

VII.

REPORT ON THE ARCHÆOLOGICAL EXAMINATION OF THE CULBIN SANDS, ELGINSHIRE, OBTAINED UNDER THE VICTORIA JUBILEE GIFT OF HIS EXCELLENCY DR R. H. GUNNING, F.S.A. Scot. BY GEO. F. BLACK, ASSISTANT KEEPER OF THE MUSEUM.

Having been entrusted by the Council of the Society to make an archæological examination of the sandhills of Culbin, Elginshire, I beg to submit this report as the result of my labour. In consequence of the great extent of ground to be examined, coupled with my inexperience in field work, I have had great difficulty in carrying out the work entrusted to me by the Council. Nevertheless, I think with the aid of the accompanying sketch-map (fig. 1), which shows approximately the positions of the various places indicated, the descriptions will be rendered sufficiently clear. Many points of archæological and especially of geological importance I have been obliged to pass over, and leave to others better able to deal with them.

The Culbin Sands occupy a stretch of coast extending from the river and bay of Findhorn on the east to a distance of fully three miles westward, while inland they extend over a mile and a half from the coast at the widest part. In the centre of this space are a number of large mounds or hills of blown sand ranged in a line with their major axes east and west. This position of the hills is due to the prevailing winds, which are generally from the west.¹ At times these hills reach a height of 50 to 60 feet above the surrounding level. On all sides of the sandhills, but principally on the east, north, and south, are numerous bared spots, locally called "stone" or "stony rigs," the surfaces of which are covered with water-worn stones. In many places these bared spots are bordered by low banks or terraces of dark-coloured earth, which, being tougher in some parts than in others, has better resisted the de-

¹ At Forres the west wind is said to blow for about 260 days in the year. The geological history of the sandhills has been dealt with in the *Transactions of the Edinburgh Geological Society*, vol. v. pp. 524-531. See also "The Lost House of Culbin" in C. Fraser Mackintosh's *Antiquarian Notes*, Inverness, 1865, p. 313.

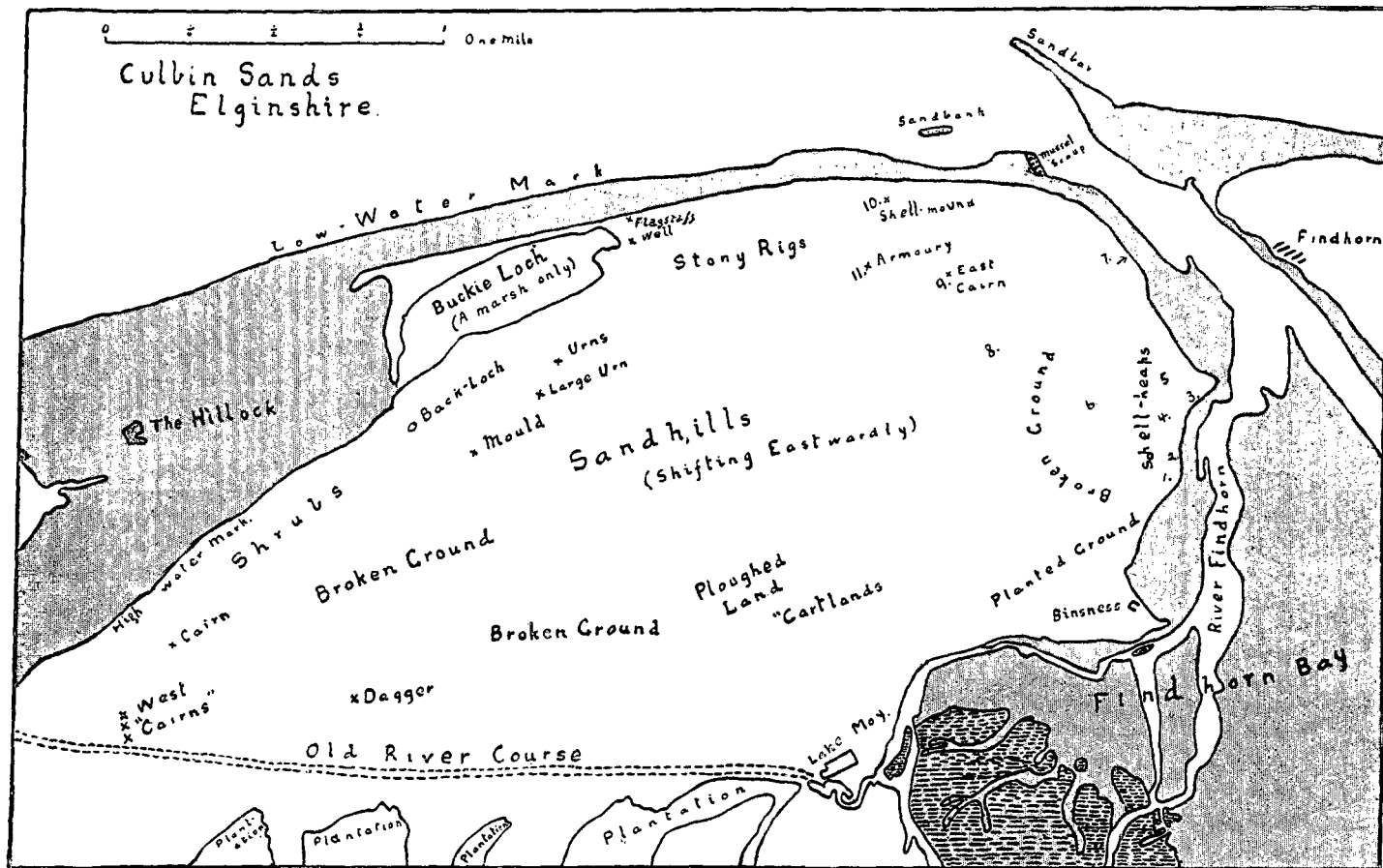


Fig. 1. Sketch-Map of the Culbin Sands, Elginshire.

nuding action of the wind and sand. Near these banks, and in the exposed places generally, many implements of flint, as arrow-heads, knives, borers, and scrapers; pins, needles, and clippings of bronze or brass; rubbing-stones, hammer-stones, bones, pottery, objects of iron, &c., have been found. Besides the implements and other objects found, there are abundant traces of former occupation in the presence of small refuse or shell heaps, the centre of each of which almost invariably shows the site of a hearth or fireplace.

On making application to the factor, Mr Peter Burgess, Banker, Glen Urquhart, and a Fellow of this Society, for permission to make excavations, that gentleman not only granted permission, but also kindly volunteered to come himself, and to bring as many workmen as I thought necessary to allow of the work being done in a thorough manner. This arrangement I readily agreed to, and accordingly met Mr Burgess, who was accompanied by Mr Angus Grant, Schoolmaster, Glen Urquhart, Mr Kennedy, the forester of the estate, and four workmen. After a consultation we agreed to examine the four supposed "cairns" at the west end of the sandhills, and the large shell mound and "cairn" at the east end, an account of each of which will be found in their order in this report.

In order to simplify the work in hand and to save repetition, I decided to commence the examination of the sands at Binsness Point, and to work north and west along by the coast line to due south of "The Hillock," leaving the inland places to be examined later on. As the positions (as near as possible without actual survey) of the various shell-heaps, "cairns," &c., are shown on the sketch-map by Arabic numerals, it is hoped there will be little difficulty in understanding the following notes.

