

## VI.—THE GOLD ORNAMENTS FROM COOPER'S HILL, ALNWICK.

BY HERBERT MARYON.

[Read on 26th October 1938.]

The story I am going to tell you began nearly ninety years ago, when some labourers, cutting through Cooper's Hill, near the railway station at Alnwick, found some pieces of gold. Accounts of the find appear as follows:—

1859. Mar. 2. *Arch. Ael.*<sup>2</sup> iv, 36. Dr. E. Charlton—

We believe that the amount of gold found on this occasion was but small. About ten years ago, during the excavations for the branch line to Alnwick, some navigators observed a glittering object among the soil they were casting up. We have obtained most imperfect accounts of what they really found. Some have said that a grave was opened, and that it contained urns; others that a metal spear or sword handle was discovered, to which the gold was attached. At all events a scramble immediately took place for the prize, in which (some say) the urn was broken; but the confused accounts that have been given me are not to be relied upon. The gold in question consists of thin plates of various shapes, and of a piece of gold wire.

(Nos. 1 to 5 are the obvious remains of the reconstructed penannular, with the addition of the wire, and possibly the triangular ended piece.)

Nos. 6 have evidently been destined for a different object, the form of which we cannot conjecture. They consist of very thin plates of gold, rudely hammered together at the angles, and ornamented with a circular stamp of concentric rings. The object to which these gold plates were attached must have been angular in form, as in one or two of the plates there are angles produced like the angles of a casket. The line of the ornaments, however, is more circular, as if they had been imprinted on the rim of a cup.

These plates of gold were much crushed when they came into our possession; possibly they had been detached with violence from the object they ornamented. Whether that object is still in existence we know not.

(Objects presented by Dr. Charlton at same meeting.)

1866. Tate's *History of Alnwick*, vol. 1, pp. 15-17, and illustrations.

Two golden penannular ornaments were found in 1850, in Cooper's Hill, near to the Alnwick railway station, when this hill was cut through during the formation of the branch line. Unfortunately, these very rare and valuable relics were broken by the workmen and sold to an ironmonger; but Dr. Charlton of Newcastle bought the fragments and placed them in the museum of the Newcastle Antiquarian Society.

The fragments consist of thin ringed plates,  $1\frac{1}{2}$  and  $1\frac{3}{4}$  inches in diameter, a narrow plate  $\frac{1}{4}$  of an inch wide and  $2\frac{1}{2}$  inches long, and fine golden wire. A restored figure of one of these rings will show its peculiar shape; it is ornamented with very delicate and well formed impressions of concentric circles which had been made by a stamp, each series consisting of twelve, and being about  $\frac{1}{4}$  of an inch in diameter. The golden wire had been used along the outer edge of the ring, where the plates join, to give strength to the ornament and keep it in shape.

The other ring was of the same form, but plain. . . .

The association, however, of these golden ornaments with other relics proves their age; for they were found at Alnwick along with a socketed and ringed bronze celt, within an urn, having the zigzag scorings characteristic of Ancient British pottery.

The descriptions of the gold plates given in these reports are not very accurate, for the measurements and other particulars differ from those of the fragments which came into the society's possession. Mr. Cowen tells me that when he first saw the ornaments "they were nothing more than a handful of scraps." After they had been considered by the authorities of some of our national museums, they were put together in the form with which we are familiar, as a hair-ring and as a bulla. I believe that you will agree with me that the restoration was not particularly successful. It left both ornaments incomplete; and the restoration of the bulla was quite unconvincing.

A few months ago I obtained Mr. Cowen's permission

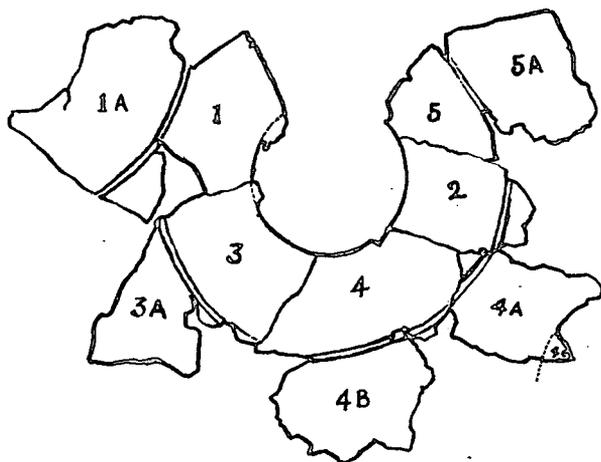
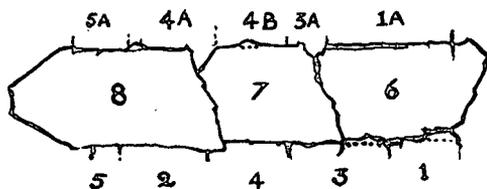
to examine the ornaments, promising him that I would do nothing to them without his permission. I photographed the so-called bulla with a view to cutting up the photograph and trying to fit the pieces together in a more satisfactory manner. However, I soon found that this was going to be a hopeless task, for the pieces of gold were so crumpled and folded that it was impossible to tell what their actual shape was unless they were removed from their wooden mount, and the creases smoothed out.

