

PROCEEDINGS

OF THE

Cambridge Antiquarian Society,

22 OCT. 1906—27 MAY 1907.

WITH

Communications

MADE TO THE SOCIETY.

No. XLVIII.

BEING No. 1 OF THE TWELFTH VOLUME.

(SIXTH VOLUME OF THE NEW SERIES.)



Cambridge:

DEIGHTON, BELL & CO.; BOWES & BOWES.

LONDON: G. BELL AND SONS.

1908

Price Five Shillings net.

Monday, 29 April 1907.

The Reverend W. G. SEARLE, M.A., President, in the Chair.

The Baron VON HÜGEL, M.A., read the following paper:—

SOME NOTES ON THE GOLD ARMILLA FOUND IN GRUNTY FEN, TOGETHER WITH MR ISAAC DECK'S ORIGINAL ACCOUNT OF ITS DISCOVERY IN 1844.

[The substance of this paper only was read.]

Over sixty years ago a remarkable find was made in the neighbourhood of Cambridge, consisting of a gold armilla and some bronze celts. These objects, shortly after their discovery, were acquired by the Cambridge Antiquarian Society, but no details of the find have been recorded in its publications, beyond a note as to the discovery of the armilla (the celts are not mentioned), and of its purchase by subscription in 1845, the year following its discovery. Further mention of the armilla is to be found in Professor Babington's *Ancient Cambridgeshire*, issued 1845, with the additional information that "several palstaves are stated to have been found with it"; and in the second edition of this work, published 1883, a full enumeration of the find is given, viz.: "a gold armilla and three bronze palstaves." In 1846, the Rev. James Bulwer figured and described a gold torc, found that year on Bittering Common, Foulsham, Norfolk, which he says, judging from Mr Deck's description, resembled in all particulars the Grunty Fen example¹. Lastly, the late Sir Augustus W. Franks and Mr Samuel Birch refer to this armilla in their respective papers "Gold torques found near Romsey, Hants²" and "The

¹ *Norfolk Archaeology*, Vol. i. p. 233.

² *Archaeologia*, Vol. xxxix. p. 505.

For Isaac Deck read Isaiah Deck throughout.

Torc of the Celts¹," but by the latter it is erroneously stated to have been found at Trumpington.

These meagre data, in which some discrepancies and inaccuracies occur, are the sole records of the find which I can trace in any archaeological publications². This dearth of information is all the more surprising, seeing that a long and circumstantial account of the discovery was not only written at the time, by the late Mr Isaac Deck, the well-known Cambridge chemist and antiquary, but was actually read by him at a meeting of the Cambridge Society in the spring of 1845. This paper, which had been completely lost sight of, has quite recently been brought to light by my friend, Mr John E. Foster, the present Secretary of the Society, as for some now unaccountable reason it was never published by the Society, but was preserved by being reported *in extenso* in the *Cambridge Chronicle and Journal* of March 1, 1845.

Besides describing the actual finding of the objects, Mr Deck offers some interesting speculations as to the possible origin and age of the armilla. Such speculations, though fresh at the time, need not be given here, as sixty years of archaeological investigations have brought to light many new facts bearing on these questions: but his account of the actual discovery and his excellent description of the site of the find, I here append in his own words. These notes are all the more worth chronicling, seeing that the archaeological interest of the find lies, not so much in the value of the beautiful gold ornament which now enriches the University Collection, as in the evidence of its age which the associated bronze celts have afforded.

Mr Deck's account is as follows:

"A portion of Grunty-fen, twelve miles N.E. of Cambridge, in the parish of Haddenham, is by right of soil appropriated to the poor of the several parishes in the vicinity, for the purpose of digging turf. A poor man pursuing this employment [in August 1844] after digging about three feet through

¹ *The Archaeological Journal*, Vol. II. p. 368; Vol. III. p. 27.