At a point about 600 yards along the shore from Binsness (marked 1 on the map) the embankment is upwards of 15 feet in height and 10 or 12 feet back from high-water mark. At from 12 to 18 inches below the surface a layer of shells about 2 inches in thickness projects from the bank. At one end the shells are mostly mussel (*Mytilus edulis*) and cockle (*Cardium edule*), while at the other end periwinkles (*Littorina littorea*) are in greatest abundance. Below the mussel end there is a

layer of carbonaceous matter fully 6 inches in thickness and extending for a length of 3 feet in a horizontal direction.

At (2) is the site of a shell-heap which has fallen down and now covers the side of the embankment. The shells observed here are mussel, cockle, periwinkle, and a few oyster. A few animal bones were noticed, but they were too fragmentary for identification. Along the top of the embankment for about 100 yards each way are numerous small shell-heaps from 2 to 8 feet in diameter, and composed principally of mussel and cockle.

(3) is a large irregular hollow, strewn with small water-worn stones. A few implements of flint and an occasional coin have been found here. At a spot near the centre of the hollow are four small shell-heaps at intervals of three or four yards. One of these shell-heaps is at the side of a low embankment, the exposed section of which shows a layer of carbonaceous matter resembling soot, about 6 inches in thickness. The shells here are mussel, cockle, periwinkle, and one or two oyster. It is worth noting that the greater number of the cockle-shells observed here seem to indicate a larger species than I noticed elsewhere on the sands. A valve, apparently of a species of *mya*, and two or three teeth of sheep, were also found in one of the shell-heaps. In a small hollow (4) are the sites of several other small shell-heaps. At (5) is a small shell-heap mingled with blackened earth and burnt broken stones which appear to have been subjected to great heat.

A few hundred yards inland is a square plot (6) enclosing two small shell-heaps, one at the north-east and the other at the south-west. The shells here are principally cockle and mussel, and a curious feature about them is that they are nearly all worn away to a white mass resembling lime. Between the south and south-east sides and the sea is a grove of small fir-trees, among which I noticed three or four small shell-heaps.

At (7) we reach a natural opening into the sandhills, which is the only one on the east side. It follows a north-westerly direction, and has on the right hand the east "cairn," the large shell-mound, and the spot called the "armoury." In a more westerly direction from the opening are a number of raised beaches of shingle forming a series of steps (8). The supposed cairn (9) is about 700 yards west from the coast at

high-water mark, and is near the march between Moy and Binsness. It measures about 60 feet in diameter at the base, and is about 14 feet in height, and is merely a hillock of blown sand covered with water-worn stones, the greater number of which are fractured. On digging into the top it was found to have been formerly used as a fire-place. For a depth of 18 inches below the surface on the summit, the mound was a mass of carbonaceous matter, burnt broken stones, &c., in quantity nearly three cubic yards. Among the blackened earth were found two portions of the under-stones of saddle-querns, which are now in the possession of Mr Burgess. These were the only articles of an artificial character found. We removed the entire top of the mound, and found that all below the depth of 18 inches was blown sand. In the immediate vicinity of this mound a considerable number of flint implements such as scrapers, borers, arrow-heads of the leaf-shaped and barbed varieties have been found. A few yards south-west from the cairn is the site of a shell-mound now level with the surrounding surface.

The shell-mound (10) is the largest and most interesting on the Culbin Sands. The mound occupies the face of a hill about 30 feet in greatest height and about 120 yards from high-water mark. The strata of shells are situated about 20 to 25 feet above the base of the hill, but large portions had fallen from time to time, covering the slope with a great mass of shells, bones, pottery, and fragments of iron. All the pottery, iron objects, and the most characteristic of the bones were carefully gathered up and laid aside before we commenced the excavations. The mound was about 30 feet in length, with an average thickness of about 3 feet by 6 feet in breadth. The shells occurred in regular layers, generally with a thin strip of earth or sand between, as if denoting irregularity of accumulation. In one or two places, however, the intervening bands of earth could not be distinguished, in consequence of which the mound presented a compact face upwards of 4 feet in thickness, and consisting entirely of shells. Above the shell-heap was an accumulation of about 8 feet of sand and vegetable matter, in part removed by the action of the wind.

To enable us, if possible, to obtain some clue to the age of the mound,

it was decided to commence work by removing entirely the topmost layer of shells, and so working down successively through each layer. Lying on the top of the mound at the east end were a number of shells of the solen or razor-fish (*S. siliqua*), none of which were found in the actual shell layers, nor on any of the other shell-heaps on the sands. The principal shells were mussel, periwinkle, and cockle, but mostly of the first two kinds. A few valves of *Cyprina islandica* were found in the middle and bottom layers. A solitary limpet-shell was found *in situ* in the bottom layer, and another was found lying on the slope of the mound. These were the only two of this species found. Two or three specimens of a variety of *Fusus* and a few specimens of *Pecten maximus* were also found in the bottom layer. Fragments of mediæval ware, glazed and unglazed, were found in the upper and middle layers, but the greatest quantity was found within a few inches of the surface. A considerable quantity of the pottery is encrusted on the outside with carbonaceous matter, in some cases as much as an eighth of an inch in thickness. About a fourth of a cubic yard of fragments of pottery were gathered from the mound, but strange to say, although collected from such a limited area, scarcely any two fragments can be found to join together. An oval water-worn stone, about 6 inches in length, showing traces of use by hammering on each of its flat faces, was found at the junction of the middle and bottom layers. The markings on the hammer-stone are fresh-looking, and the implement is probably of no great age. A considerable quantity of iron nails, rivets, bolts, &c., were found in the upper layer and also on the hill slope. These iron objects appear to be remains of wreckage, which had probably been used as firewood. The only tool found was an iron knife, 6½ inches in length, with a broad back, and tapering to a sharp point; and an iron staple, much corroded. A few bones of animals, such as sheep, ox, pig, and hare, were found in the upper and middle layers, and in great abundance on the slope of the hill. Quantities of fish-bones were also met with, but in such a fragmentary condition that the species could not be determined. A solitary flake of flint was found in the lowest layer, but it cannot be taken as indicating an extreme age for the mound, or even for the lowest layer of it. It may have been used as a strike-light. Previous to my visit the

guide stated that he found a small ring-brooch of bronze without pin, a small brass weight, two whorls of earthenware, and a finger-ring on the slope of the hill below the shell-mound. South from the shell-mound just described is an open space which the guide called "The Armoury" (11). Objects of brass, such as pins, needles, buckles, clasps, brooches, brooch-pins, and rivets; iron fish-hooks, slag, &c., have been found here in great abundance. Along with these articles there have also been found numerous fragments of mediæval pottery similar to that found in the large shell-mound; and a large number of copper coins, principally of Mary Queen of Scots, Francis and Mary, James VI., Charles I.; and others, down to George III. With the exception of the "Gartlands" or "Gadelands," this is the only spot on the sands where iron fish-hooks have been found. Two shell-heaps occur within the area of the "Armoury," the shells of which are principally mussel, cockle, and periwinkle, with a few fragments of glazed earthenware scattered throughout the mass. The various objects found here are described in detail in their respective places further on.

In a direct line west for several hundred yards to the edge of the Buckie loch are several bared spots of irregular size, in which a large number of flint implements such as arrow-heads, scrapers, knives, &c., and hammer-stones of quartzite have been found.

