

# A Scottish Neolithic carved stone ball with enigmatic surface details

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## ABSTRACT

*A Scottish carved stone ball with unusual surface markings is described and analysed. Although undoubtedly an original prehistoric artefact, it is an unprovenanced find and there is no absolute certainty about the dating and character of its unique markings. Its enigmatic nature, with the possibility of anthropomorphic depiction, presents an interpretative challenge for archaeologists and art historians.*

Every now and then an archaeological object turns up which challenges expectations and perceptions and creates perplexity as to certain aspects of its nature and authenticity. Just such an object was acquired by one of us (EG) from the collection of Henry M Stewart, who died in 1980. Stewart was a granite merchant in Aberdeen, a man with a deep-seated interest in the archaeology of north-east Scotland and a Fellow of the Society of Antiquaries of Scotland. The ball was gifted some years after his death by his widow and has no associated information, other than the possibility that it had been part of a larger collection of antiquities purchased at the Aberdeen saleroom where Stewart's uncle, James Milne, was auctioneer.

The find-spot of the object or any other elements of its biography before entering Stewart's collection are thus unknown, but it would appear in most respects to belong within the very well-known category of Scottish

carved stone balls (eg Calder 1989: 58–9), conventionally dated to the later Neolithic period. The derivation of most of these balls is the north-east of Scotland, centred on Aberdeenshire (eg Barclay 2004: fig 3.5a), and there is nothing to contradict the likelihood that that is where this particular artefact originated. Most of the balls are surface finds without any precise archaeological context or associations, and therefore the unprovenanced status of this example does not contrast with that of a good proportion of those in museum collections. The vast majority of balls are pre-Second World War finds, which at best tend to have allocations only to parish, to an adjacent village, or to the farm on which the find was made, rather than accurate national grid references.

'The use, practical or ritual, of these balls is unknown', wrote Stuart Piggott (1954: 332) and little real advance in the study and understanding of carved stone balls has been

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achieved since Dorothy Marshall's excellent catalogue and analysis (1977; 1983), a situation reviewed in detail most recently by Mark Edmonds (1992). Suffice it to say that their use is still unknown despite continuing, ever more imaginative, attempts to conceptualise (eg MacGregor 1999; Shepherd 2000: 156) or rationalise them (eg Young 2011). Also, the dating evidence is still limited to artistic parallels between the motifs on decorated balls and those on Grooved Ware ceramics, on the Folkton Drums from Yorkshire, and on decorated megalithic stones in Ireland and the Orkney Isles, coupled with the key association of one standard six-knobbed carved stone ball and other possibly related stone objects found at the Skara Brae Late Neolithic village, Orkney (Childe 1931: pl. 38.1; Marshall 1977: 62). The only recent find to offer a possible extension to this later Neolithic time-frame is the ball found at Loch Olabhat on North Uist, Western Isles, in the context of an earlier Neolithic settlement (Armit 1988: 23, *illus* 14.2; 1996: 63, *fig* 4.10). The Loch Olabhat example, however, belongs to the rare type of smooth balls without projections but with incised geometric decoration, similar in some respects to one from Skara Brae (Childe 1931: plate 38.4; Clarke et al 1985: 60, *fig* 3.27), and it may offer the hint that this type could predate those with projections. In the opposite chronological direction, suggestions for carved stone balls having some sort of continuity into the Chalcolithic/Early Bronze Age have yet to be validated by any firm archaeological evidence (Needham 2004: 236–40).

