A COLLECTION OF STONE AND FLINT IMPLEMENTS FROM AIRHOUSE, PARISH OF CHANNELKIRK, BERWICKSHIRE. BY J. GRAHAM CALLANDER, F.S.A.Scot., DIRECTOR OF THE NATIONAL MUSEUM OF ANTIQUITIES.

One of the most interesting additions which have recently been made to our National Museum is a collection of stone and flint implements, generously presented by Mr John Robert Fortune, who had picked up most of them himself on his farm of Airhouse, near Oxton. The farm lies high up on the western slopes of Lauderdale, near the head of the valley, at an elevation of about 1000 feet above sea-level (O.S. 6-inch map, Berwickshire, XIII). To the north the ground falls quickly down to the Mountmill Burn, but to the east and south the descent is more gradual. To the west the land rolls up to a height of 1200 feet and 1500 feet before it suddenly descends into Gala Water, about 4 miles distant. Evidence of the early occupation of the district is seen in the numerous native hill forts which are situated in the vicinity; at least ten can be counted within a radius of 3 miles of the farm. Further, the Roman fort at Channelkirk lies barely a mile to the north, and the Roman road from Newstead to Inveresk must have traversed its immediate neighbourhood, if it did not actually pass through it.

The collection consists of a flint axe; eight stone axes; a stone hammer; an anvil stone; a perforated stone; five stone whorls, one being of shale or jet; a bead, and a small fragment of an armlet of the latter material; a spear-head, forty arrow-heads, six borers, a saw, ten long narrow implements dressed steeply on the edges and flat on the under side, three being chipped on one edge only, forty-two triangular implements of peculiar form, ninety-four scrapers, nineteen triangular implements, some of which may have been arrow-heads, five knives, and
a considerable number of flakes and blades showing secondary working, all being of flint except a very few which are of chert.

It can be readily understood that a general collection like this from a single restricted area is of far greater importance than one gathered in different localities, because, not only does it exhibit a complete selection of the stone and flint implements used by the people who fashioned them, but it gives an idea of the relative numbers of their different types of tools. This collection, however, has a further value, as it contains a good selection of two uncommon classes of implements, the so-called lop-sided arrow-head and the triangular objects.

Axes.—Of the nine axes, four are complete or nearly so. One, which measures 3\(\frac{3}{8}\) inches in length, 2\(\frac{1}{8}\) inches in breadth, and \(\frac{1}{4}\) inch in thickness, is made of blackish-grey flint. It is nicely flaked all over and ground at the cutting edge only. Evidently it has been made out of a tabular piece of flint as parts of the cortex have not been removed by the flaking. The next, made of indurated grit, is well polished and ground flat on the top and bottom edges. A small piece is broken off the butt end and it measures 4\(\frac{1}{8}\) inches in length, 2\(\frac{1}{4}\) inches in breadth, and 1\(\frac{1}{2}\) inch in thickness. The third is complete though the surface is roughened by weathering, and there are several grooves made on it by harrow tines. It is of indurated clay-stone and measures 4\(\frac{1}{2}\) inches in length, 2\(\frac{1}{2}\) inches in breadth, and 1\(\frac{3}{8}\) inch in thickness. The last of the four complete specimens is interesting because it has been made simply by grinding a cutting edge on the end of a suitable water-worn piece of hard sandstone. Of sub-oval section, it is very narrow in relation to its length, and is slightly curved horizontally and to a less extent laterally. It measures 8\(\frac{1}{2}\) inches in length, 2\(\frac{1}{8}\) inches in breadth, and 1\(\frac{1}{4}\) inch in thickness. One of the imperfect specimens is the battered central portion of what has been a well-finished axe of felsstone; the only measurement obtainable is the breadth which is 2\(\frac{3}{8}\) inches. The second consists of the butt end of an axe measuring 2\(\frac{3}{8}\) inches broad. The remaining three are made of greywacke and are of larger size and heavier make than any of the others. The front part of them is in good preservation, but all have the butt-ends struck off in big flakes. As the fractures are not new it is possible that they had been broken intentionally in this peculiar fashion at an early date.