A few hundred yards south from the east end of Buckie loch is a large open space in which are several beaches of water-worn stones. In this space the urns and stone mould described below are said to have been found. The smaller urn with strike-light was found with fragments of others at the spot marked "urns" on the sketch-map; and the larger urn figured on p. 504 at the place marked "large urn." The mould for casting bronze axes was found about a quarter of a mile further on in a south-westerly direction at the place marked "mould." Between this spot and the cairns, at the extreme west of the sandhills, the ground is broken and irregular. The single cairn shown on the map at the west end of the sands was the first excavated. It is of oblong form, and lies nearly east and west, at a distance of about 70 yards east from Moy fence. Previous to the excavations it was 12 feet in height and about 235 feet in circumference. The top was covered with a thin layer of

fractured stones. Two trenches made through the cairn from opposite sides showed it to be of natural origin and composed entirely of blown sand. About 75 feet from the base of the mound is a circular spot, 9 feet in diameter, the surface of which is covered with small chips of micaceous stone.

The three mounds or cairns shown grouped together on the map were next examined. They lie almost in a direct line north and south, with the march fence between Moy and Binsness passing between the first and second. The first mound is on the Binsness side, and seems to be only a beach of stones. It is about 120 feet in length by 100 in breadth, and 4 or 5 feet in greatest height. A quantity of shells of mussel and periwinkle covered the top of the mound, which also showed traces of a hearth in a layer of carbonaceous matter.

The second or middle mound is much smaller, being only 86 feet by 66, and about 10 feet in greatest height. The top was covered by a layer of blackish earth to a depth of 8 inches, below which was pure sand. Nothing was found here.

The third mound was the most interesting of the three, and presented all the appearance of being an ordinary shell-mound. It is of irregular oval form, 122 feet in length by 92 feet in breadth. A section made through it from east to west disclosed a quantity of bones and teeth of horse, ox, sheep, and deer. Small portions of horn of red deer (*Cervus elaphus*) and a tine of roebuck (*Cervus capreolus*) were also found. The bones, shells, and burnt earth extended downwards to a depth of 18 inches, below which was pure sand. The shells seemed to be mostly mussel. A portion of a saddle-quern was the only implement found.

The greater part of the place marked "Ploughed Land" is an original land surface, and is marked with well-defined ridges, like an ordinary ploughed field. A curious fact, however, is that numerous small shell-heaps rest directly on top of the furrows, showing that the shell-heaps are subsequent to their formation. The shells are mussel, periwinkle, cockle, and a large number of oyster. So far as I have been able to observe, this is the only spot on the sands where so many oyster shells are to be found. Fragments of glazed earthenware, iron fish-hooks, brass pins, beads of jet, &c., were found here in abundance; and

also a few arrow-heads and other flint implements. The bronze brooch shown in fig. 31 is also said to have been found here.

A little to the south and east of the ploughed land is the spot locally known as the "Gartlands" or "Gadelands," and measuring about 370 yards in length by 150 in breadth. Along one side are two beaches of water-worn stones, one above the other. A shell-heap about 25 feet in length by 12 in breadth occupies a portion of the south side, and is composed of oyster shells of large size and shells of mussel, cockle, and periwinkle in great abundance. A stone axe, several arrow-heads and other flint implements, beads of jet, points of laces, glazed pottery, and numerous hammer-stones are said to have been found at this place.

At the east end of the "Gadelands" is another open space about 200 yards square, containing eleven small shell-heaps, and one of moderately large size composed principally of cockle, mussel, and a few oyster shells. Portions of mediæval ware were picked up in this place.

Numerous small shell-heaps are scattered over the whole of the intervening space between the base of the sandhills and the "Gadelands" on the west, and the river Findhorn on the east, but as they possess no features of importance it is unnecessary to mention them in detail.

FINDHORN.

On the Findhorn side the ground is not so much broken up, the greater part of it being covered with a thick growth of tough, wiry grass. The bared places or "stone rigs," as on the Culbin side, are strewn with water-worn stones, the upper or exposed sides of which are mostly covered with lichen, as are also the majority of the flint implements found here. Unlike the implements found on the Culbin side, the specimens found here are not so often nor so highly polished.

A few hundred yards east of the village of Findhorn is a small shell-heap occupying the top of a mound of blown sand, the sides of which are protected from the action of the wind by a covering of water-worn beach stones. The centre of the shell-heap was marked by a quantity of burnt earth, blackened broken stones, charcoal, &c., showing the presence of a fireplace. The shells composing the heap were principally mussel (*Mytilus edulis*), cockle (*Cardium edule*), with a small number of

periwinkle (*Littorina littorea*), and a fragment of *Pecten islandicum*. The only animal remains found were two or three small pieces of bone, and these were too small for identification. A pin or bodkin of bone, 2 inches in length, pointed at one end, was the only worked implement found *in situ*. On showing this pin to Mr John Bisset of Findhorn, he told me he had seen somewhat similar implements used by old fishermen to pick out the lines of a tangled net. A few yards from the site of the shell-heap I found the half of a well-used upper stone of a saddle-quern. The guide told me that three or four years ago he found here two stone axes and several rubbing-stones.

Further east a short distance are two other small shell-heaps, similar to the one just described, but nothing was found in them. In an almost direct line south from the last shell-heap are the sites of two burials by cremation. Each burial was indicated on the surface by a small quantity of burnt human bones. In one of the lots were several fragments of the skull, from the condition of which I inferred the person cremated to have been a full-grown man. In neither case was there any indication of a cist or urn, and on excavating the spots nothing was found but pure sand mixed with water-worn stones.

Near the first shell-heap, and between it and Findhorn, are three spots presenting features somewhat unusual. Two are of a superficial area of about 25 feet each, and are covered by small water-worn stones which are broken into two, four, and even six pieces. On all sides of these two spots are the ordinary beach stones, and the surfaces covered by the broken stones are so conspicuous as to at once catch the eye. The stones on the third spot appear as if they had been fractured by fire. They differ also in their arrangement from those of the other two places in being heaped up in the form of a small flat-topped mound.

A large number of flint implements have been found on the Findhorn side, principally scrapers and arrow-heads. No objects of bronze or brass, such as are met with on the Culbin side, appear to be found here. A few small fragments of pottery, apparently of Bronze Age type, have been picked up at different times. A few beads of glass have also been found, principally of the double globular form. Eastward, near Burg-head, a bronze spear-head is said to have been found, and it may possibly

be the one presented to the National Museum by Mr Hugh W. Young of Burghhead, a Fellow of this Society (see *Proc. Soc. Ant. Scot.*, vol. xii., New Series, p. 379). Another small spear or lance-head, of the type with broad lozenge-shaped blade, with loops on the socket, was found in the parish of Alves, and is now in the collection of the Rev. Mr M'Ewan of Dyke.

I have to thank Mr John Bisset of Findhorn for allowing me the use of his boats, and for other assistance; and his brother, Mr Joseph Bisset, of the Royal College of Science, South Kensington, for help in drawing up the map. To make the report complete, a detailed notice of the Culbin collection in the National Museum is appended.

STONE IMPLEMENTS.

Axes.—There are only seven stone axes in the collection, all of small size. They are mostly of gneiss, and vary from $3\frac{3}{8}$ inches to 5 inches in length.

Hammer-stones are very numerous, there being over one hundred selected specimens in the collection. They are all formed from water-worn pebbles of quartzite, of oblong or flattish circular form. Those of oblong form are abraded at one or both ends, mostly in the form of a curved ridge, similar to a specimen figured by Dr John Evans.¹ Those of flattish circular form are abraded on their circumference, and two or three have a circular depression on either face. One hammer-stone of oblong form, $3\frac{1}{4}$ inches in length, has a roughly picked depression on two opposite sides, and one end smoothed as if by use as a rubbing-stone, and the other end chipped and fractured.

