II.

NOTICE OF A FLINT ARROW-HEAD IN THE SHAFT, FOUND IN A MOSS AT FYVIE, ABERDEENSHIRE, WITH NOTES IN ILLUSTRATION OF THE MANUFACTURE OF ARROW SHAFTS WITH FLINT TOOLS. By JOSEPH ANDERSON, Keeper of the Museum.

I first heard of this arrow-head from the Rev. William Lytil, who told me that he had seen it in the collection of Mr J. C. Henderson, Fordoun Cottage, Fyvie. I wrote immediately to Mr Henderson, asking him to allow me to exhibit it at a meeting of the Society. At first Mr Henderson was unwilling to expose his fragile treasure to the risks incident to a journey by rail, but on further solicitation he consented, and I have now the pleasure of exhibiting it to the Society.

Mr Henderson informs me that it was found in July 1875, by some workmen who were cutting peats in the moss of Blackhillock, Fyvie. One of them observing the flint head projecting from the moss, pulled it carefully out with about 9 inches of the shaft still attached. The spade had cut the shaft about the middle, and the whole of it might have been preserved, but the workmen thoughtlessly broke off little bits to ascertain the kind of wood of which the shaft was made. The height of the mossbank above the place where it was found was from 8 to 10 feet, and when first observed the arrow-head pointed upwards.

The head, as will be seen by the engraving (see fig. 1), is of the common variety, intermediate between the leaf-shape and the lozenge, triangular towards the point, and rounded towards the butt. It is of yellow flint, thin and well made. The shaft, of which there are now scarcely 3 inches remaining, is of a hard tough wood, the specific character of which however I have been unable to determine. It has shrunk considerably in drying, and the lower part is much twisted. The flint arrow-head is inserted in a cleft cut out of the end of the shaft, which is carefully tapered off to a fine point, extending almost to the point of the flint on either side, so as to grasp it firmly and form a kind of strengthening midrib down its centre. This is the form usually assumed by the spear-heads of the Bronze Age, and it is a nice question whether the bronze

form was imitated from this, or this from the bronze. There is no doubt that flint arrows were used throughout the Bronze Age. They are found with bronze weapons in sepulchral deposits, and the fact that we have no

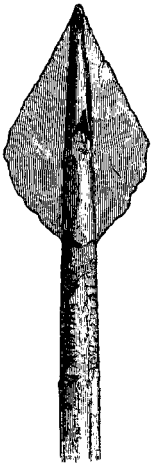


Fig. 1. Arrow-head of Flint still in the shaft, found in a moss at Fyvie, Aberdeenshire. (Actual Size.)

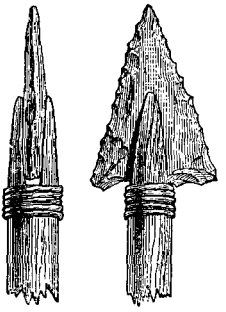


Fig. 2. Arrow-head of Flint, in the Shaft, found in the moss of Geisboden, Switzerland. (Actual Size.)

arrow-heads of bronze suggests the use of flint for this purpose. It is thus impossible to say whether an arrow-head of flint, casually found in a peat bank as this one was, without any associated objects of well ascertained character to determine its time, is to be assigned to the Stone Age, or to the Age of Bronze. In fact we have very little in Scotland that can be relegated on strict scientific principles to the Stone Age, as that is usually defined—viz., to the time when the people of this country were wholly ignorant of metals.

Irrespective of the question, however, of whether this fine specimen is to be held as an arrow-head of the Stone Age or of the Bronze Age, its peculiar interest lies in the fact that it gives us ocular demonstration for

the first time of the method employed in fixing these leaf-shaped arrow-heads in the shaft. "So far as I am aware," says Mr Evans in his work on the Stone Implements of Great Britain, "there has as yet been but one recorded instance of the discovery of a stone arrow-head still attached to its shaft in any part of the United Kingdom."[1] This, the solitary specimen known previous to the present time was found in a bog in King's County, Ireland, and is in the collection of Mr Murray of Edendery. It has been figured by Sir William Wilde in the "Illustrated Catalogue of Antiquities in the collection of the Royal Irish Academy."[2] The arrow-head is small and triangular, with a stem and slight barbs. The shaft is of briar-wood, and has been bound with sinew which still hangs loosely coiled round it.