Hammer and other Objects of Stone.—The hammer, which is made of a fine-grained granitic stone, is of flattened oval section and tapers gradually from the face towards the butt, both ends being rounded though rather flat. It measures 3\(\frac{1}{8}\) inches in length, 2\(\frac{1}{4}\) inches in breadth at the face and 1\(\frac{1}{2}\) inch at the butt, and 1\(\frac{7}{8}\) inch in thickness. The perforation, which is set nearer the butt than the face and measures
\(\frac{13}{16}\) inch in diameter, has been drilled from both sides as it narrows very slightly towards the middle. The hammer is nicely polished, but as it is traversed horizontally by several soft veins, these have weathered at the surface.

The anvil-stone is formed of a flat water-worn piece of greywacke, and measures \(5\frac{1}{4}\) inches in length, \(2\frac{2}{5}\) inches in breadth, and \(\frac{6}{8}\) inch in thickness. It shows pittings on both faces near one end. Many anvil-stones of this type have been found on the Glenluce Sands.

Half of a perforated irregular disc of micaceous grit measures \(3\frac{1}{4}\) inches in diameter and \(\frac{3}{8}\) inch in thickness, the hole, which measures \(\frac{3}{8}\) inch in diameter, being countersunk from both sides.

Of the five whorls, two of which are split horizontally, only one calls for comment. It is flat, rounded on the periphery and made of shale, its measurements being \(1\frac{3}{4}\) inch in diameter and \(\frac{7}{16}\) inch in thickness. The others measure \(1\frac{1}{16}\) inch by \(\frac{3}{4}\) inch, \(1\frac{7}{10}\) inch by \(\frac{1}{4}\) inch, and \(1\frac{2}{3}\) inch, and \(1\frac{5}{6}\) inch in diameter.

The other two objects of shale are a bead, roughly quadrangular in shape, with a bi-conical perforation, measuring \(\frac{3}{15}\) inch by \(\frac{1}{2}\) inch by \(\frac{5}{8}\) inch, and a small fragment of an armlet measuring \(\frac{3}{8}\) inch in breadth.

**Spear-head.**—This object, which is leaf-shaped, is of dark-brown flint, and measures \(2\frac{2}{5}\) inches in length and \(1\frac{10}{16}\) inch in breadth (fig. 1, No. 1). It is nicely flaked on both sides, but has a chip broken off on one edge more than half-way up.

**Arrow-heads.**—One, which is made of black chert, has a broad tang but no barbs (fig. 1, No. 2). It measures \(2\frac{5}{8}\) inches in length and \(\frac{5}{4}\) inch in breadth.

Eight are of the barbed and stemmed variety, of which one has lost both barbs and two have parts of one barb broken off. Six are of grey flint, one of milky-white flint, and one of black chert. The complete specimens measure \(1\frac{1}{4}\) inch by \(1\frac{3}{16}\) inch, \(\frac{13}{16}\) inch by \(\frac{11}{16}\) inch, \(\frac{3}{2}\) inch by \(\frac{3}{2}\) inch, \(\frac{3}{8}\) inch by \(\frac{1}{5}\) inch, and \(\frac{5}{8}\) inch by \(\frac{1}{2}\) inch; the others are \(1\frac{9}{16}\) inch, \(1\frac{3}{4}\) inch, and \(1\frac{1}{6}\) inch in length.

Twelve are of the leaf-shaped variety; eight are of grey flint and have small chips broken off them, one is of brownish-grey colour and is in perfect condition (fig. 1, No. 10), one is of black chert (fig. 1, No. 17), and two are of green chert (fig. 1, Nos. 18 and 19). In size they vary from \(1\frac{5}{8}\) inch by \(\frac{3}{8}\) inch to \(\frac{11}{16}\) inch by \(\frac{3}{8}\) inch. There are also fragments of other six of the same type, four being of grey flint, one of bright yellow flint, and one of black chert.