An oblong pebble of quartzite has a groove on one face $1\frac{1}{4}$ inch in length, $\frac{1}{8}$ inch broad, and less than $\frac{1}{16}$ inch deep, each end of which terminates in a circular hollow $\frac{1}{2}$ inch in diameter, and a little over $\frac{1}{16}$ inch in depth.

There are several flattish pebbles of quartzite with a circular depression on one or both faces, and a socket-stone of red sandstone. A disc of micaceous stone, 11 inches in diameter and 1 inch thick, has a perforation $\frac{1}{2}$ inch in diameter through the centre.

Whorls.—Two are of micaceous sandstone, four of claystone, several (mostly imperfect) formed from portions of mediæval earthenware, and one of lead. Those of stone are from $1\frac{1}{2}$ to 2 inches in diameter, and are well formed. The earthenware specimens are from 1 to 2 inches in diameter, and three of them are imperforate. The whorl of lead is $1\frac{1}{4}$ inch in diameter and $\frac{1}{4}$ inch in thickness.

Mould for Bronze Axes.—Fig. 3 shows both sides of a mould of reddish micaceous sandstone $8\frac{1}{2}$ inches in length, 7 inches in breadth, and $4\frac{1}{2}$ inches in

¹ *Ancient Stone Implements*, p. 221.

thickness. The obverse shows matrices for two axes; one, $5\frac{5}{8}$ inches in length by $3\frac{3}{8}$ inches across the broadest end; the other, $4\frac{3}{4}$ inches in length by $2\frac{3}{4}$ inches across the broadest end. Each matrix is $\frac{3}{4}$ inch in depth. At one

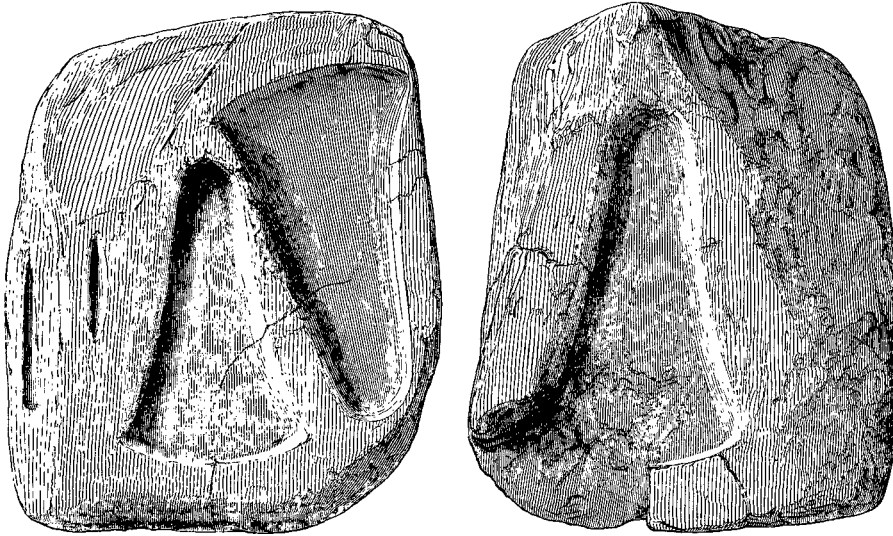


Fig. 2. Obverse and reverse of Stone Mould from Culbin Sands? $8\frac{1}{2}$ inches in greatest length (Scale $\frac{1}{4}$).

edge of the obverse face is a small groove, $1\frac{1}{2}$ inch in length, $\frac{3}{8}$ inch in breadth, and $\frac{3}{16}$ inch in depth. On one side is the matrix, apparently for another axe of much smaller size. It measures only $2\frac{5}{8}$ inches in length, $1\frac{1}{8}$ inch across the broadest end, and $\frac{3}{8}$ inch in depth. On the reverse face is the matrix for another axe, $5\frac{3}{4}$ inches in length and $1\frac{1}{8}$ inch in depth. A portion of the mould is broken off one face. A small portion of another mould, also of micaceous sandstone, showing part of a matrix for flat axes on each face, was found near the same place.

Cup.—A cup formed of steatitic stone was found near the west end of the sands in 1887, and is now in the National Collection. It is almost circular, $4\frac{5}{8}$ by $4\frac{1}{8}$ inches by 3 inches in height, with a projecting handle $1\frac{1}{8}$ inch in length, 2 inches in greatest breadth, and $1\frac{1}{4}$ inch in thickness, perforated from the upper and under sides. Its cavity is $3\frac{3}{8}$ inches in diameter and $2\frac{1}{4}$ inches in depth.

Saddle Querns.—There are ten saddle querns and portions of several others. They are all of quartzite and granite, and range from 15 to 23 inches in length,

and from 9 to 14 inches in breadth. Several of the upper or rubbing-stones of saddle querns of quartzite and granite are also in the collection, three of which are elliptical in form and plano-convex in section. These three are each about $10\frac{1}{2}$ by 7 inches. No specimen of the ordinary quern is known to have been found on the sands.

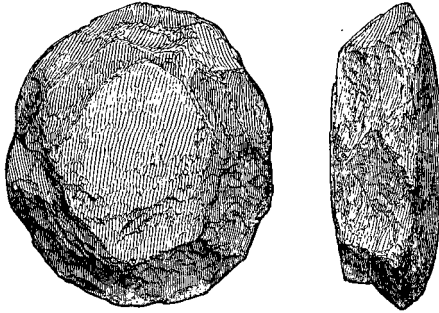


Fig. 3. Discoidal Stone found on Culbin Sands
(Scale $\frac{1}{2}$).

round the edge, and vary in diameter from $1\frac{1}{2}$ to 5 inches and from $\frac{1}{2}$ to $1\frac{1}{2}$ inches in thickness (fig. 3). Their resemblance to some of the so-called palæolithic implements found in the District of Columbia, United States, is worth pointing out.¹

FLINT.

Cores and Flakes.—True cores or nuclei, showing a regular series of conchoidal facets where flakes have been struck off, are not common in the collection. Numerous small blocks of flint, however, show traces of having had chips and flakes intentionally struck off from them. Of chips, splinters, and flakes there is an immense quantity.²

Strike-a-lights of modern origin, and gun and pistol flints are numerous, there being over eighty in the collection.

Scrapers are much more numerous from the Culbin Sands than any other

¹ See *Report of United States National Museum*, 1888, plates cii., *et seq.*

² Sir Herbert Maxwell, in a paper on the Stone Implements of Wigtownshire, says: "For long I was puzzled to account for the profusion of the chips and manufactured objects contained in the drifting sandhills at the head of Luce Bay, as compared with their scarcity in other districts of the county, and their almost complete absence in the Machars or Eastern Division of Wigtownshire. But the mystery solved itself at last. Underlying the vast accumulation of sand are successive ridges of shingle, corresponding to ancient sea-levels. These beaches contain fairly numerous flint nodules, and as the sand shifted with the wind, exposing fresh surfaces of old beach, the flints were picked out and manufactured on the spot."—*Archæological Collections of Ayrshire and Galloway*, vol. v. p. 24. The same explanation applies to the large number of flint implements on the Culbin Sands.

type of implement, there being upwards of four thousand in the National Collection. A large number have been made from external flakes, and still show the original crust of the nodule. A few others appear to have been burned in a fire. The most common form is that of a horse-shoe with a semi-circular cutting or scraping edge. A number are almost circular in form, with the edge trimmed nearly all the way round, but there is not a single specimen in the collection like the one found at Bridlington and figured by Dr John Evans.¹ Many are of "duck-bill" form, with secondary chipping along both sides as well as at the point. Those with a cutting or scraping edge on opposite ends are very rare in Scotland, and there are none in the collection from the Culbin Sands. In size the scrapers vary from $\frac{3}{8}$ inch in diameter to $2\frac{1}{2}$ inches in length, but are mostly about 1 inch to $1\frac{1}{2}$ inches each way.