One found in the moss of Geissboden in Switzerland has been figured by Dr Keller.[3] It is a small triangular arrow point of flint, inserted in a shaft which is tapered off towards the point much more abruptly than this Scottish specimen, and stops short in the middle of the arrow-head instead of continuing to the point (see fig. 2). I am indebted to Mr Evans, who has described and engraved both this and the next mentioned specimen, for the woodcuts of these interesting examples.

A small chisel-pointed arrow-head, with $1\frac{1}{2}$ inches of the shaft still attached to it (fig. 3), was found in a peat-moss in the Isle of Funen, and is now in the Museum at Copenhagen. It is figured by Madsen[4] in his beautiful work, and is there said to be "a flint instrument fastened by means of fine bast-fibre to a wooden shaft." Mr Evans points out, however, that there can be little doubt of its being the point of an arrow of the same character as those in use among the ancient Egyptians, whose points resembled small gun-flints, and were secured to the shaft by bitumen. We have two similar chisel-pointed arrow-heads in the Museum, from Urquhart, Elginshire.

The methods employed by modern savages for fixing their flint arrow-heads on the shafts are illustrated by several specimens in the Museum from

[1] The "Ancient Stone Implements, Weapons, and Ornaments of Great Britain," by John Evans, F.S.A. Lond. 1872, p. 364.

[2] "Catalogue Mus. R.I.A.," p. 254, fig. 154.

[3] "Lake Dwellings," Pl. xxxix., fig. 15.

[4] "Afbildninger af Danske Oldsager, Steenalderen," Pl. xxii. fig. 19.

California (fig. 4). In some of these the flint arrow-head has two notches cut in it on its opposite edges to receive the lashing of sinew by which it

Fig. 3. Chisel-pointed Arrow-head of flint, in the shaft, found in a moss in Funen.
(Actual size.)

Fig. 4. Modern Arrow-head of flint, in the shaft, from California.
(Actual size.)

is bound to the shaft. Instead of being wholly inserted into a cleft in the shaft, however, the butt of the flint-head is simply let into a shallow notch cut in the end of the shaft, then firmly cemented with gum, and lashed with sinew. In some cases the shafts are of reed, and the arrow-point is carried on a short piece of hardwood inserted into the hollow of the reed. By this arrangement the shaft may be disengaged from the point, and if the arrow has penetrated deeply, the point would be left in the wound by pulling out the shaft.

It occurred to me that on this occasion I might illustrate, in a small way, the ancient process of manufacturing arrow-shafts with flint tools—one of the earliest uses to which these primitive tools were applied. Being destitute of the skill and ready-wittedness of the savage, I was not very sanguine of success, but having the tools ready to my hand was an advantage

which I would not have otherwise possessed. Accordingly I selected a ridged, triangular flint-flake (fig. 5); a thick-backed, knife-shaped flake; a small finely-worked knife of beautifully transparent flint (fig. 6), which

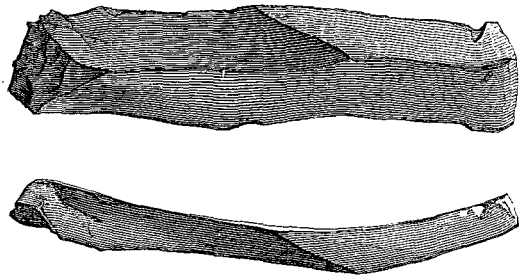


Fig. 5.

has long seemed to me as tempting a tool to try a whittle with as a new knife is to a schoolboy; a fine thin flake to cut out the cleft for the insertion of the arrow-head (fig. 7), and a hollow-scraper, which I believed to be a tool specially made for planing arrow-shafts (fig. 8). I then procured a

Fig. 6.

Fig. 7.