Of the nine so-called lop-sided arrow-heads, seven are of flint of brownish-black colour and two of light-grey colour (fig. 5, Nos. 1 to 9). They measure \(2\frac{1}{6}\) inches by \(1\frac{1}{2}\) inch, \(2\frac{1}{3}\) inches by \(1\frac{1}{6}\) inch, \(1\frac{1}{6}\) inch by
Fig. 1. Spear-head of Flint and Arrow-heads of Flint and Chert from Airhouse, Berwickshire.
1\frac{1}{8} inch, 1\frac{3}{8} inch by 1\frac{1}{3} inch, 1\frac{5}{8} inch by \frac{13}{16} inch, 1\frac{6}{16} inch by \frac{1}{8} inch, 
1\frac{7}{8} inch by \frac{13}{16} inch, 1\frac{7}{16} inch by \frac{7}{8} inch, and 1\frac{1}{4} inch by \frac{13}{16} inch.

Four are triangular arrow-heads, one of flint of chocolate colour, two of light grey, and one of light yellow colour (fig. 5, Nos. 10 to 13).

_Borers._—There are six of these implements (fig. 2, Nos. 10 to 12); one flat on the under side and rounded and nicely flaked on the back measuring 1\frac{3}{16} inch in length, four dressed along both edges on the upper side only, measuring 1\frac{5}{8} inch, 1\frac{9}{16} inch, 1\frac{1}{2} inch, and 1\frac{1}{4} inch in length, and one dressed at the point and along one edge only, measuring 1\frac{3}{4} inch in length. The first is of flint of rich amber colour and the others are of grey colour.

_Small Pointed Implement._—This object is of light grey flint and of ovoid shape, one end being sharply pointed and turned slightly to one side (fig. 2, No. 13). It is flat below and rounded and well flaked on the back. It measures 1\frac{1}{4} inch by \frac{13}{16} inch.

_Round-backed and Steep-edged Implements._—Of this class of implement there are thirteen examples, all being of black or grey flint (fig. 2, Nos. 1 to 9). Ten are dressed along both edges and three along one edge, the underside being flat and without secondary chipping. They measure from 2\frac{5}{16} inches to \frac{3}{4} inch in length.

_Knives._—There are five knives formed of flat flakes dressed along each side. Four are of grey flint and one of green chert. They vary from 2\frac{5}{8} inches to 1\frac{5}{8} inch in length.

_Sub-triangular Implements._—These implements, which have straight or concave sides and a rounded apex, are usually flaked round these parts, the base generally being unflaked but often showing a _tranchet_ edge (fig. 7). Forty-two of this class of tool appear in the collection; nineteen are complete or nearly so, seven have the apex broken off, and the remaining sixteen are more or less fragmentary. All except three, which are of yellowish flint, are of many shades of grey. The largest measures 2\frac{5}{16} inches in height and 2 inches in breadth and the two smallest 1 inch by \frac{7}{8} inch, and \frac{17}{16} inch in length by 1\frac{11}{16} inch in breadth.

_Scrapers._—These number ninety-four specimens, and with the exception of one or two which are of yellow and brown colour, they are of grey and black flint. Four are side scrapers, four narrow end scrapers, and the remainder, oval or discoidal. The largest of greyish-black colour measures 2\frac{5}{8} inches by 1\frac{11}{16} inch, but the most of the others range between 1\frac{7}{8} inch by 1\frac{7}{16} inch and \frac{3}{4} inch by \frac{5}{8} inch. There is one measuring only \frac{1}{2} inch by \frac{3}{4} inch. One ovoid scraper of grey colour, measuring 1\frac{5}{8} inch by 1\frac{5}{16} inch, is much ground down at the broader end (fig. 3, No. 1).

_Saw._—There is only one saw. It is of grey flint and measures 1\frac{1}{4} inch in length and \frac{7}{8} inch in breadth.
Fig. 2. Borers and other Implements of Flint from Airhouse, Berwickshire. (l.)
Triangular Implements.—Of these implements, which are of grey or black flint, there are nineteen examples. They are dressed on one or both sides and frequently on the base. Some may have been arrowheads.