A large side scraper, $1\frac{1}{2}$ inch in length and $2\frac{9}{16}$ inches in breadth, is very similar in form to the large "choppers" found at Le Moustier, Dordogne, and figured by Lartet and Christy.²

A large number of implements of scraper form, and mostly of large size, are

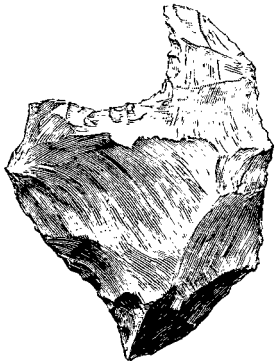
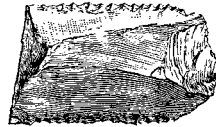


Fig. 4. Hollow Scraper found on the Culbin Sands. (Scale, $\frac{1}{4}$.)



Figs. 5 and 6. Flint saws found on Culbin Sands. (Scale, $\frac{1}{4}$.)

all battered and bruised on the worked edge, and have in all probability been used as strike-a-lights in prehistoric times. Several of these have also been burned in a fire.

Hollow Scrapers, or scrapers with concave instead of convex scraping edge, are also numerous in the collection. Two or three are of a specialised form similar to the one here shown the full size (fig. 4). The woodcut scarcely gives an adequate idea of the fine secondary working on the concave

¹ *Ancient Stone Implements*, p. 276, fig. 219.

² *Reliquiæ Aquitanicæ*, plates xxxviii. and xxxix.

edge. An analogous type of implement is described and figured by Dr Evans.¹

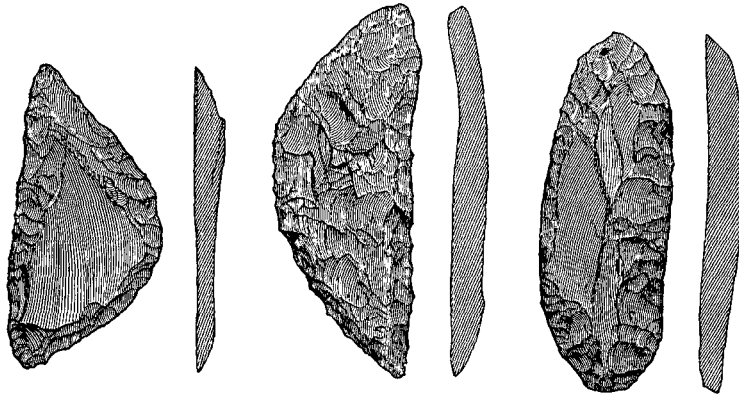
Saws, or flakes of flint with serrated edges, number about fifty specimens, two of the best of which are represented the full size by figs. 5 and 6. The specimen shown in fig. 5 is serrated on both edges, and fig. 6 on one edge only. The serration on both specimens is very minute.



Fig. 7. Flint Borer found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

Borers are not numerous in the collection. A typical specimen, with the point broken off, is shown in fig. 7 the full size. There are also a few implements in the collection identical in form with fig. 231 (p. 291) of Evans's *Ancient Stone Implements*, there doubtfully included among the borers. Dr Evans thinks it is possible they may have been intended and used for some totally different purpose, "such, for instance, as forming the tips of arrows, for which, from their symmetrical form, they are not ill adapted."²

Trimmed Flakes and Knives very numerous and of a great variety of forms. Many are worked on both edges, but the greater number are single edged. Three of the finest double-edged knives are here shown the actual size (figs. 8, 9, 10), together with a sectional view of each. The largest double-edged knife



Figs. 8, 9, 10. Flint knives found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

in the collection measures $2\frac{3}{4}$ inches in length, and there are several from 2 to $2\frac{1}{2}$ inches in length by 1 inch in breadth. There is also a fragment of the

¹ *Ancient Stone Implements*, p. 287.

² *Ibid.*, p. 290.

ground edge of a knife of discoidal form identical with those found in Aberdeenshire at Kintore and Turriff, in Kincardineshire at Fordoun, and in Lanarkshire, all now in the National Collection.¹ The Culbin fragment shows traces of having been in a fire.

Fig. 11 represents (actual size) a special type of implement, to which it is difficult to assign a precise name. The straight edge is very finely serrated like a saw, and the concavity at the top shows fine secondary chipping. The shoulder is also neatly rounded by fine and regular flaking. It may be only a hollow scraper.

Arrow and Spear Heads are very numerous, and present a great variety of forms, though unfortunately a large number are imperfect. Including frag-

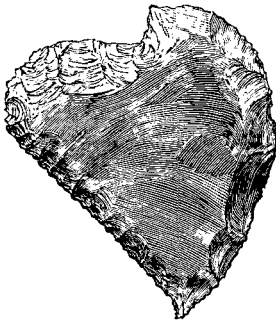


Fig. 11. Flint implement found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

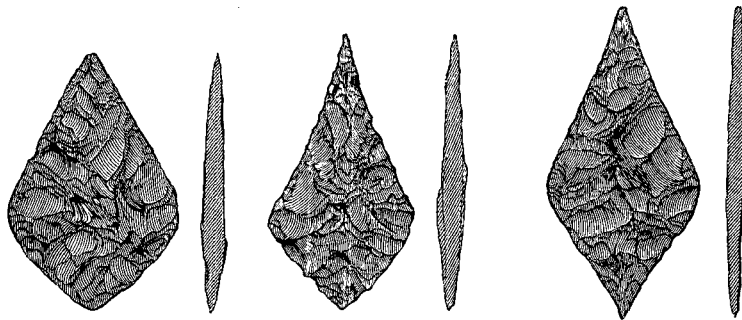


Fig. 12. Spear-head of flint found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

ments, there are in the National Museum upwards of one thousand specimens. Besides arrow and spear heads properly so called, there is a large number of implements from 1 inch to $1\frac{1}{2}$ inches in length, resembling arrow-heads of triangular and lozenge forms. They may be unfinished specimens. In size the two varieties, arrow and spear heads, vary from $\frac{1}{2}$ inch in length by the same in breadth to $2\frac{1}{2}$ inches in length by $1\frac{1}{4}$ inches in breadth, both extremes being found among the type with barbs and centre stem. A very fine specimen of leaf-shaped spear-head is shown the full size in fig. 12. It is formed of greyish-

¹ *Proc. Soc. Ant. Scot.*, vol. xi. pp. 575-578; *Scotland in Pagan Times: Bronze and Stone Ages*, p. 370; *Ancient Stone Implements*, p. 306.

white flint, and is not more than $\frac{1}{8}$ inch in thickness. Three fine specimens of the same form and of almost the same size were found in a Stone Age cairn at Unstan, Orkney. Another, $2\frac{3}{8}$ inches in length, found in Inverness-shire, is in the National Collection. Specimens of almost lozenge form are fairly well represented in the collection, and are mostly well finished. Two fine specimens are shown the actual size in the accompanying figures (figs. 13, 14). The commonest form is that of fig. 13. The original of fig. 14 is more delicately finished and the forward edges are slightly concave. Three specimens of the lozenge-shaped arrow-heads measure respectively $\frac{1}{8}$ inch in length by $\frac{5}{8}$ inch in breadth, $\frac{7}{8}$ inch by $\frac{1}{6}$ inch, and $\frac{1}{5}$ inch by $\frac{1}{6}$ inch. The original of fig.