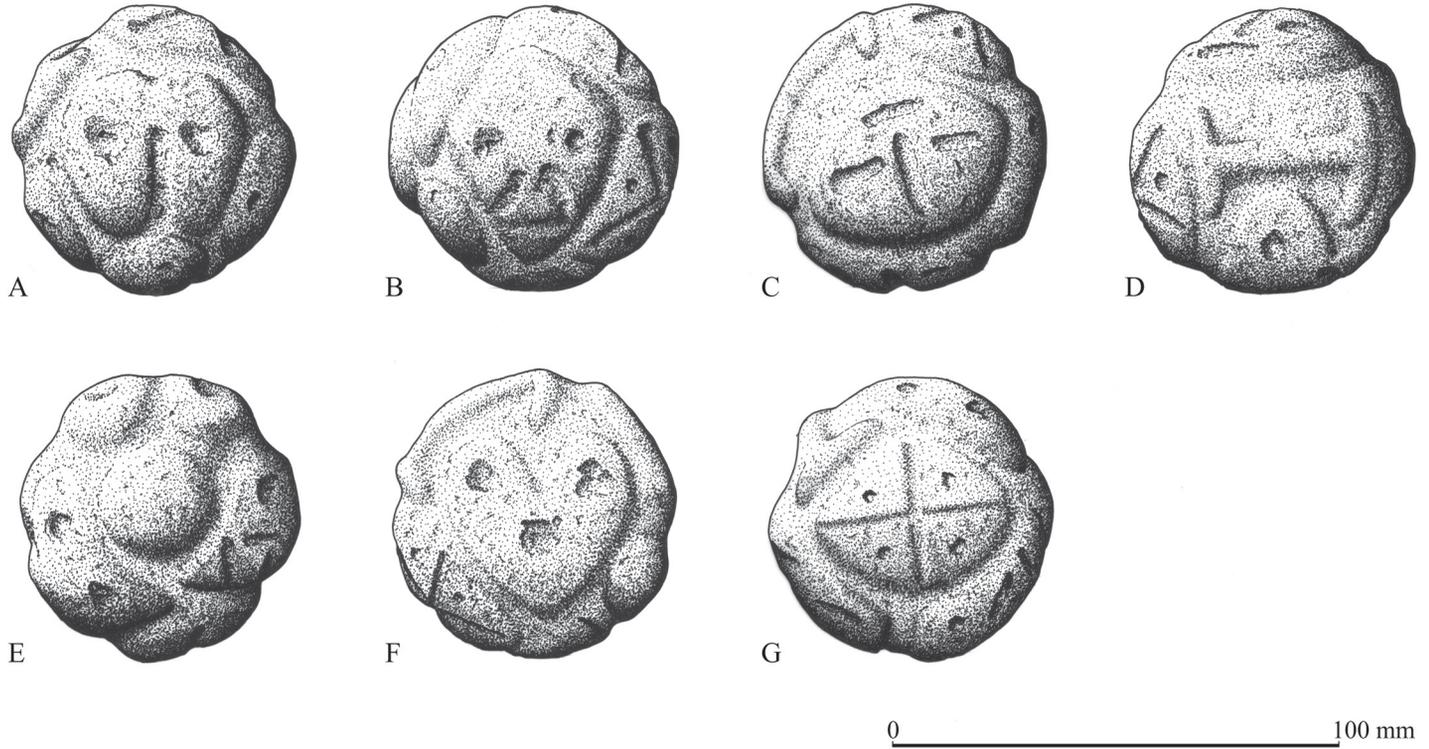
The ball which is the subject of this note has a maximum dimension of 64.8mm, weighs 338.3 grams, and is of a sparkly (mica and feldspar), light-grey granite (*illus* 1). The basic form is akin to the common six-knobbed variety, in this case with low, unobtrusive projections. However, these projections are

not regular in spacing or circularity, and are distributed so as to allow for one small circular knob (*illus* 1: E) of 24.5mm diameter and one space without a knob as such (*illus* 1: D). There is some slight staining and also some surface irregularity which could be post-depositional, but in general the ball appears, at first sight, to be intact and without significant modern damage, with the proviso that granite balls will almost inevitably tend to have a rough surface (cf Todd 2006: 62).

