

# The Garboldisham Macehead: its Manufacture, Date, Archaeological Context and Significance

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*The paper discusses the Garboldisham macehead: an unusual decorated macehead carved from red deer antler. The macehead was found in the 1960s deposited in a tributary of the river Little Ouse, Norfolk and is decorated with three spirals, making it especially significant. This paper reports on the analysis of the decoration using digital imaging, discusses a new radiocarbon date recently obtained for the artefact, and discusses its significance alongside other dated antler maceheads.*

**Keywords:** Digital imaging, decoration, macehead, Middle Neolithic, spiral, radiocarbon dating

The Garboldisham macehead is an unusual decorated macehead carved from red deer (*Cervus elaphus*) antler. The macehead was found in the mid-1960s deposited in a tributary of the river Little Ouse, Norfolk (Edwardson 1965), and is decorated with three spirals, making it especially significant. This paper reports on the analysis of the decoration using digital imaging, discuss a new radiocarbon date recently obtained for the artefact, and discusses its significance alongside other dated antler maceheads. Finally we report on the local archaeological context of the macehead, and discuss its wider archaeological significance.

## MANUFACTURE AND REWORKING

The macehead was examined using digital imaging techniques as part of the Leverhulme funded *Making a Mark* project, investigating the manufacture and context of decorated artefacts from across Neolithic Britain and Ireland. We will not discuss the methodology here

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(see Jones *et al.* 2015). Reflectance Transformation Imaging (RTI) is a non-contact, affordable and easy imaging technique. RTI is especially useful for recording archaeological artefacts because of its ability to acquire and represent the 3D reflectance properties of objects. In addition, certain details of the macehead were recorded with a handheld USB digital microscope Firefly GT200 providing up to 230× native optical magnification. Finally, close-range photogrammetry using Structure from Motion was used to construct a 3D model of the macehead. RTI, close-range photogrammetry, and digital microscopy were used to record the macehead in order to examine the sequences of manufacture.

The macehead has been manufactured from the basal region and burr of a red deer antler (see Simpson 1996, 294). The antler has been trimmed substantially and polished. It is possible, using digital imaging and the naked eye, to discern the ‘grain’ of the antler, not completely erased by polishing (Fig. 1). Polishing striations are also visible on the surface of the macehead (Fig. 3). The macehead is decorated with three spirals cut into the polished surface. There is a complexity to their arrangement (Fig. 2). One spiral is carved on one surface this is then ‘carried over the shoulder of the implement to be repeated twice on the other side’ (Edwardson 1965, 145). The difficulty of being able to comprehend the decoration visually at a single glance is an attribute that the Garboldisham macehead shares with a number of other decorated artefacts from the British and Irish