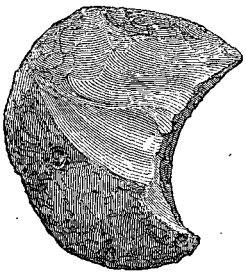


Fig. 8.

rough piece of wood, 18 inches long and 1 inch by rather more than half-an-inch in width and thickness, and having first sawn off the ends with the stoutest of the flakes, I set to work to discover the most effective way of reducing the thickness of the wood by these implements. Scraping I found to be very slow work. In fact, it defeated its own end, because, after the surface had been roughened to a certain extent, it was impossible

to scrape it; cutting or whittling was equally unsatisfactory—you may imagine how unsatisfactory, if you try whittling with the blade of a blunt pocket-knife without a handle. It had occurred to me that there must be a reason for the bent form of a certain class of flakes, and that reason I thought might be the method I was in search of. I therefore laid aside the knife-shaped flake, which had worked well as a saw, though it would not behave like a knife, and taking the bent flake, I tried it in various ways. At last I saw that by bringing the bent part over the piece of wood held against the breast, with the flat side of the flake against the surface of the wood, and drawing it quickly towards the body, the sharp edge passing diagonally over the surface stripped off shavings like a spoke-sheave. Having thus discovered the process, the rest was easy. Wrapping a bit of soft leather round the butt-end of the flake to protect the fingers and give a firmer hold, I soon reduced the wood to the desired shape. The notch in the butt-end of the shaft was cut with the finely worked knife, which also removed the harder portions that did not shave off readily with the bent flake. The slit at the top was cut with the thin flake, which is as sharp as any penknife, and cuts as readily if properly managed, care being taken to avoid any lateral jerking, which infallibly breaks a minute portion off the edge of the tool. Then the question came to be, how the surface was to be made smooth and even, and the hollow scraper was tried for some time in several ways with no satisfactory result. Experience and reflection at length enabled me to see that there was only one way in which the tool could be used efficiently. Placing the shaft against the breast as before, embracing it between the two crescentic ends of the hollow scraper, and then drawing it backwards and forwards, with the opposing crescentic ends pressed firmly against the shaft, the forward motion caused the upper edge to act like the edge of a plane, and thus, by simply rotating the shaft during the operation, an equally smooth surface was produced. Not being a savage, however, time was an element in the process which I could not afford to overlook, and therefore I was content to try a soft wood, and to leave it with a finish which no savage would have been content with. It is sufficiently well-finished, however, to demonstrate the process by which arrow-shafts may be manufactured with flint tools, and to show that these tools are capable of being used with greater efficiency than might be imagined.

MONDAY, *8th May* 1876.

DAVID LAING, ESQ., Foreign Secretary, in the Chair.

Before proceeding to the ordinary business of the meeting, the following motion, proposed by the Chairman, was unanimously agreed to:—That, as the first course of the Rhind Lectures, now concluded, had been so very successful, the cordial thanks of the Society be given to Dr Arthur Mitchell, the Rhind Lecturer.

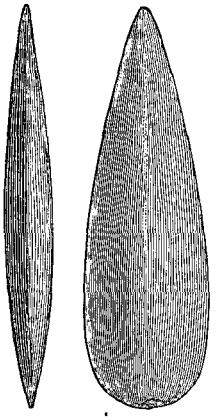
A ballot having been taken, the following Gentleman was elected a Fellow of the Society:—

Rev. ROBERT WALLACE, D.D., Professor of Church History, University of Edinburgh.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors:—

(1.) By ROBERT ROMANES, Esq., F.S.A. Scot., Harryburn, Lauder.