Figs. 13, 14. Arrow-heads of Lozenge Form found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

Fig. 15. Flint Arrow-head found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

15 differs but slightly from the last mentioned, in that the basal edges are also concave. This type is not very common from any part of Scotland, and there are only two other specimens in the collection from the Culbin Sands, one of which is only $\frac{3}{4}$ inch in length by $\frac{7}{16}$ inch in breadth. Of fusiform arrow-heads there are several, mostly neatly finished, and varying from 1 to $1\frac{1}{2}$ inch in length. One very fine specimen, large enough to be termed a spear-head, has originally been at least $2\frac{1}{2}$ inches in length, but $\frac{2}{3}$ of an inch are broken off one end. Of arrow-heads of lanceolate form there are only two or three specimens in the collection which can be classed as such.

Fig. 16 represents, the actual size, a very broad specimen of the leaf-shaped type of arrow-head, and is not common in Scotland. A second specimen of weathered flint measures $\frac{7}{8}$ inch either way. This type is sometimes difficult to distinguish from the triangular form of arrow-head with convex base, of which a typical specimen is shown the full size in fig. 17. This last type appears to be more frequent in the north-eastern counties than in any other part of Scotland.

The type of arrow-head of stemmed triangular form, with or without barbs, is the commonest in the collection. In length the specimens of this type rarely



Fig. 16. Leaf-shaped Arrow-head found on the Culbin Sands. (Scale, $\frac{1}{4}$.) Fig. 17. Triangular Arrow-head with Convex Base found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

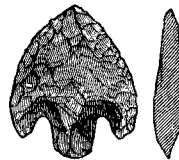
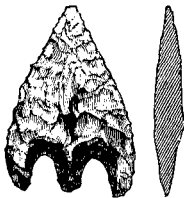
exceed $1\frac{1}{4}$ inch, with the exception of these which may be classed as spear-heads and reach to $2\frac{1}{2}$ inches. A typical specimen of the simplest form, without



Fig. 18. Triangular stemmed Arrow-head found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

Fig. 19. Arrow-head with slight barbs found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

barbs, is shown the actual size in fig. 18. Specimens of this type appear to be more common in France than in Britain. The original of fig. 19 has the barbs



Figs. 20, 21. Arrow-heads with Barbs and Centre Stem found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

very slightly formed, and an elongated body combined with convex sides and a square-ended stem. With the barbs slightly lengthened, this type merges into

that represented in fig. 20. In fig. 21 the length is still further reduced, and the sides assume a more convex appearance. The original of fig. 22 represents specimen of the highly elongated form which is not uncommon in Scotland, being met with principally in Wigtownshire.

The commonest form of arrow-head with barbs and centre stem is shown in fig. 23. The example figured is one of the finest of the series, the edges being serrated like a fine saw. The arrow-heads of this class are mostly under 1 inch in length. Another fine specimen, $1\frac{3}{4}$ inch in length, unfortunately



Fig. 22. Arrow-head of Elongated Form with Barbs and Stem found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

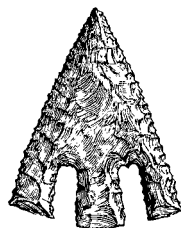
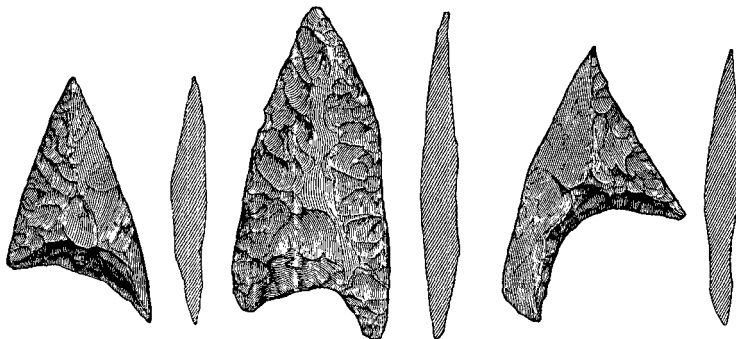


Fig. 23. Arrow-head with Barbs and Stem, found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

without the stem, is so finely serrated on each edge that there are sixteen notches within an inch. A very fine specimen of spear-head similar to one



Figs. 24, 25, 26. Arrow-heads of Unsymmetrical Form found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

found in Sherburn Wood and figured by Evans,¹ is $2\frac{1}{4}$ inches in length and $1\frac{1}{4}$ inch across the barbs.

¹ *Ancient Stone Implements*, p. 340.

In figs. 24, 25, 26 are shown three specimens of arrow-heads of peculiar and not common forms. A specimen of analogous form was found in a chambered cairn at Ormiegill, Caithness.¹ One similar to fig. 24, but with the barb more elongated, is in the collection from the Glenluce sands. Similar specimens have been found in England and a few are figured by Evans.² An analogous type of implement common in Ireland and presumed to be knives are figured and described by the Rev. G. R. Buick in an earlier volume of our *Proceedings*.³

URNS.

Fragments of several urns of Bronze Age types have been found on the Culbin Sands, but only two were found in pieces large enough to be put together. Of these two, one is $11\frac{1}{8}$ inches in height and 8 inches in diameter across the mouth, and is entirely devoid of ornament. The material is very coarse clay mixed with small stones. A quantity of burnt bones were found with it; and also a strike-a-light of flint $1\frac{3}{4}$ inch in length, $\frac{3}{4}$ inch in breadth, and $\frac{1}{2}$ inch in thickness. Similar implements have been found elsewhere in Scotland accompanying interments.⁴ The Culbin specimen has been subjected to the action of fire.

The second urn (fig. 27) is the tallest found in Scotland in the National Collection. It measures $16\frac{3}{4}$ inches in height by $11\frac{1}{2}$ inches across the mouth, and is ornamented on the outside with three horizontal mouldings, at distances of 3 inches, $5\frac{1}{4}$ inches, and $8\frac{1}{2}$ inches respectively from the lip. This urn is peculiar in having the lip pierced by two holes, each $\frac{3}{8}$ inch in diameter, and $1\frac{1}{2}$ inch apart, at a distance of 1 inch below the lip. A quantity of burnt bones were also found with this urn.

BRONZE IMPLEMENTS AND ORNAMENTS.

Axes.—Four flat axes are said to have been found on the sands. One of these, in the National Collection, measures 6 inches in length by $3\frac{1}{2}$ inches across the cutting end. A second specimen of similar size and form, imperfect at the cutting edge, is in the collection of the Rev. J. M'Ewan of Dyke. These two are said to have been found together by a man working with the forester of the estate. The other two axes have disappeared. In Mr M'Ewan's collection there is also the butt end of a broad dagger-blade with a raised mid-

¹ *Scotland in Pagan Times: Bronze and Stone Ages*, p. 246.

² *Op. cit.*, pp. 349–351.

³ *Proc. Soc. Ant. Scot.*, vol. x., New Series, pp. 51–61.