It is immediately obvious on further inspection of this specimen that, apart from the fact that it is slightly smaller than the average size for carved stone balls (see Appendix), its surface is unusually irregular. The zone without a knob (*illus* 1: D) has a linear raised arrangement of a medially elongated 'H' shape, mainly formed by pecking or otherwise reducing the surrounding surface. Less immediately obvious, but clearly apparent once one's eye is attuned, particularly when viewed using raking light, is the fact that the surfaces of all the projections, apart from the small circular one (*illus* 1: E), have negative detailing. These details are superficial, never exceeding 2.5mm in depth. None of the indentations is absolutely fresh looking and these are most unlikely to be recent; almost all the negative details retain dirt in their interstices.<sup>1</sup> The negative details can be itemized as follows, the views as shown in *illus* 1 subjectively arranged in this list in descending order of clarity:

*Illus* 1:G. A sub-square-shaped projection approximately 37mm across divided into quadrants by the incised arms of a cross, with a small pit roughly central within each quadrant.

*Illus* 1:B. A sub-diamond-shaped projection (c 47 × 39mm) with two small pits, one short linear groove transversely near the pointed base of the projection, and two



ILLUS 1 Seven views of the carved stone ball showing each of the projections full-on, with all markings shown. Drawn by Alan Braby

other short linear grooves angled inwards above the transverse groove.

Illus 1:C. An ovoid projection (*c* 47 × 37mm) with three short parallel grooves and another at right angles to them.

Illus 1:A. A sub-heart-shaped projection (*c* 44 × 38mm) with two pits and a linear groove beginning at the mid-point between the pits. The base of this groove breaches the edges of the projection and there is the possibility that this effect has been created by damage to the surface of the ball at this point.

Illus 1:F. A heart-shaped projection (*c* 44 × 39mm) with three evenly spaced pits.

Having observed these negative details, the initial question – before any further consideration – is whether or not they are of



ILLUS 3 Monochrome photograph of the carved stone ball (view as in illus 1: G). Photo: Duncan Anderson. Copyright NMS (image no 32671/14). Reproduced courtesy of the Trustees of the National Museums of Scotland



ILLUS 2 Colour photograph of the carved stone ball, viewed from the upper right-hand side of the image as shown in illus 1: C, without strong raking light. Photo: Duncan Anderson. Copyright NMS (image no 24926/9). Reproduced courtesy of the Trustees of the National Museums of Scotland

anthropogenic or natural origin. It is in the nature of granite that any exposed surface will be liable to irregularity due to variation in composition and differential erosion and weathering (illus 2). Whereas some of the indentations appear to reflect the loss of actual grains, which could in theory be entirely natural, others have features, such as striations crossing quartz grains, which, in combination with their extent and in some cases regularity, are hard to explain as other than manufactured. When the relative positioning of all these marks is taken into account, the balance of opinion amongst all those who have examined the ball is that, at the very least, most of the negative details are more likely to be caused anthropogenically than not – although considered individually each indentation could be rated either more or less positively in this regard.

The next question is whether or not the negative details are randomly distributed



ILLUS 4 Monochrome photograph of the carved stone ball (view as in illus 1: B). Photo: Duncan Anderson. Copyright NMS (image no 32672/11). Reproduced courtesy of the Trustees of the National Museums of Scotland

or patterned in any way. This is especially problematic to answer since the human eye, in searching for the marks, will inevitably seek to ‘interpret’ them by associating them in groups. To acquire a record of the ball for further consideration it was first drawn by an experienced archaeological illustrator, Alan Braby. The illustrator was not given specific instructions as to what to record, only that sufficient views as necessary to record all the details he could see should be drawn. Thus the drawings shown in illus 1 are what the illustrator regarded as an accurate record of what he could see by way of markings on the ball, without himself taking a position over their origin or significance.