² Particulars of the Grunty Fen find, which I sent Count Olivier Costa de Beauregard before I had seen Mr Deck's account, are to be found in his paper on the Saint-Leu d'Esserent Torques (Caen, 1906):

the usual peat soil, came upon three very perfect bronze celts, lying contiguous to each other, in form nothing materially differing from those usually found in the fens of this district. Twelve inches below where the celts were deposited, and rebounding with a spring that threw up to the surprise of the labourer a portion of soil, appeared this gold ornament, an helix of 4 coils $3\frac{1}{4}$ inches diameter, in the form of an armilla.... The metal is pure gold and, in taking the specific gravity there does not appear to be a particle of alloy; and to this purity of the metal is to be attributed the beautiful state of preservation in which it is now seen, nothing beyond removing the peat soil by washing having been done to it since it was found. No trace of corrosion during the centuries of its deposit can be observed, and so perfect is the metal, that I question if there is a diminution of three grains from its original weight. Its construction appears to have been from two pieces of gold plate being bent at acute angles, soldered together, and then twisted, which the ductility of the metal would readily admit. Thus was formed a spiral of four grooves.....

The basis of the extensive fens of Cambridge and Lincolnshire is the Kimmeridge and Oxford clays, the strata above which, constituting the original soil, is black gravel, and on this was found the torque, from which an interesting geological fact may be deduced and historical data arrived at, as to its probable age. Having accurately examined the locality, I am of opinion that the position in which this relic was found, once formed the bed of one of those various rivers of which traces to this day may be found, serving as outlets to the then deep morasses of the country. I am strengthened in this conclusion by the discovery some few years since of an ancient British boat, or canoe, formed by the rude process of excavating a large tree, the remains of which, yet in a perfect state, may be seen, and are well worthy of inspection, in the garden of the Rectory-house, at Haddenham¹. The canoe was embedded in the turf soil, about half a mile higher up the valley, in a direct line from where this antiquity was found, and as the original

¹ I have failed to trace this canoe which probably was allowed long since to fall into decay. A. v. H.

channel of the river is now choked up with a large accumulation of alluvial soil, the canoe offers evidence that at a remote period it was navigable. The celts found upon the same spot above the torque afford some data of inference, as they must have been deposited at a subsequent period, at an interval sufficient to form the growth of twelve inches of the subaqueous plant, *Sphagnum palustre* [*? Hypnum*], which here predominates and forms a large portion of the turf soil¹...

In respect to its form and the purpose to which it was applied it is probable, from the rarity at that period of such precious articles, that it might be used for various ornamental purposes, for which, from the ductility of the metal, it was well suited. The one figured and described in vol. xxvii, p. 400, of *Archaeologia* found on the estate of Sir Philip Egerton, in Cheshire, in 1831, and now in his possession, is exactly similar in pattern and size to that now exhibited, and is denominated a bracelet, and it is so figured in that excellent and useful work, *Smith's Dictionary of Antiquities*. It might have been used as such, but the position of the solid terminations militates against its being exclusively for that purpose. I consider that it was formed into its present shape to make it more convenient for secreting or conveyance, being certainly a more portable form than that of a girdle, for which it was evidently intended. The terminating hooks would thus form the necessary connecting link. What will give weight to this suggestion is, that the one now deposited in the British Museum, precisely in length, weight and pattern similar to the one now before you, is in the form of a girdle, and believed by Mr Hawkins and others to be such. It might likewise have been occasionally used as a female ornament for the hair. This idea was suggested by observations on the many beautiful head-ornaments in gold which I have recently examined in the British Museum, taken from the Etruscan tombs."

