensed for the moment by the blow, and the part left untouched. Each particle in the small circle impinged by the hammer rests on other particles; and the circular fissure, as it descends into the body of the flint, enlarges in diameter, so that the piece of flint it includes becomes of a conical form, the small circle struck by the hammer forming the apex.

If the blow be given near the edge, a somewhat similar effect will result, but the cone will be imperfect, as a splinter of flint will be struck off: and whenever a splinter is struck off, there will be a bulb of projection, of a more or less conical form, at the end where the blow was struck, and a corresponding hollow in the block from which it is split off. This projection is called the "bulb of percussion." On nos. ~~71 + 118~~ Card 2 + No. 45 Card 3 you see the bulbs very distinctly, and on the other specimens you as clearly observe the hollows. On No. 119. Card 3 there is a complete circular hollow. This, I think, may have resulted from natural causes: for, on ~~observing~~ examining it, you will perceive that the surface of the flake has a different appearance from that within the hollow, denoting ~~larger~~ longer exposure to the air. On the right hand side of the upper surface of the scraper, the place where the blow was given is observable - the bulb of percussion is also seen. The hollow occurs on the under side of the scraper & opposite the end on which the blow was given. The circular hollow tapers to an small apex, where the material is different from the body of the flint, and here, I think, must have been the cause of the disturbance.

I must however pass on to Card II.

Those from No. 1. to 40 are still of the horse-shoe shape, but all formed from ridged flakes. Those of this form are often neatly chipped along both sides as well as at the end. No. 1 is of this nature, but curiously enough the end is not trimmed at all. From its shape you will observe that this is not necessary. No. 3 is another example but it is chipped at the end as well.

No. 26 is chipped along the left side as well as at the end.

The second last row on this card forms another class of Scraper viz. the "Kite-shaped". No. 2 is a good specimen of this class. The trimmed end is almost semicircular, and then it tapers away to a point at the butt end. Occasionally those of this class are chipped on both faces at the pointed base, so as to make them closely resemble arrow heads. No. 5 is a good example of this. The last row shows specimens of "Duck bill Scrapers" ~~Nos~~ from their resemblance to the bill of a duck. Nos. 1 & 5 may be regarded as of this form. No. 6 may be set down as Spoon shaped inasmuch as there is a sort of handle with a notch on each side to prevent it from going further into the wood. The handle, however, is usually trimmed ~~into~~ for such a purpose, and as this does not show any chipping it may not be styled Spoon shape but simply long horse shoe shape. Nos. 7. 8. & 9 are double Scrapers, that is, they are trimmed into form at both ends. Those of this class are not common throughout Britain. No. 7 is a good specimen. Indeed it seems to have been used for scraping all round its edge as there are marks of its being worn away. However the point and the butt end have been mainly chipped. The other 2 have their right edge trimmed as well as the two ends.

Card III. When the chipping to an edge is carried beyond a semicircle the scrapers are termed "discoidal". They are generally made from broad short flakes. Nos. 4 3 & 10 may be classed under this form among which there are probably a few circular ones. When the scraper is broader than it is long it has been

termed a "side scraper". Nos. 1 to 42 may be regarded as of this class. These last two forms are as a whole smaller than the former classes. No. 41 may be termed an "oyster shell" scraper, as it presents no very definite shape.

Arrow Heads. - I come now to arrow heads. These were doubtless used, the larger ones for warlike purposes, the smaller, in hunting. The forms most commonly found in Britain may be classed under 4 heads:- the leaf-shaped - the lozenge-shaped - the tanged or stemmed or barbed - and the triangular. I have obtained specimens of all these kinds with the exception of the triangular form, unless no 20, as seen in the collection of the leaf-shaped kind, may be regarded as a rude & small specimen of this class. It is difficult to say whether these various forms were developed in this order. Some writers on the subject hold this view while others take a different one; but I think there is no doubt but that all the forms existed at one and the same time, and that their form depended on the character of the flake which was to be made into an arrow head. I have here half a dozen unfinished flakes which may show this very clearly. You will see at a glance that one of them by being merely chipped at the edges would make a good specimen of the lozenge shape, while the others would make as good examples of the leaf shape.