With Mr. Cowen's permission I removed the pins by which the plates were fastened down, and began the long and delicate task of straightening out the folds. The gold was very thin, only a tenth of a millimetre, or three to four thousandths of an inch, in thickness, and it was so torn and fragile that the work was very slow. In many places the gold was creased together very tightly, and there were about twenty or thirty little flaps which had been folded down out of sight: these all had to be straightened out.

At last that was done, and I was able to begin the interesting task of seeing how the pieces might go together. Before removing them from their wooden mount I had numbered them in consecutive order 1.2.3.4.5. I soon found that they fitted together better in the order 1.3.4.2.5. But they did not form a complete circle, and from the spacing out of the circular ornaments I could see that they never had formed a complete circle. There was too much room for one more ornament, but not enough for two. However, if one brought the edges of nos. 1 and 5 together, the ornamented plates would take the form of a truncated cone.

I considered whether I had ever seen a gold ornament decorated with a series of concentric circles like these, on a truncated cone. And I remembered that in the collection of the Royal Irish Academy, at Dublin, there were four little circular boxes of gold of just the right size and shape. No others are known in any collection. Had we here in Newcastle a fifth?

You will see that attached to each of the ornamented pieces, those numbered 1.3.4.2.5, there are other pieces numbered 1A, 3A, 4A, 2A, 5A. Would these form the plain side of the box? If so they ought to fit together. I considered them more closely, and then made the discovery



that they could not possibly form the side of such a box, for *their edges were curved downwards*. But the side of a box such as we have seen must necessarily be a straight strip of metal. So the ornament could not have been a box after all. What could it be? I then looked to see if the edge of 1A would fit against the edge of 3A—and I found

that it would. Also that 3A fitted against 4B, and so on all round the circle. Therefore these undecorated plates, like the decorated ones, formed part of a truncated cone. I had now two truncated cones, attached together by their edges. But I could not be certain whether the plates 1 and 5, and 1A and 5A had ever joined together. Their edges were too broken to admit of certainty.

If they had joined, the ornament might well have been the pommel of a sword of a type well known in Scandinavia and Hungary. But one had to be cautious about such a reconstruction. No such sword pommel had ever been found in this country. It was necessary to make sure that no other reconstruction was possible.

I next considered pieces 6, 7 and 8. These, I found, fitted together quite well. They were all the same width, and had similar upturned edges. Between 7 and 8 I noticed that there was a little triangular piece missing. The gap measured about 3 millimetres ( $\frac{1}{8}$  inch) aside. Then I remembered that on plate 4A there was a little triangular projecting piece of about that size. Could there be any connection? I measured the distance from the gap to where the triangular end of the strip turned upwards. It was 16 millimetres. Now if the distance between the little projecting flap on 4A and the corner of 5A proved to be identical, then there would be a strong presumption that the little flap originally filled the gap between plates 7 and 8. The measurement proved to be identical, 16 millimetres.

By laying the respective plates in position against each other a long series of coincidences proved with absolute certainty that originally they had all been fastened together. But what would they make?

Here is the reconstructed ornament (plate VI). With the exception of the few tiny pieces of gold which are missing, all the fragments and all their edges come together perfectly. There can be no doubt whatever as to the correctness of the reconstruction.

The ring is hollow, triangular in section, 40 millimetres

in diameter (just over  $1\frac{1}{2}$  inches). The thickness at the middle is 13 millimetres. The gold is alloyed with a small amount of copper, and probably a little silver also. The gold plates weigh 1.382 grains. The decoration consists of eight circular ornaments produced by a punch or stamp. Each ornament shows eleven concentric rings and a central boss. The tool was probably made by scratching a series of concentric rings on the end of a rod about 8 millimetres in diameter. The ornaments are spaced 9 millimetres apart, centre to centre. The outer edges of the cones overlap each other, and they are fastened together with solder. This soldering was no inconsiderable feat with gold as thin as this. Indeed, the ornament would probably have proved too fragile for safe usage, unless it were filled with some substance, such as resin, to save it from crushing. In the reconstruction I made no attempt to resolder it. Instead, I mounted it on a ring of boxwood coated with gesso, and fastened on the gold plates with cellulose cement.

We have here a hair ornament of a kind unparalleled elsewhere. There is no other example known of a hair-ring decorated in this fashion, or one constructed of such thin gold.

We should remember that all hair-rings of whatever type are provided with a gap measuring 3 or 4 millimetres across. The purpose of this gap is clear. A strand of hair from a plait would be forced through it, and, expanding, would hold the ornament firmly in place. The hair-ring probably hung just in front of the ear, the plait being carried round behind the head.

Let us now consider the various types of hair-ring to be found in our museums.

Rings of the first type have sometimes been called "ring-money." Many of them are but a plain bar of gold bent round into an almost complete circle, or a bar slightly tapered at each end, bent in a similar fashion. Now, such a ring of gold represented wealth in an easily portable form. A larger ring could be worn as a bracelet. Either

could be thought of as an ornament, but one which at any time could be exchanged for goods or services.