⁴ Flint strike-lights accompanied with lumps of iron pyrites have been found at Teindside Farm, Minto, Roxburghshire (*Proc. Soc. Ant. Scot.*, vol. viii, p. 137); at Flowerburn, Ross-shire (*Ibid.*, vol. vii., New Series, p. 356); and at Hoprig, Berwickshire (*Proc. Berwickshire Naturalists' Club*, vol. xii. p. 135).

rib along its length on both faces, and with four rivet-holes for attachment to the handle. It is said to have been found near the place marked "Dagger" on the map. The points of three small lance-heads and a part of a large spear-head are in the National Collection. A bronze harness-mounting similar

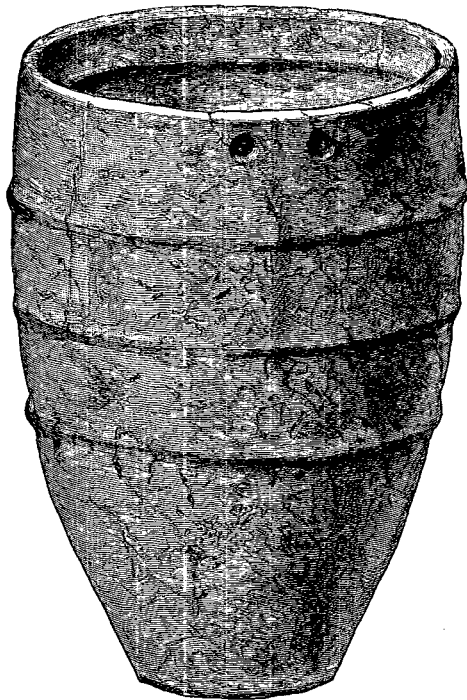


Fig. 27. Cinerary Urn found on the Culbin Sands.

to those found in a cairn in the parish of Towie, Aberdeenshire,¹ was recently found on the sands, and is now in Mr M'Ewan's collection.

Fig. 28 represents (full size) a bronze mounting of "Late Celtic" type, and

¹ *Proc. Soc. Ant. Scot.*, vol. iii., New Series, p. 321, and *Scotland in Pagan Times: Iron Age*, p. 122. See also Lindenschmidt's *Alterthümer unserer heidnischen Vorzeit*, Bd. i. heft ii. taf. v. figs. 1 and 2. These mountings appear to have been attached to the driving collars of horses, and the reins passed through them to guide the animal.

fig. 29 a small pair of bronze tweezers similar in form and size to others found in England in association with Roman remains. A very fine bronze spiral



Fig. 28. "Late Celtic" Bronze Mounting found on the Culbin Sands. (Scale, $\frac{1}{4}$.)



Fig. 29. Bronze Tweezers found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

armlet found among the sandhills in the early part of this century, preserved at Altyre, is shown in fig. 30.

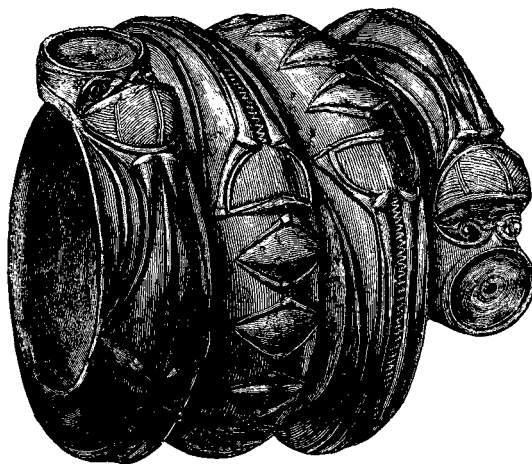


Fig. 30. Bronze Armlet found on the Culbin Sands.

Three imperfect fibulæ of early Iron Age types are preserved in the National Collection. Similar fibulæ were found in the crannog at Lochlee.¹

¹ *Ancient Scottish Lake Dwellings*, p. 129.

Brooches.—There are a considerable number of brooches, mostly of bronze or brass, one of silver, and one of pewter. The silver brooch measures $1\frac{1}{8}$ inch in diameter and is inscribed on the upper face “✠IESVS NA.” The pewter brooch measures $1\frac{3}{8}$ inch across, and is ornamented with small projecting bosses on the upper face and standing out from the edge. The pin of this specimen is of iron. The brooches of bronze or brass are mostly of the common ring form and vary in size from $\frac{5}{8}$ inch to 2 inches in diameter. A few are without pins. One brooch of the ordinary Highland form, 2 inches in diameter, is ornamented

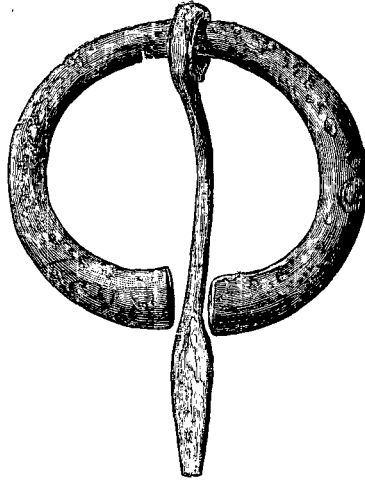


Fig. 31. Bronze Penannular Brooch found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

with a kind of foliageous scroll work. A larger one, $2\frac{1}{2}$ inches in diameter, is ornamented with an incised star pattern of fifteen points, the intermediate spaces being filled in with hatched lines. The bronze brooch, shown the full size in fig. 31, is the most perfect in the collection and is of an early Iron Age type. There is also a Luckenbooth brooch in the form of a crowned heart, and another small one of octagonal form. A considerable number of pins of bronze brooches are also in the collection, but they do not appear to belong to any of the brooches mentioned above.

Finger-rings.—There are several finger-rings of bronze or brass and two of lead in the collection, but with the exception of the one here figured, the actual size (fig. 32), they are all comparatively modern. It appears to be of bronze, and is $\frac{7}{8}$ inch in diameter. The two free ends terminate in rude re-

presentations of animals' heads. Two similar spiral bronze finger-rings were found in a brooch at Eriboll, Sutherlandshire.¹ A third example, of three turns, found with a penannular brooch at Granton, near Edinburgh, is figured by Wilson.² A silver ring of same type was in the hoard of silver objects found at Norrie's Law, Largo,³ and two of gold occurred among the relics found in the crannog at Buston, Ayrshire.⁴

Pins.—The pin of "Late Celtic" type shown the actual size in fig. 33 is unfortunately imperfect. In all probability the three projecting sockets ranged along the top were filled with coloured enamel. A similar pin, of slightly larger size, with traces of red and green enamel, was found in the parish of Urquhart, Elginshire, and is now in the National Collection.⁵ Two similar pins of silver of a larger size, and the head and part of the prong of a third of smaller size, occurred in the hoard found at Norrie's Law already referred to.

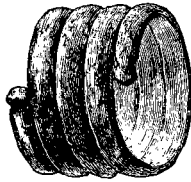


Fig. 32. Spiral Finger-ring of Bronze found on the Culbin Sands. (Scale, $\frac{1}{4}$.)



Fig. 33. Enamelled Pin of "Late Celtic" type found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

Another pin, $4\frac{1}{4}$ inches in length, has a movable ring head $\frac{1}{8}$ inch in diameter. Two others, 4 inches and $4\frac{1}{4}$ inches in length, have spherical heads, and another, $3\frac{3}{8}$ inches in length, has the head flattened out to a lozenge form. Four small imperfect pins have the heads formed of two divergent spirals similar to those found in the Lake Dwelling at Peschiera, Italy, and elsewhere on the Continent.

Rivets or Fasteners.—These objects are very numerous in the collection, and appear to have been used for mending dishes and caldrons of thin sheet bronze. There are several fragments of thin sheet metal in the Museum from the same locality, which are pierced with one or more of these rivets. Two perfect specimens of rivets are shown in fig. 34, one "open" and the other "closed."

Needles and Pins are also numerous. The needles are nearly all made of thin sheet bronze rolled together in the form of a tube. A few of the pins are

¹ *Archæologia Scotica*, vol. v. pl. xvi. p. 109.