However, it will be obvious from the drawings that the illustrator considered there was deliberate patterning. What Alan Braby saw and recorded confirmed our (AS & EG) view that the marks on the ball appeared disquietingly representational, and could

perhaps be interpreted as forming specific designs. We felt, however, that our views and the drawings were insufficiently ‘objective’ to be fully confident over proceeding to an assessment. Photography seemed a way to limit subjectivity, although the irregularity of the surface meant that details of the relief need strong raking light to reproduce on film. The positioning of the light source was thus inevitably conditioned by the desire to bring out elements of the relief which appeared most ‘meaningful’. As can be seen from the photographs in illus 3 (view G), illus 4 (view B), illus 5 (view C), illus 6 (view A) and illus 7 (view F), it was possible to organise the photographs to show the markings on the knobs at their most representational.

On the basis of the results of traditional still photography we therefore remained hesitant about making a definitive assessment of the negative details on the ball, so arranged for digital scanning to be undertaken at AOC



ILLUS 5 Monochrome photograph of the carved stone ball (view as in illus 1: C). Photo: Duncan Anderson. Copyright NMS (image no 32672/18). Reproduced courtesy of the Trustees of the National Museums of Scotland.



ILLUS 6 Monochrome photograph of the carved stone ball (view as in illus 1: A). Photo: Duncan Anderson. Copyright NMS (image no 32672/9). Reproduced courtesy of the Trustees of the National Museums of Scotland



ILLUS 7 Monochrome photograph of the carved stone ball (view as in illus 1: F). Photo: Duncan Anderson. Copyright NMS (image no 32671/10). Reproduced courtesy of the Trustees of the National Museums of Scotland

Scotland Ltd (by GC: the scanner used was a Faro laser line probe with Platinum arm). This resulted in the video ([http://www.youtube.com/watch?v=Oa\\_ODiNwHBw](http://www.youtube.com/watch?v=Oa_ODiNwHBw); <http://www.vimeo.com/10922008>) and the two-dimensional views of the type shown in illus 8–9 (see the Society’s website <http://www.screenecast.com/t/OBS683ihp> for further screenshots and a video link). Digital scanning is of course not without subjectivity of its own, in that decisions need to be taken over the angle of lighting used to produce the rendered image, resolution, formulation, etc, but in so far as the technology allows, it can be said to produce a more objective record of the ball than manual drawing and a more flexible record than conventional photography, since it allows inspection of the ball from varied angles and using varied lighting and rendering conditions.

It will be apparent from illus 8–9, and even more so from the video itself, that much

the same patterning can be appreciated from the digitally scanned version as from the photos and drawings (illus 1 & 3–7). At this



ILLUS 8 Digital 2-D image derived from the scanned video (view as in illus 1: G). Image: Graeme Cavers. Copyright AOC Ltd



ILLUS 9 Digital 2-D image derived from the scanned video (view as in illus 1: B). Image: Graeme Cavers. Copyright AOC Ltd

point it is time to ‘come clean’ and admit to what has all along been the most troubling feature of this artefact, which is the apparent ‘faces’ visible on the projections. There is one which is particularly striking (illus 1: B; illus 4; illus 9), but at least two others (illus 1: C & F) and perhaps a third (illus 1: A) which could all be interpreted as representations of human, or at least semi- or quasi-anthropomorphic, faces. The compositional elements in each case are different, and can be itemized as follows in terms of the way they could be interpreted:

Illus 1: B. Two sub-circular depressions representing eyes; a short linear groove representing a mouth; and two oblique linear grooves between the eyes and the mouth which represent the creases which run from the side of the nose to the edges of the mouth. The shape of the projection on which these depressions occur is also the most ‘head-and-face-like’ of all the projections.

Illus 1: C. Three parallel linear grooves representing two eyes and a mouth, with a fourth linear depression at right angles to the others representing a nose (turn the illustration as shown in illus 1 upside down to appreciate this). The projection is ovoid, creating a squashed, more ‘baby-like’ facial frame.

Illus 1: F. Three sub-circular depressions representing two eyes and a mouth, set within a heart-shaped facial projection.

Illus 1: A. Two sub-circular depressions representing eyes, with a linear channel ending between them representing a nose, and running out past the frame of the sub-heart-shaped projection to represent the mouth, perhaps looking more leonine than human.