I have in all 40 complete arrow heads and 60 incomplete. Of the former 25 are leaf shaped & 15 lozenge shaped. Of the leaf shaped, nos. 10 and 15 may be regarded as good specimens, though differing from each other, no. 10 being shorter and broader

than no. 15 and terminating in a slight point at the rounded end. Nos. 1 + 7 are of broader proportions, and a side of the former shows a flat surface, (common to this form) while the latter shows on one of its faces part of the untrimmed flake. Nos. 2 + 6 show this defect also. No. 3 (my first find) is flat on each side, + one of them consists of the original flake trimmed at the edge: it and no. 4 are heart shaped, the latter being slightly curved lengthwise and become white by exposure. No. 8 is lanceolate in form and roughly dressed. No. 9 is rather unsymmetrical in form, one edge being almost straight, + having one of its faces trimmed only on this edge. No. 12 is a beautiful arrow, though it is hard to say whether it should be classed among the leaf or lozenge shaped. Its outline is almost angular as is that of nos. 14 + 32 the latter of which is the narrowest in my collection. It is rather more than 3/4 in. long + at its widest part is only 3/8 in. I must not leave this class without noticing no. 16 which puts me in mind of the cranium and bill of a bird. It is dressed on both faces, but left untrimmed at the end opposite the point. Here it shows the original face of the flake from which it was formed, and is nearly 3/8 in. thick. It is nearly 1 3/4 in. long 3/4 in at its broadest part, and from the point which is very sharp it gradually widens to 3/8 in. at 1/2 in. from the point, where it suddenly assumes a more circular form. It was formed by my son, as was also no. 15 of the lozenge shaped collection. This is undoubtedly the finest in my collection. It is of yellowish flint, almost transparent - is 1 1/8 in. long, nearly 3/4 in. broad + is rather more than 1/6 in. thick in its thickest part. It weighs 10 grains.

This I find to be a "Borer"

The delicate fluting, like ripple marks, is well seen on both faces. No. 1 is almost equilateral, 7 & 8 are also good specimens of the lozenge shape.

Imperfect Arrows. - I now turn to the collection of imperfect arrow ~~h~~ heads. These are of all the varieties, although the leaf shape predominates. Conspicuous among them is No. 33 also found by my son. It is of mottled flint - is 1 3/4 in. long; but the point is broken off, so that when entire it would have measured fully 2 in. in length - is nearly 7/8 in. broad in its widest part, and about 1/4 in. in the thickest part. It is curved longitudinally, and the greater part of its concave surface is untrimmed except at the edges, while its convex surface is chipped nearly all over. To go into the details of each would take up too much time. I shall therefore conclude this part of my subject by directing your attention to the rude outline which I have made of each, and you will thus see that many of them, when complete, would have been of a beautiful form, while others would have been the reverse. No. 47 is the only specimen of a barbed one which I have as yet found.

Tools. - I come last of all to a collection of specimens exhibited on Card VI. whose uses I am at a loss to describe, but which have evidently been used as tools of one kind or other. The first two rows consist of flakes which have been trimmed into form, those in the 1st. row on both edges, those in the 2nd. on one edge only. In the 1st. row you will further observe that it is only the convex face that is trimmed; & while in some

of these the edges only are trimmed, in others the whole surface is so
It is probable that these flakes were used as cutting, scraping, &
piercing tools. I think there is no doubt but that No. 2. from its
delicate trimming, & finely serrated edges has been used as a saw.
Another form very thick in proportion to its ~~length~~ breadth is
seen in No. 3. It is formed of a ridged flake of yellow flint, but the sharp-
ness of the ridge has been removed to a great extent by chipping
which is made over all its slightly convex surface. The butt end
and the point have been reduced to a thin edge. The next in
order are also formed from ridged flakes, but in them the chipping is
confined chiefly to the edges. Nos. 10 & 11 are untrimmed flakes, but
from their sharpness it would have been superfluous to have
trimmed them further. No. 11. I think, shows a very delicate trimming at
its point. These may have been used for cutting. No. 12 is also
untrimmed except at the point, where it is trimmed on the under face
so that it has been reduced to a kind of chisel point for which,
perhaps, it may have been used. Those in the 2nd. row consist
of flakes trimmed only on one edge. Some of them from their
serrated edge may have been used as saws, & others probably
as scrapers. No. 22 is a rather peculiar specimen. It is formed
from a narrow semicircular flake, is roughly serrated, and has
on one of its facets, a small straight mark, as if made by a
fine cutting instrument. The next row, Nos. 26 to 32 exhibit
larger specimens, all used, I think, for hand saws, for which they
are well adapted, with the exception of 28 which has perhaps
been used as a scraper or hatchet. Its under face is smooth, and