Finely polished Celt of Aphanite, found in Berwickshire, 10½ inches in length, 3¼ inches across the face, oval in section, pointed at the upper extremity, and slightly flattened along the sides. It is of very graceful form, and perfect, with the exception of a small chip in the cutting edge, the result of an accident since it was found. No specimen of precisely similar form occurs in the collection of Scottish Celts in the Museum, or among the British specimens figured by Mr Evans in his recent work on the "Ancient Stone Implements of Great Britain." The specimen most closely resembling it in the Museum is a large and finely polished Celt of similar material, 11½ × 4¼ inches, found in Cornwall, and presented to the Museum by Mr A. H. Rhind in 1860. It is much flatter in the middle than the present specimen, however, and forms a longer oval in section. A small Celt from Caithness, also presented by Mr A. H. Rhind, more nearly resembles this Berwickshire example, though very



Celt found in Berwickshire, 10½ inches long.

much smaller, being only $3\frac{3}{4}$ inches in length, and $1\frac{1}{2}$ inch in greatest width. The flattening on its sides is scarcely perceptible. Of this specimen Mr Evans says ("Ancient Stone Implements," p. 118)—"It is so thoroughly Carib in character, and so closely resembles specimens I possess from the West Indian Islands, that for some time I hesitated to engrave it. There are, however, sufficiently numerous instances of other implements of the same form having been found in this country for the type to be accepted as British." The Celt said to have been found in a canoe at a depth of 25 feet below the surface at Glasgow (Wilson's "Prehistoric Annals," vol. i. p. 53) was somewhat of this form, but shorter in proportion to its width.

In a note accompanying the presentation of this specimen Mr Romanes expresses his regret that he can give no further account of the Celt than than that about twenty years ago his father obtained it from "Sandy Pendrigh," a blacksmith in Lauder, now dead, in whose smithy it had long lain. As it was known in the district as "the Thunderbolt," the probability is that it was found somewhere in the neighbourhood, and preserved in the belief that it had really fallen from the sky.

(2.) By John Bruce, Esq., yr. of Sumburgh, Shetland.

Small Urn of Steatite, found in a tumulus in Fair Isle. The urn is oval in shape, 5 inches across the mouth, and 4 inches high, and is ornamented with a bevelled band underneath the slightly everted lip.

Fragments of a large Clay Urn of oval shape, about 10 inches across the bottom, and at least 12 inches high, found in the same tumulus. [See the subsequent communication by Dr John Alexander Smith].

(3.) By W. Fettes Douglas, Esq., R.S.A.

Small Whorl of Lead, from Denmark, ornamented on one side with triangular spaces filled by parallel lines, and on the other by circular knobs alternating with bands of parallel lines.

(4.) By Mr James M'Whinnie.

Wrought Iron Latch from an old door in Baxter's Close, Lawnmarket.

(5.) By JAMES BURGESS, Esq., M.R.A.S., F.R.G.S., Archæological Surveyor and Reporter to Government.

Report of the Archæological Survey of Western India. Folio, 1874.

(6.) By PETER LORIMER, D.D., Corr. Mem. S.A. Scot., the Author.

John Knox and the Church of England. London. 8vo, 1875.

(7.) By CHARLES FRASER MACINTOSH, Esq., F.S.A. Scot.

Invernessiana. 8vo, 1875.

(8.) By R. F. LE MEN, Corr. Mem. S.A. Scot., the Author.

Etudes Historiques sur Le Finisterre. 12mo. Quimper, 1875.

(9.) By the ARCHÆOLOGICAL SOCIETY OF FINISTERRE.

Bulletin de la Société Archæologique du Finisterre. 8vo. 1874–75.

(10.) By the GERMAN GOVERNMENT, through H.M. Foreign Office.

Die Urnenfelder von Strehlen und Grossenhain. 4to. Cassel, 1876.

Denkmäler des Mittelalders und der Renaissance, &c. III., IV., and V. Dresden. Large folio.

(11.) By the EDINBURGH ARCHITECTURAL ASSOCIATION.

Edinburgh Architectural Association's Sketch Book. Part I. folio, 1876.

There were also exhibited :—

(1.) By Rev. GORDON INGRAM, Minister of U rquhart.

Earthenware Jar found in digging a grave in the churchyard of Urquhart, Elginshire. [See the description of this jar at p. 378 *supra*].

(2.) By JAMES DALGARNO, Esq., Corr. Mem. S.A. Scot., Slains.

Aureus of Honorius (A.D. 395–423), reverse VICTORIA AVGG, figure of the Emperor with a standard and globe surmounted by a Victory, placing his foot on a captive. Found near the Meikle Loch, Slains, Aberdeenshire.

The following Communications were read :—