The next type of ring has a core of lead or copper which is covered with a thin sheet of gold. This type evidently represents an attempt on the part of the smith to produce a showy article at a cheaper price. The sheet gold was folded round the core before the rod was bent round into a ring. Because the gold was so thin it was generally very much crumpled along the inner side of the ring. But this irregularity would not show much when the ring was in use. However well the ring appeared then, no one who held such a ring in his hand could possibly be deceived as to its method of construction: the joint is so clearly visible. These rings are not ancient forgeries as some early writers believed, but they were cheaper than the solid gold specimens.

The third type of hair-ring is of similar construction to those already described, either of solid gold or of gold sheet with a core of some cheaper material. The surface of these rings, instead of being left plain, is decorated with a spiral band of inlay, with from eight to upwards of twenty turns. The inlay seems sometimes to be a kind of neillo, for traces of sulphur and of lead have been found in the dark coloured band. But in other examples the inlay is of silver—probably silver solder, run in to fill the depressed spiral band. It is curious that the ancient Irish craftsman should decorate gold with silver. But we must remember that silver was a rarer metal than gold in ancient Ireland.

The fourth type of hair-ring is hollow, and triangular in section. Each of its conical surfaces is composed of a number of wires laid parallel to each other, and soldered together. In an example now in the Taunton museum there are twenty parallel gold wires on each side. Yet the width of each face is only 6 millimetres.

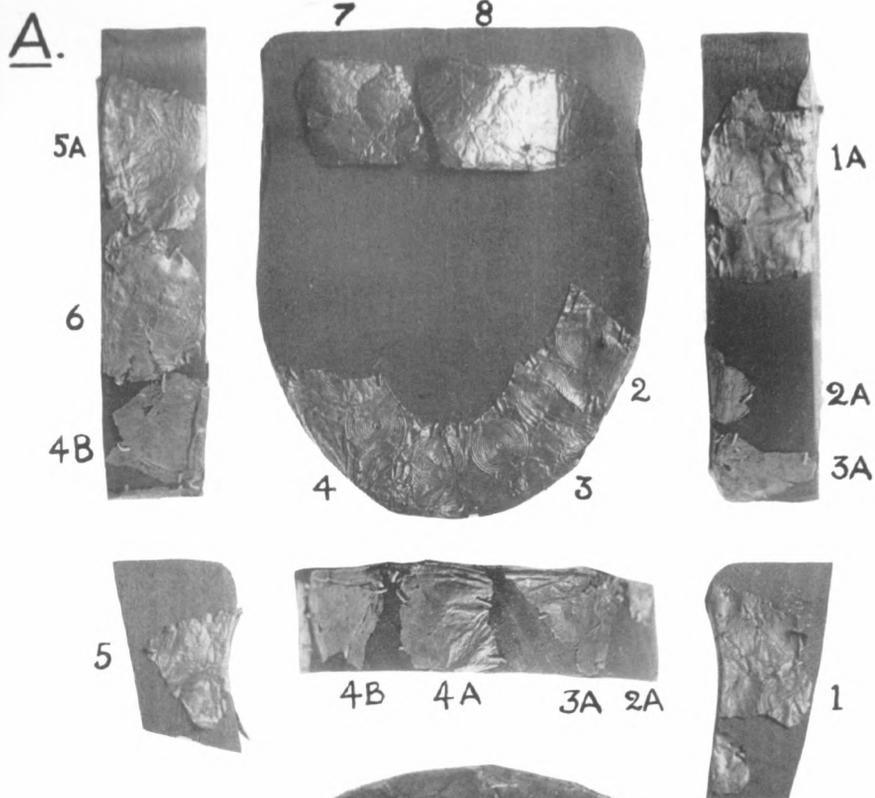
The fifth type also is hollow and triangular in section. It is represented in the Black Gate museum by the second

ornament found at Cooper's Hill, Alnwick. The gold wire which accompanies it should be soldered round its outer edge. In some examples of this type the outer edges of the two conical plates are bent slightly away from each other, and a thin tube, open at one side, is slipped over the divergent edges, thus holding the two cones firmly together.

The sixth type is similar in construction to the last, but the plain surface of the cones is decorated with a series of concentric circles produced with a tracer (repoussé tool).

Rings of the seventh type also are constructed of two cones fastened together face to face. But the decoration consists now in a series of concentric circles of dots, put in with a pair of compasses. The work was done from the back of the sheet, and is of astonishing fineness. Indeed, there are two rings at Dublin in which there are five concentric rings of repoussé dots in the space of one millimetre. There are about fifty rows of dots in a band 10 millimetres wide. The lines of dots are therefore less than  $1/120$ th of an inch apart. The work is so fine that it appears as a kind of bloom on the surface of the gold, like the Etruscan gold grainwork. Technically these Irish rings exhibit workmanship which is more delicate than that on any other ornaments yet discovered in northern or western Europe.

The only ring of the eighth type yet discovered is that which forms the subject of this paper. I should date it in the late bronze age.



B.



THE ALNWICK GOLD HAIR-RING.  
(N.B.—The lower illustration is on a larger scale).