In addition to the collection from Airhouse, Mr. Fortune also presented two other very interesting implements of grey flint. One, an ovoid scraper measuring $2\frac{1}{4}$ inches in length and $1\frac{1}{4}$ inch in breadth, is finely dressed all round the periphery and is ground smooth round the broader end (fig. 3, No. 2); it was found on Ninewar, Duns, Berwickshire. The other is a large triangular tool with a convex base (fig. 4), measuring $3\frac{3}{16}$ inches in height by $2\frac{3}{16}$ inches in breadth, and carefully dressed along both edges and part of the base, the under side showing no secondary working; it came from Muircleuch, Lauder, Berwickshire.

One of the first things that strikes the archaeologist in examining a collection of flint implements from Lauderdale, and the south-east of Scotland generally, is the colour of the material. All varieties of greys shading into black appear in profusion, while yellows and reds are relatively scarce. In Aberdeenshire and Morayshire, varieties of yellows and reds prevail, while in Wigtownshire, the preponderating colour is a light grey. The source of supply in Aberdeenshire is well known, and

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there is evidence that some of the Wigtownshire flint came from Ireland.\textsuperscript{1} Where the dark-coloured flint of the south-east came from has always been a puzzle to me, but recently I had the opportunity of submitting a collection of implements and nodules from this part of Scotland to Dr H. H. Thomas of H.M. Geological Survey, and he informed me that it was very likely that this material, which was chalk flint, came from the boulder clay, and had been ploughed up from the bed of the North Sea during glacial times. It may be recalled that last year, while describing to the Society a collection of Tardenoisian implements from Berwickshire, I directed special attention to the extent to which the pre-neolithic inhabitants of the district had made use of green chert, which is common in the locality, in making their implements, especially those of smaller size.\textsuperscript{2} The later neolithic people, as

\textsuperscript{1} \textit{Glasgow Exhibition (1911) Catalogue}, p. 813, Nos. 20 and 21.
we can see by the Airhouse collection, made use of it also, but to a much less extent. Evidently while the early people found chert quite suitable for fashioning their pigmy implements, the later folk found it less tractable for making the larger implements which had come into use.

A scrutiny of the implements, both of stone and flint, also brings to light a number of very interesting and unusual features. It has been seen that one of the stone axes has been made just by grinding a cutting edge on one end of an elongated water-worn stone. Although we do not happen to have any such examples in the very large collection of stone axes in the National Museum, I have seen quite a number from Aberdeenshire in private collections. The three large axes, each with its butt end broken off in large flakes, attract attention. Had there been only one, it might not have been specially noticed, but when we find three from one place, and all of a heavy type, it looks as if they had been deliberately broken in this fashion. If the intention were simply to destroy the implements, this was a peculiar method to adopt, as it would have been much easier and more efficacious to have smashed off the cutting ends.

Regarding the flint implements, the most striking feature is, that in a collection of about two hundred and fifty examples, there should be nine of the so-called lop-sided arrow-heads (one being the largest that I have ever seen) and no less than forty-two of the sub-triangular implement with the thin sharp base.

Although I have used the term lop-sided arrow-head, it is doubtful if this is the correct one. In Scotland these objects are generally made of grey, black or blackish-brown flint of fine quality, which has been split up into thin broad flakes, with one side thin and sharp (figs. 5 and 6). This side may be partially chipped, or wholly unworked, but the opposite and thicker side, as well as the concave base, are carefully flaked. As the base is dressed into hollow shape and one edge is longer than the other, the implement displays a single barb of varying length. In some of the Scottish examples, the side on which the barb occurs is the one which is dressed, but that it is not always so is well demonstrated in fig. 6, where there are shown six of the seventeen examples found on the farm of Overhowden, which lies about a mile south-south-east of Airhouse. A few Scottish examples which have the whole of the three sides dressed have been recorded.