From Mr Deck's account we may safely assume that the

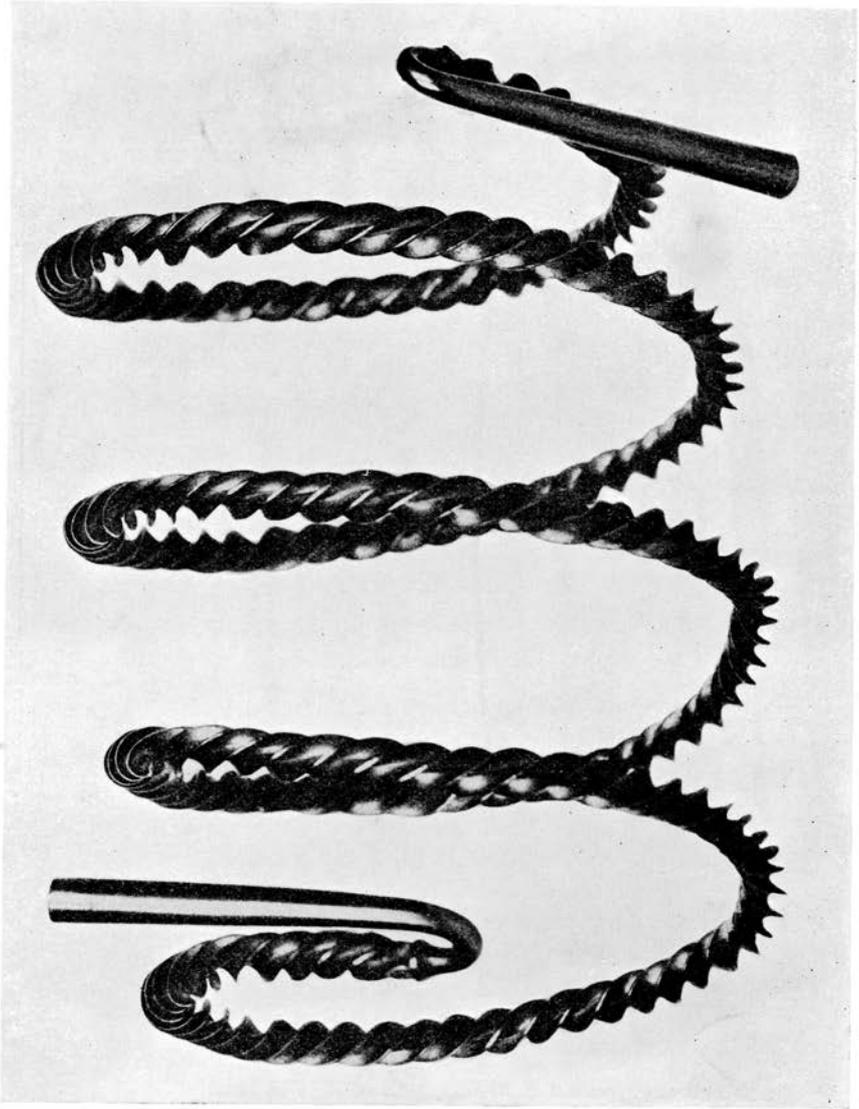
¹ The rate of growth of peat is very variable according to local environments, but it is not unfrequently as much as a foot in ten to twenty years, as has been proved by actual observation in France and elsewhere (see Geikie, *Text Book of Geology*, 4th edition, p. 608). A. v. H.

objects were buried at the same time and with some care: the armilla below, the three palstaves ranged above. Assuming then that a hole was dug and a clod of peat removed to make room for the disposal of the armilla, that this clod was replaced in the hole and that the celts were then laid on the top of the peat, the remaining cavity being filled in and levelled, we would not only satisfactorily account for the twelve inch "growth" of peat which was found to separate the gold from the bronzes, but for the rebound with which the armilla surprised the turf-digger, when he, with his spade, first relieved it of its superincumbent weight of peat. But the fact that palstaves were found *above* and *not below* the armilla is the point of greatest moment connected with the find.

So many of the prehistoric gold ornaments preserved in museums have no data of any sort attached, or form but the remnants of associated finds (the objects of lesser value having been discarded), that it is most satisfactory that this particular find should have been preserved in its integrity, and with such full particulars concerning its discovery.

This special form of ornament, one of the many varieties of the funicular torc, has a special interest as being characteristic of the British Islands. So much is this the case, that its distribution on the Continent appears to be strictly limited to the North-West extremity of France, for there, and there alone, out of the British Islands, have the few foreign gold ornaments of this type been found, and all the continental examples of gold gorgets of Irish type are likewise traceable to this one restricted area. Considering these facts Count Olivier Costa de Beauregard, the French archaeologist, who has made a special study of the prehistoric gold ornaments of his country, has recently expressed his opinion that all the French "*torques d'or a crochés tronçoniques*" were probably directly derived from our islands¹. In the same paper he gives a map shewing their distribution, and by a careful study of such bronze objects as were found associated with them, he is able to date these French-found torcs as belonging to the

¹ *Le Torque d'or de Saint-Leu d'Esserent (Oise)*. Congrès Archéologique de France. Caen, 1906.