² *Prehistoric Annals of Scotland*, vol. i. p. 474.

³ *Proc. Soc. Ant. Scot.*, vol. vi., New Series, p. 246.

⁴ *Ancient Scottish Lake Dwellings*, p. 229.

⁵ *Proc. Soc. Ant. Scot.*, vol. x. p. 359.

formed in the same way, but the greater number are made of one piece of wire, with another piece twisted round one end of it. *Points* of laces are also numerous, and many have a fragment of lace-cord still adhering to them.¹

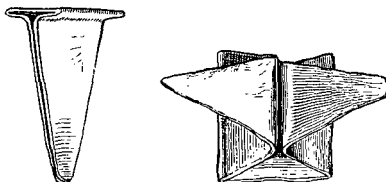


Fig. 34. Two Bronze Rivets found on the Culbin Sands. (Scale, †.)

Miscellaneous.—The remaining small objects of bronze or brass of comparatively modern origin include the fragment of brass chain shown in fig. 35,



Fig. 35. Portion of Brass Chain found on the Culbin Sands. (Scale, †.)

buckles of various forms, clasps, buttons, small loops of wire, clippings of thin sheet metal, “runners” and droppings, slag, &c.

BEADS, &c.

Beads, apart from those of comparatively modern origin, are not numerous, but are nevertheless of great interest. Fig. 36 represents, the actual size, a flattish triangular bead of dark-coloured vitreous paste inlaid with enamel spirals of a greenish-yellow colour. The three corners of the bead are also pointed with small drops of greenish transparent glass paste. There are also seven portions of beads of the same material, but of slightly different form, representing seven different specimens.

Besides those from the Culbin Sands, there are other eighteen specimens of this class of bead found in various parts of Scotland in the National Museum. One of these (imperfect) was found in the Broch of Bowermadden, Caithness,² and another accompanied a Bronze Age interment at Eddertoun, Ross-shire.³

¹ Comp. Shakespeare, “Henry IV.” part i. act ii. scene iv. 238. In the Glossary to the Globe edition of Shakespeare the word is explained as follows: “Point, a lace furnished with a tag by which the breeches were held up.”

² *Scotland in Pagan Times: Iron Age*, p. 233.

³ *Proc. Soc. Ant. Scot.*, vol. v. pl. xxi. p. 313.

The remaining beads were found during digging operations, turned up by the plough, or found on the surface.

A half of a bead, $\frac{1}{4}$ inch in diameter, is formed of four threads of vitreous paste of blue, white, red, and yellow colour respectively, twisted together like a cord. The half of another bead, $\frac{5}{8}$ inch in diameter, is of blue glass with faint irregular streaks of a yellow-green colour extending to $\frac{1}{16}$ of an inch below the surface. A portion of another is of white glass with yellow vitreous paste fused or "run" through its mass. Two beads of blue vitreous paste appear to have been spoiled in their manufacture. Probably the most interesting of all are four pieces of parti-coloured glass slag. One piece, 2 inches in length by $\frac{1}{2}$ inch in thickness, is coloured blue, yellow, and green. The second has a dark blue ground with a portion of paste of a bright turquoise colour on one side. The third has a pale green ground, and on one side is a fused bead of white paste with yellow spirals all run into one mass. The fourth specimen is in the form of an irregular-shaped ring of white transparent paste.



Fig. 36. Bead of Vitreous Paste with Yellow Spirals found on the Culbin Sands. (Scale, $\frac{1}{4}$.)



Fig. 37. Bead of greenish Vitreous Paste found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

Another and rare type of bead of greenish vitreous paste is shown the full size in fig. 37. Eight perfect specimens and a few fragments are of this form. The largest resembles six globular beads united together, and the smallest two united together. The only other recorded bead of this type in Scotland accompanied an urn of Bronze Age type found at Mill of Marcus, near Brechin, and is described and figured in the last volume of *Proceedings*.¹

There is also a small portion of a bead of light blue vitreous paste of the rare star pattern, similar to four specimens found on the Glenluce Sands. The Culbin fragment shows only three points or rays. Two of those found at Glenluce² are perfect and have nine rays each, the third is of irregular shape and has only five rays, the fourth is a half only and shows five rays. Another perfect specimen of six rays was found in Blair-Drummond Moss, Perthshire,

¹ *Proc. Soc. Ant. Scot.*, vol. xii., New Series, p. 471. By an oversight the paragraph relating to this bead was inserted in the wrong place in Mr Hutcheson's paper. It should have been placed at the end of the paragraph, before the description of the second urn.

² *Ibid.*, vol. ii., New Series, p. 141.

and is now preserved at Blair-Drummond House. A few have been found in Ireland.¹

A collection of upwards of two hundred and fifty beads of a uniform dull yellowish colour, found in one spot near the base of one of the sandhills, was exhibited to the Society in 1871; and a portion numbering about one hundred were presented to the Museum. They vary slightly in size from $\frac{1}{4}$ to $\frac{3}{8}$ inch in diameter. An analysis of the beads by Dr Stevenson Macadam showed that "the beads were composed of glass coloured with oxide of iron." Beads of precisely the same form and size, but of scarlet colour, were found in Arrieolland Crannog, and have been figured.²

JET.

The objects of jet number over two hundred, and consist principally of portions of large rings or bracelets, a number of beads mostly of rude form, from $\frac{3}{16}$ inch to $\frac{7}{8}$ inch in diameter, and a few unworked fragments. A number of

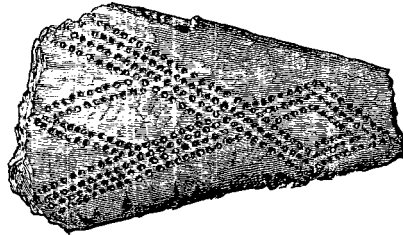


Fig. 38. Terminal Plate of Necklace of Jet found on the Culbin Sands. (Scale, $\frac{1}{4}$.)

the fragments of rings have been pierced at one end for suspension. The most interesting object of jet, however, is the terminal plate of a necklace of Bronze Age type shown in the accompanying figure (fig. 38).

GLASS.

The objects of glass are very few, with the exception of beads. One small fragment of the rim and side of a bowl or cup of light-coloured glass, originally about 5 or 6 inches in diameter, is ornamented horizontally by two bands of white vitreous paste laid over the outer surface. A fragment of the rim of another vessel is hollowed in the same manner as the fragments found in the recently excavated brooch at Torwoodlee, near Galashiels. A third fragment of light-coloured glass is ornamented with three thread-like ribs of blue glass on the outer surface.

¹ *Journal Royal Society of Antiquaries of Ireland*, vol. i., fifth series, p. 361.

² *Proc. Soc. Ant. Scot.*, vol. xi., New Series, p. 228.

A quantity of blue, green, brown, and white glass beads are also in the collection, but are evidently of no great antiquity.

IRON.

The articles of iron are mostly in a bad state of preservation. They consist of fish-hooks, mostly about $2\frac{1}{2}$ and 3 inches in length, and differing little from those of the present day. A few horse-shoes of a peculiar form, a key, the points of three mediæval arrows, and a small portion of the blade of a broad double-edged sword are also among the objects found. There is also a padlock of early form similar to one figured by Genl. Pitt-Rivers.¹

LEAD.

Lead is represented by a considerable quantity of small lumps, run portions, and slag, two weights for fish-lines, three rude whorl-like objects, and the whorl already described.

¹ *Primitive Locks and Keys*, pl. v. No. 34c.