Archaeologists do not seem to be agreed as to the exact purpose of these objects. As we have seen, they are sometimes termed lop-sided or single-barbed arrow-heads. Certainly most of them could easily have been

Fig. 5. Lop-sided and triangular Arrow-heads of Flint from Airhouse, Berwickshire.
fitted on to the point of an arrow-shaft, and it is quite easy to trace all the stages in the evolution of the triangular arrow-head from the extreme lop-sided implement, or vice versa.\(^1\) Indeed it is amply demonstrated in the Airhouse collection without searching anywhere else for links to complete the chain (fig. 5). However, the barb of the largest specimen from Airhouse curves in so much, that if it had a shaft fitted in the main axis of the head, the barb would almost have impinged on the shaft.

Fig. 6. Lop-sided Arrow-heads from Overhowden, Berwickshire.

On the other hand, if fitted with the barb clear of the shaft, the point would be distinctly turned to one side.

Irish archaeologists do not seem to class them amongst arrow-heads, as Mr W. J. Knowles in his paper on “Irish Flint Arrow- and Spear-heads,”\(^2\) in which he discusses over five thousand specimens in his own collection, does not include implements of the lop-sided type, although they are common in Ireland. The Rev. G. R. Buick, in a paper read before our Society, was of the opinion that such implements were used as knives, with the barb fitted into the end of a haft in such a

\(^1\) This could be carried further and the triangular implements linked up with the lop-sided implements.

\(^2\) *Jour. Anthropol. Inst.*, vol. xxxii. p. 44.
STONE AND FLINT IMPLEMENTS FROM BERWICKSHIRE. 177

way that they resembled the oblique-edged knife used by shoemakers, the thin undressed side being the cutting edge.¹

Another explanation of their use is that they were inserted into wooden shafts to form harpoons, the undressed edge being fitted into the side of the shaft and the dressed barb being left exposed.²

Why so many of what used to be considered a comparatively rare type of implement in Scotland should be found within a small area in Lauderdale, nine from Airhouse and seventeen from Overhowden,³ is difficult to explain, as in the National Museum we have only ten from the Glenluce Sands, and twenty from the Culbin Sands, localities which have each produced thousands of neolithic flint implements. We have also two others from Berwickshire, two from Morayshire, and one from Tannadice, Angus, in the Museum.

Perhaps the most interesting objects in the collection are the peculiar sub-triangular implements which are made from broad flat flakes, thin on one edge and thick on the other (fig. 7). The thin sharp edge is always the base, and the two sides which are much more frequently concave than straight are carefully flaked, as is the rounded apex which is usually chipped on both faces. The basal edge may be straight, but more often it projects in the middle, and it is as a rule formed by striking off several long narrow flakes transversely from one side of the edge. It is very seldom indeed that the sharp edge is secondarily flaked. In most of them the length from the apex to the centre of the base is greater than the breadth across the sharp base, although in an occasional case it is the reverse. In the Airhouse collection the length varies from $2\frac{3}{16}$ inches to $1\frac{1}{16}$ inch and the breadth from 2 inches to $\frac{7}{8}$ inch. Like the lop-sided implements, they occur but rarely in other parts of Scotland. In the Museum we have five from the Glenluce Sands, sixteen from the Culbin Sands, two from Tannadice, Angus, two from Peeblesshire, one from Speymouth, Morayshire, one from Banffshire, one from Berwickshire, and another from Morayshire, also I have seen a few found in Aberdeenshire.

The forty-two Airhouse examples were found on a restricted area in one field, about 300 yards west-north-west of the dwelling-house on the farm. This field occupies the highest part of one of the numerous small hills in the district, and shows a fairly deep hollow towards its