Actual size

Gold armilla from Grunty Fen, Cambridgeshire, 1844.

second half of the Bronze Age, namely that of the socketed celts. To this period also, a number of our torcs may be assignable, but the Grunty Fen example, found as it was with three celts of the same definite type gives us a fixed point in relative chronology which some day may be estimated in years. At present it is hardly safe to say more than that the palstave belongs to the later Bronze Age, and that it and the socketed celt overlapped if they did not run concurrently. They are of the rarest occurrence in burial deposits, the latter being known from various finds to have lasted down to the very end of the Bronze Age. It is interesting to note that so well-developed a form of personal ornament should, for lack of data, so recently as 1860, be ascribed by experts to the 4th or 5th century after Christ¹.

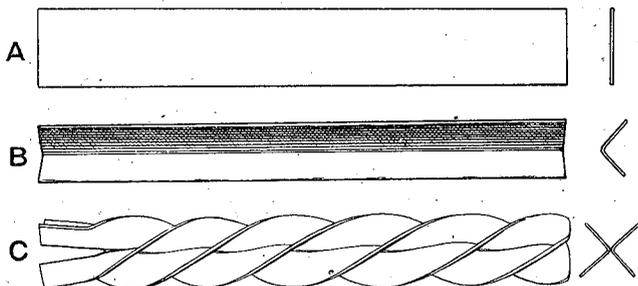
As to the manifold uses to which these gold torcs may have been put. To judge by their shape they were worn, either round the neck, pendant on the chest, or as a girdle round the waist, and the large hooks with which they are provided point to their having been primarily devised for such purposes. But in some cases, as in the Grunty Fen example, they have been adapted for use as armlets or anklets by being coiled spirally, in which instances the hooks can only be considered as ornamental terminals. The evolution of this conventionalised pattern of hook, from a purely utilitarian form of hook-fastening, remains still to be traced. Mr Deck and some later archaeologists have suggested that the same ornament may have been worn in all these various ways by being coiled or uncoiled at the pleasure of the owner. With the slimmer forms of torcs this may have been done, but to do so with a strand as stout, as is characteristic of the variety under consideration, would be no easy operation; indeed the ornament, if submitted to such a trial, would very soon lose all shape and beauty.

The figure of the armilla (Plate II.) shews all the details of its form, but the composite character of its funicular band,

¹ Samuel Birch (1845), *Archaeological Journal*, Vol. II. p. 379, quoted by A. W. Franks (1860), *Archaeologia*, Vol. xxxix. p. 506.

to which Mr Deck alludes in his paper, cannot be made clear without further illustration.

The process of manufacture was as follows: two ribbons of gold (fig. A), about 1140 mm. (45") long, 6 mm. wide, and $\frac{1}{2}$ mm. thick, were folded along the middle to a right angle (fig. B), attached (? with some kind of resinous flux), apex to apex, and were then twisted together into the finished strand (fig. C), resembling a left-handed screw of four threads with cruciform section. It may be observed that the spirals of the armilla itself follow the trend of the twist, and are accordingly left-handed, which, by examination of specimens in the



British Museum and elsewhere, appears to have been the general rule¹. With very few exceptions the torcs made of bronze follow the same rule², though when twisted up into armillae they occasionally shew right-handed spirals, such examples possibly forming one of a pair of armllets. The models from which the above figures were taken are made of copper. These metal bands, though so much larger and stouter than those of which the armilla is composed, were found to twist quite readily and without being subjected to heat, one end being fixed in a heavy metal plate during the process of twisting.

¹ In the East right-handed screws are a comparatively recent European introduction.

² A bronze torc from West Buckland figured by Evans (*Bronze Implements*, fig. 468, p. 377) shews a right-handed twist. In the heavy Danish type of bronze torcs, to produce a symmetrical decoration, both right- and left-handed screw-twists sometimes occur on one and the same example.



Fig. 1

Fig. 2

Fig. 3

Reduced scale

Bronze celts found with gold armilla.
Grunty Fen, Cambridgeshire, 1844.

Description of the objects :

Armilla (Plate II.): Of the funicular four-flanged variety, the massive hook-terminals of the truncated-cone pattern, shewing a basal bead fashioned of two plates as above described, and twisted into three complete and two incomplete left-handed spirals, of about 80 mm. in diameter, which, inclusive of the hooks, would, if straightened, measure 1208 mm. (or 47·5").

Dimensions :

Band : length 1079 mm., diameter 7 mm.

Hooks: length (round bend) 63 mm. and 66 mm. respectively.