Stepping back for a moment from the above interpretations, much safer ground is reached with the projection which bears the incised cross with centrally placed dots in each quarter (illus 1: G). This is not identical to,



ILLUS 10 Carved stone ball with negative markings (NMS X.AS 93; Aberdeenshire). Maximum dimension 69mm. Photo: Joyce Smith. Copyright NMS. Reproduced courtesy of the Trustees of the National Museums of Scotland



ILLUS 11 Carved stone ball with negative markings (NMS X.AS 97; Oyne, Aberdeenshire). Maximum dimension 74mm. Photo: Joyce Smith. Copyright NMS. Reproduced courtesy of the Trustees of the National Museums of Scotland.

but is reminiscent of, the decoration on the Urlar and Hawick balls (Marshall 1977: 50, fig 6.1 & 3; Clarke et al 1985: 255, fig 7.18) and this suggests that it would not be out of keeping within the known design repertoire of carved stone balls. Indeed, if this were the only decoration visible on this ball it would be readily acceptable within the canon of decorated carved stone balls. Also, the ‘H’-like motif (illus 1: D) is not subject to quite the same doubts about authenticity, since it is sculpted in relief and therefore undeniably present. It is just possible that the area above the horizontal line of the ‘H’, as shown in illus 1: D, could have been depressed by damage rather than intent, as it has a slightly rougher and less precise appearance, and thus could be said to enhance artificially the ridge of the horizontal line, but this does not apply to the lower side of the horizontal line, where the zone between it and the dotted lobe of the adjacent projection is clearly demarcated by a grooved channel (see illus 1:

F). Although grooving to create projections is a standard way of crafting these balls, we are not aware of any precise parallels for this kind of sculpted motif in relief occurring on any other examples. Nevertheless, even if unique, it seems far too definite a feature to reject out of hand as part of the intended original design of the ball.

This brings us back to the evaluation of the marks, whether seen as representing faces or not, on the other projections. Grooves and pits as decorative elements on the knobs of carved stone balls are not uncommon (Marshall 1977: figs 1–9), but in all known cases they appear as abstract and not representational of living forms. This is true of almost all Neolithic decoration in Britain (Piggott 1954: 88), there being few possible exceptions prior to the chalk Folkton Drums from Yorkshire (Longworth 1999: 86), the Somerset Levels wooden ‘god-dolly’ (Coles 1968), and the recently discovered tiny Neolithic clay and stone human figurines at Links of Noltland, Westray, Orkney (Goring 2011; Moore & Wilson 2010; Pitts 2010). This apparent reticence for human representation in Neolithic Britain could be seen as increasing the possibility that the ‘faces’ were either not intentionally created or, if they were, that they postdate the original period of manufacture and use of the ball. Furthermore, there are a few other examples of granite balls with negative marks on one or two of their knobs, apparently caused by random, accidental damage (eg illus 10 & 11). When viewed in raking light, these marks too could be interpreted as representational, but only perhaps if using an ‘eye of faith’ inspired by the ball under discussion.

Further consideration must take account of the nature of the ball and its suitability to bear decoration. It seems to us somewhat unlikely that the makers of carved stone balls – skilled craft-workers as they were – would have

chosen a ball made of granite as an ideally appropriate medium for representational design. All the difficulties we have experienced in interpreting the marks on the ball would always have applied and we cannot envisage any way – short of paint or pigment of which there is absolutely no trace – that the motifs could have been made more obvious to viewers. Moreover, when decoration does occur on carved stone balls, the individual elements of the decoration, as well as the overall designs of the motifs, are invariably less coarsely and more explicitly executed than in the present example, although there is admittedly a wide gulf in terms of craft skill between the intricate design and execution of the Towie ball decoration (Clarke et al 1985: 54) and that of most of the other decorated examples.