³ The Overhowden collection also included sixteen triangular implements, some of which might have been arrow-heads; three leaf-shaped and four barbed and stemmed arrow-heads; sixteen scrapers and half of a perforated stone-hammer; the flint was of grey and black colour. The lop-sided implements were all found within 300 yards of a native hill fort and all on the north side (*Proc. Soc. Ant. Scot.*, vol. xlvi. p. 51).
Fig. 7. Triangular Implements of Flint from Airhouse, Berwickshire. (4.)
north-western boundary. The flint axe already described was found in this field, and a fair proportion of the other flint implements also came from it. Generally speaking, however, the latter were well distributed over other parts of the farm. The most of the stone axes came from the adjoining field to the south-west. Many small flakes of flint are to be seen towards the north-western boundary of the field, in the same area that the triangular implements were found, and they also appear in mole-hills outside the drystone dyke on the boundary, just on the brow of the steep brae which dips down about 300 feet to the Mountmill Burn. Since reading this paper I have had the opportunity of examining the large collection of flint implements in the possession of Mr John Readman, Earlston. In this collection I saw over thirty triangular implements from the Airhouse site, and Mr Readman informed me that he had previously given away two frames each containing thirty-five specimens. I have thus been able to trace nearly one hundred and fifty examples of this rare type of implement from this site, and I am informed that considerable numbers more are in other collections. From the large number of implements found, and from the presence of many small chips of flint on the site, there can be no doubt that there had been a regular factory for this type of tool on this hill-top. From the large number of these objects found on the site, it might be expected that they were a fairly common Berwickshire tool and would be found frequently in general collections from the county. But this does not seem to be the case. Mr Readman told me that he had not found many on other farms in Lauderdale which had produced considerable numbers of flint implements, and that those which he had picked up were generally imperfect. In a collection of several hundred flint implements found on the farm of Foulden Moorpark, Berwickshire, described before the Society, only one of these objects was included.

As in the case of the lop-sided implements, their purpose has not been explained satisfactorily. The question of their having been chisel-ended arrow-heads or borers has been considered. But one can hardly believe that an example with an edge 2\(\frac{1}{2}\) inches in length, like one of the specimens from Peeblesshire, and another with the edge 2 inches in length, like the largest in the Airhouse collection, could have been used as arrow-heads, and none of them seem sharp enough at the apex to have been used as a borer. That they were fitted into the sides of harpoon shafts has been suggested, as one of them is figured amongst a number of definite lop-sided implements which are claimed to have

2 Ancient Stone Implements, p. 324.
been harpoon barbs.¹ Many of them with the apex fitted into the end of a haft would have made efficient chisels, but the sharp edge generally shows no signs of wear.

Amongst the scrapers, four are end scrapers and a few are side scrapers, the others being either discoidal or sub-oval. The largest measures 2½ inches in length and 1½ inch in breadth. Very few of these Lauderdale scrapers retain any part of the cortex or crust of the flint. In this they differ from collections made in Aberdeenshire, Morayshire, or Wigtownshire, as the latter contain a considerable proportion which have part of the cortex left. Possibly the reason for this is that the Berwickshire implements were made from larger nodules than those in the north-east or south-west of Scotland.

Perhaps the rarest implement in the collection is a scraper of oval shape and measuring 1½ inch in length and 1½ inch in breadth, which has its broader end very much worn down in a very regular curve (fig. 3, No. 1). Whether this is the result of long use or of intentional grinding it is impossible to say. Strange to say, Mr Fortune's gift contained another scraper which also was worn down to a finely rounded curve at its broader end (fig. 3, No. 2). This specimen, which was found at Ninewar, Duns, also in Berwickshire though not in Lauderdale, is larger than the one from Airhouse, but it does not show so much wear. These two scrapers are the only examples that I have seen worn down in this way, and I have handled and examined many thousands from different parts of Scotland.

It may be noted that near the foot of the steep slope to the north of the site where the triangular implements were found, a short cist was discovered, but its contents had been scraped out by rabbits; also that in a field on the north side of the road leading to the farm, about 650 yards north-east of the steading, on a slight slope, at an elevation of about 900 feet above sea-level, there seems to have been a fort. No trace of ditch or rampart can now be seen, but when the crops are growing a distinct circle showing a greener and more vigorous growth is plainly noticeable.

On the motion of the Chairman a cordial vote of thanks was passed to Mr Fortune for this important donation to the National Museum.