„ diameter (of neck) 4 mm., (of end) 6 mm.

Weight: 5 oz., 7·20 dwts.

Palstaves (Plate III.): Three one-looped examples of similar form, but representative of two distinct varieties of decoration, viz. :

Two (figs. 1 and 2), of similar design, bear on either face, below the stop ridge, a triangular depression, through which passes a vertical rib to the level of the cutting edge, and very faint marginal beads give the face a double-fluted appearance. This effect is more noticeable in the better-cast example (fig. 1), which is the larger and the more massive of the two. Dimensions: 167 mm. × 47 mm., and 165 mm. × 43 mm. respectively.

One (fig. 3) bears on either face a single, stout, vertical rib, which, with the sharp slope towards either side, produces a ridged appearance.

Dimensions: 178 mm. × 49 mm.

The examination of the Grunty Fen armilla led me to make some further enquiry as to the construction of other examples. Little attention appears to have been given to this question if one may judge by the very little information which has been published. I can only find the two following notes on the subject, but they are sufficient to prove that the method adopted in fashioning the Grunty Fen armilla was not the sole method of making these ornaments.

In 1851 Colonel J. A. Lloyd sent a letter to the Society of Antiquaries on "the probable method adopted by the ancient Druidical workmen, in the formation of their torques"¹; and in 1862 his observations were confirmed by Wilde who gives a similar account of the construction of Irish torcs, viz.: that "In the more complex forms, two or more flat strips

¹ *Proc. Soc. of Ant.* Vol. II. 1853, p. 136.

of metal, joined at their inner edges, are twisted together spirally¹."

These statements have now been kindly verified for me by Messrs Edmond Johnson of Dublin, to whom, as the producers of the beautiful replicas of ancient gold ornaments preserved in Dublin, I applied for fuller information. They state that the variety of torc in question "is made by joining two narrow strips of plate to one double the width, forming four complete right-angles, and then twisting (examples: the two breast torcs² from Tara, Co. Meath, figured in Messrs Johnson's Catalogue of reproductions, p. 36)." But some Irish examples are not of composite make, and Mr Reginald A. Smith informs me that the Irish torc in the British Museum is "moulded, in imitation of the composite specimens." Through his courtesy I have also received further evidence that the Grunty Fen armilla is not an isolated variant from a general rule. The well-known gold neck-torc with ring-money attached, from Boyton, Suffolk³, is of identical make, and another, a three-flanged example, from Ashill, Norfolk, likewise in the National Collection, *appears* to be of similar construction. Moreover the torc from Bittering Common, Norfolk, mentioned at the beginning of this paper, is described by the Rev. James Bulwer as "formed by bending two flat bars of gold lengthwise."

We thus find that this particular form of funicular torc was made in three different ways :

The East Anglian examples of *two bent* plates, thus \times ; and the Irish of *three flat* plates, thus \times ; or *moulded*.

That both methods of making composite torcs should have been in vogue in one and the same district, at least contemporaneously, seems highly improbable seeing that the use of a pair of bent plates is a distinct advance: but the data which

¹ W. K. Wilde: *Cat. of the Antiquities of Gold in the Museum of the Royal Irish Academy*, Dublin, 1862, p. 72.

² Wilde, p. 72, described the larger of these two examples as being "formed of four flat bars of gold," but this no doubt is due to a superficial examination.

³ British Museum: *Guide to the Antiquities of the Bronze Age*, 1904, figure, p. 149.

I have been able thus far to collect are of course quite insufficient to arrive at anything like definite conclusions. Neither have I so far been able to obtain any particulars on this point concerning French torcs. Such information would be of value, as the method employed in their construction may possibly throw some light on the question of their origin. Sir John Evans has kindly sent me a sketch of a torc from Carcassonne in his own collection, but this example would appear, by its star-shaped section (the angles of the cross are filled in) to be one of the moulded examples.

Monday, 13 May 1907.

W. M. FAWCETT, M.A., in the Chair.

A paper was read by Mrs WHERRY on

THE DANCING TOWERS OF ITALY AND INDIA.

Capt. MARK SYKES gave a lecture, illustrated by lantern slides, on:

THE PLAINS OF MESOPOTAMIA, THE FORESTS OF
PONTUS, AND THE HIGHLANDS OF KURDISTAN.

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