its upper has been trimmed into form, and shows signs of having been much used, as the chipping is considerably worn away.
No. 33. if anything at all, seems to have been used as a hatchet. So also perhaps No. 34. Nos. 37 + 38 have a striking resemblance to each other. They are both of the same length and breadth. No. being more twisted has its left edge trimmed into form. I think there is no doubt of their having been mounted as adzes. The last I shall notice is No. 50. It is in the form of an ellipse: its greater diameter being fully 1 3/4 in. its minor 1 1/4 in. It is chipped all round on both faces, and towards the point there is a notch on each side as if for the purpose of preventing it from going further into the wood if mounted. Probably it has served the double purpose of scraping & cutting.

Simply Scrapers.

Material. - Regarding the material of which these various implements are made I am ignorant of the exact name. They are, I think, chiefly made of Flint and Chert. Those that have a chalky appearance are undoubtedly of flint which has become white from exposure. There are 3 or 4 scrapers of bluish gray colour which I think is ~~clay slate~~ a variety of chert.

Places where found. I could not describe in words or the exact position where we found these implements; but the accompanying sketch which I enlarged to 5 to the mile from a small one of 1 in. to the mile, whi

our worthy President kindly supplied me. with a card which you see is very rough and rude, will, however, help to illustrate the position which a mere verbal description cannot so well accomplish. I have laid one or two of the places on the wrong position, so I purpose to make a larger & more correct drawing of this very interesting spot. In the small hollow close to the Carrier's farm was found the finest arrow-head. We have found none there since. In the hollow marked with 3 arrows, between which & the large hollow should be placed Loch Uneasbet which you see is not) we found the greatest number of perfect arrow-heads, both in the middle as well as on the sides of the ridges enclosing the hollow. In the east end of this hollow is a hummock with a great many flat stones indicating that a house must have been there at one time. To the east of this we found in all only 3 or 4 arrow heads & no scrapers: to the south about the same number: but on the sides of the ridge to the north and all the hollow westwards we found a great many of both implements. On our first visit to the large hollow we were so unsuccessful in obtaining arrow-heads that we gave up all intentions of going to it again. However we did revisit it, and each time with considerable success. On the side next to the farm, and towards the nort-east of the hollow are a number of Sandy hillocks where we picked up a good many arrow heads & scrapers. All along

the side nearest the farm the sand has in a great measure disappeared and the stones are larger and more weather beaten, and here we also found a considerable number of both implements, but especially Scrapers + what I think the two adzes were picked up here. In the middle of the hollow is a long sandy tract, and at the west end of it is a large hummock at the western extremity of which we picked up from 15 to 20 scrapers on one occasion, and all within a space of 5 or 6 square yards. In turning over one of them with my staff - I moved the sand and exposed an arrow head which you may be sure was quickly picked up: it was the only one we found there. To the east of this hummock and on a sandy part, John picked up the largest arrow head though imperfect. We obtained a good many of both classes in this sandy part. All along the ridge bounding this hollow on the south and on the sea-side of it we found only 2 arrow heads, but a great many scrapers, and chiefly very much weather worn; and at the western extremity of the same ridge there are several sandy banks where we picked up several Scrapers and only two arrow heads. In every spot we visited we came upon small circles of stones with several chips inside, indicating that some one had been there before us and had found something or other. I daresay you all have a shrewd guess who that somebody is. If I am correct in my surmise, our worthy President must have a good collection also.

In conclusion I would only add that should any Member of the Field Club wish to search for these implements he must not be discouraged should he fail in his first attempt. Some of you may say that there will be no more to find. Search and you will find. After a heavy gale or heavy rain you will find that some will crop up even in the same ground you had already gone over. I have found it so.

Besides the numerous chips of flint and chert lying scattered about in these banks & hollows there are also many bits of "chuck" or quartz, some of which I have with me. Probably they may have been used for boring some soft materials, as their pointed oppo shape would indicate. I have also one or two bits of fossil as well as some bits of petrified wood. There is also a curious piece of semicircular stone whose edge is regularly notched: but whether this is a result from natural causes, or designed by man, I cannot say.

Golspie 6th. July 1880

Thomas Stevenson

Golspie 4th Dec^r. 1880. At this date my collection numbers 256 arrow-heads perfect & imperfect and about 1200 "Scrapers" "Trimmed Flakes" "Borers" & "Bolas" or "sling-Stones."

T. S.