Could a combination of serendipitous ancient damage and erosion of the surface, perhaps also combined with subsequent deliberate, less skilled enhancement at an unknown later period, have created the crudely representational imagery we have described? Is this ball a truly remarkable manifestation of prehistoric artistic expression or are we in danger of over-interpretation? Even amongst ourselves we cannot agree on the weighting to be given to intentionality versus chance for many of the smaller negative features, and we would encourage readers to view the video and come to their own conclusions.

Our lingering uncertainty over precisely how the ball came to be marked in such a provocative way, coupled with the absence of information on its biography, prevents us proposing that the marking on this artefact be regarded as the work of an early prehistoric artist. Nevertheless, the marks on this ball make it a fascinating artefact and provide a cautionary tale for our difficulties as archaeologists when it comes to evaluating

enigmatic finds. Even setting aside the negative markings, the relief configuration by itself is sufficient for it to be classified as a unique and truly remarkable carved stone ball.

## ACKNOWLEDGEMENTS

We are grateful to Duncan Anderson and Joyce Smith for photography, and to anonymous referees for constructive comments.

## APPENDIX

### DIMENSIONS AND WEIGHTS OF CARVED STONE BALLS

The average or mean dimension for carved stone balls is usually quoted as 70mm, following Marshall's rather casual statement that 'three-hundred and seventy-five of these balls are much the same size, with a diameter of about 70mm' (Marshall 1977: 40; cf Calder 1989: 58; MacGregor 1999: 259; Macdonald 2006). She did not list the dimensions of each ball in her published catalogue, however, and no subsequent publication has provided a sufficient number of measured examples for a statistically accurate mean to be calculated. As part of the research for this note, one of us (AS) examined 112 balls in the collection of National Museums Scotland and recorded the following data.

Sample size 112; comprising 2 (Type 1), 18 (Type 2), 5 (Type 2a), 3 (Type 3), 26 (Type 4a), 18 (Type 4b), 5 (Type 4c), 1 (Type 4d), 7 (Type 5), 2 (Type 6), 11 (Type 7), 5 (Type 8), 3 (Type 9a), 1 (Type 9b) and 5 (Type 9c) balls. The types are those of Marshall (1977: 64–72). One of the Type 2a balls is also a Type 6, and the three Type 3 balls are joint types of Type 9c, 9d and 10 respectively. No very atypical examples were included in this sample, which also excludes the Towie ball

(75mm maximum dimension; weight 533 grams).

Of the 112 balls, the largest and heaviest ball (Type 4a) is 87.2mm in maximum dimension and weighs 742 grams; the smallest and lightest (Type 2a) is 62.4mm and 260 grams. The range is therefore 24.8mm and 482 grams. The overall means for this sample are 71.7mm for maximum dimension and 448 grams for weight (the standard deviation figures for these values are 4.4mm and 81.5g respectively). The values for the most common types were also calculated separately (ie for the 23 Type 2 balls and the 50 Type 4 balls, which have four and six knobs respectively). The Type 2 balls have a mean maximum dimension of 68.8mm (standard deviation 4.3mm) and a mean weight of 400 grams (standard deviation 84.9g); the corresponding values for the Type 4 balls are 73.2mm (standard deviation 4.4mm) and 471 grams (standard deviation 74.2g).

These data confirm that the ball which is the subject of this note can be considered to be a small example, towards the extreme end of the range. Of all the six-knobbed balls in this sample, it is smaller than the smallest example which is 65.3mm in maximum dimension, and only slightly heavier than the lightest example which weighs 319 grams.<sup>2</sup>

## NOTES

- 1 An anonymous referee for this paper suggested that advances in scientific analytical and dating techniques might offer possibilities for extracting useful information about age and environment from the dirt in the interstices. This is certainly an argument for careful future curation of this ball in its present state.
- 2 As also pointed out by an anonymous referee, there is an example of a much lighter six-knobbed ball (type 9c; NMS X.AS 166; Marshall 1977: fig 7.2) weighing only 246 grams, but this ball is damaged and was excluded from the sample of 112 balls for that reason.

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A video of the ball can be found at <http://www.screencast.com/t/OBS683ihp>.