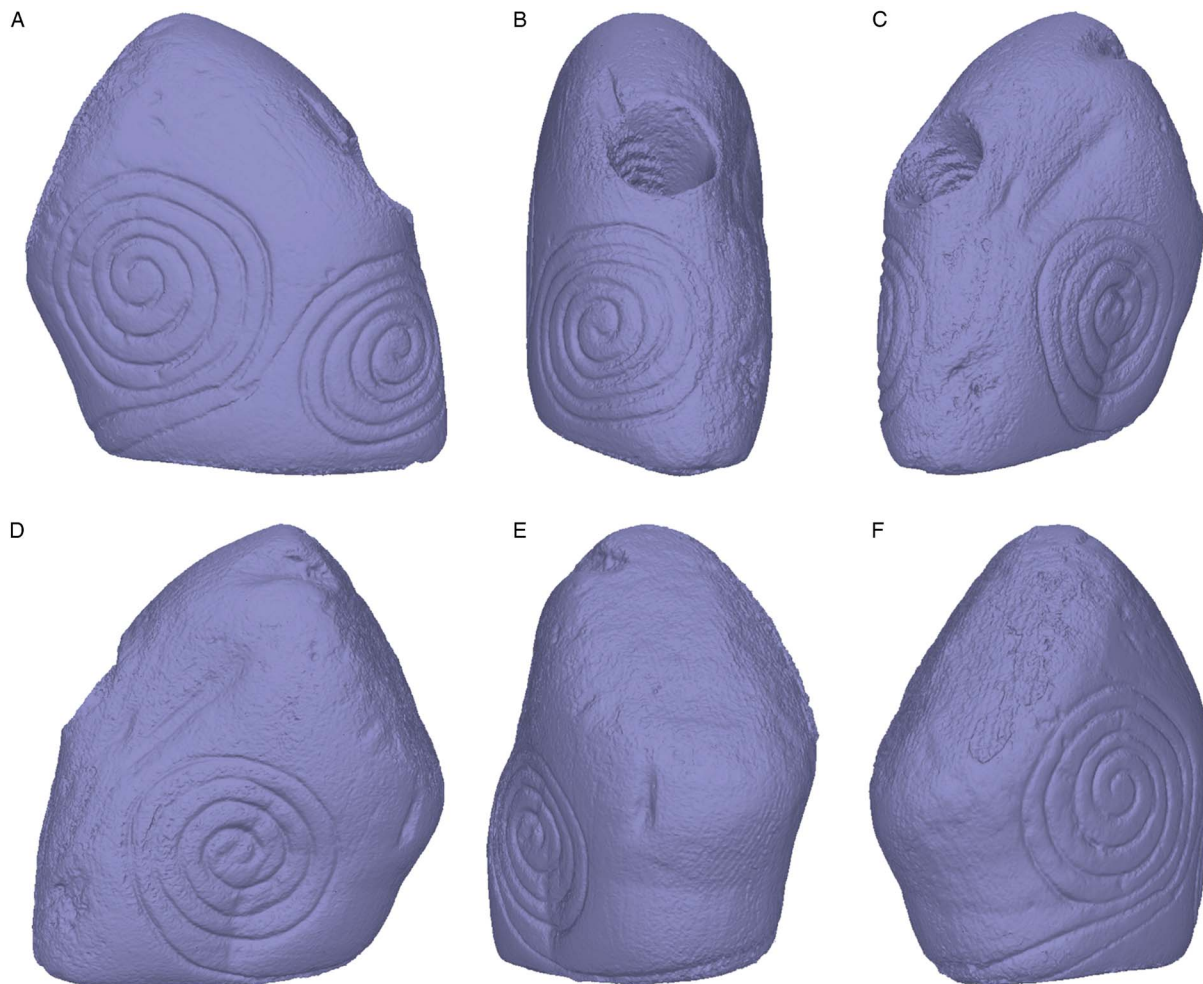


Fig.1.

Views of the 3D model of the macehead where the 'grain' of the antler can be observed

Neolithic, including various carved stone balls and the Knowth macehead.

Our analysis focused in particular on the surface with the two spirals. Careful analysis indicates that the larger of the two was carved with the grain of the antler. The larger spiral (marked in grey in Fig. 2) flattens on one edge running parallel to the side of the antler implement. Notably this conforms to a substantial grain in the antler (Figs 1 & 4). The smaller of the two spirals (marked in pink in Fig. 2) notably respects the larger of the spirals and its carver kinked the second smaller spiral away from the larger.

Using RTI it is possible to discern a stratigraphic sequence of carving and striation. This is clearest for the larger of the two conjoined spirals. At the outer edge of

this spiral a polishing striation can clearly be seen butting up against the carved edge. This is then cut by the outer whorl of the spiral and the exterior meandering line (Fig. 5). This sequence of activity is suggestive of more than one episode of carving and is confirmed by digital microscopy of the carved grooves which exhibit two episodes of carving: the spiral was carved and then recarved at a later date (Fig. 6). We cannot know whether this sequence followed rapidly, in the manner of a master craftsman correcting the work of an amateur or apprentice, or whether these should be regarded as distinct episodes indicative of a long use-life.

Superficially, the Garboldisham macehead resembles the decorated macehead from Knowth (Eogan & Richardson 1982) as both possess spiral decoration,

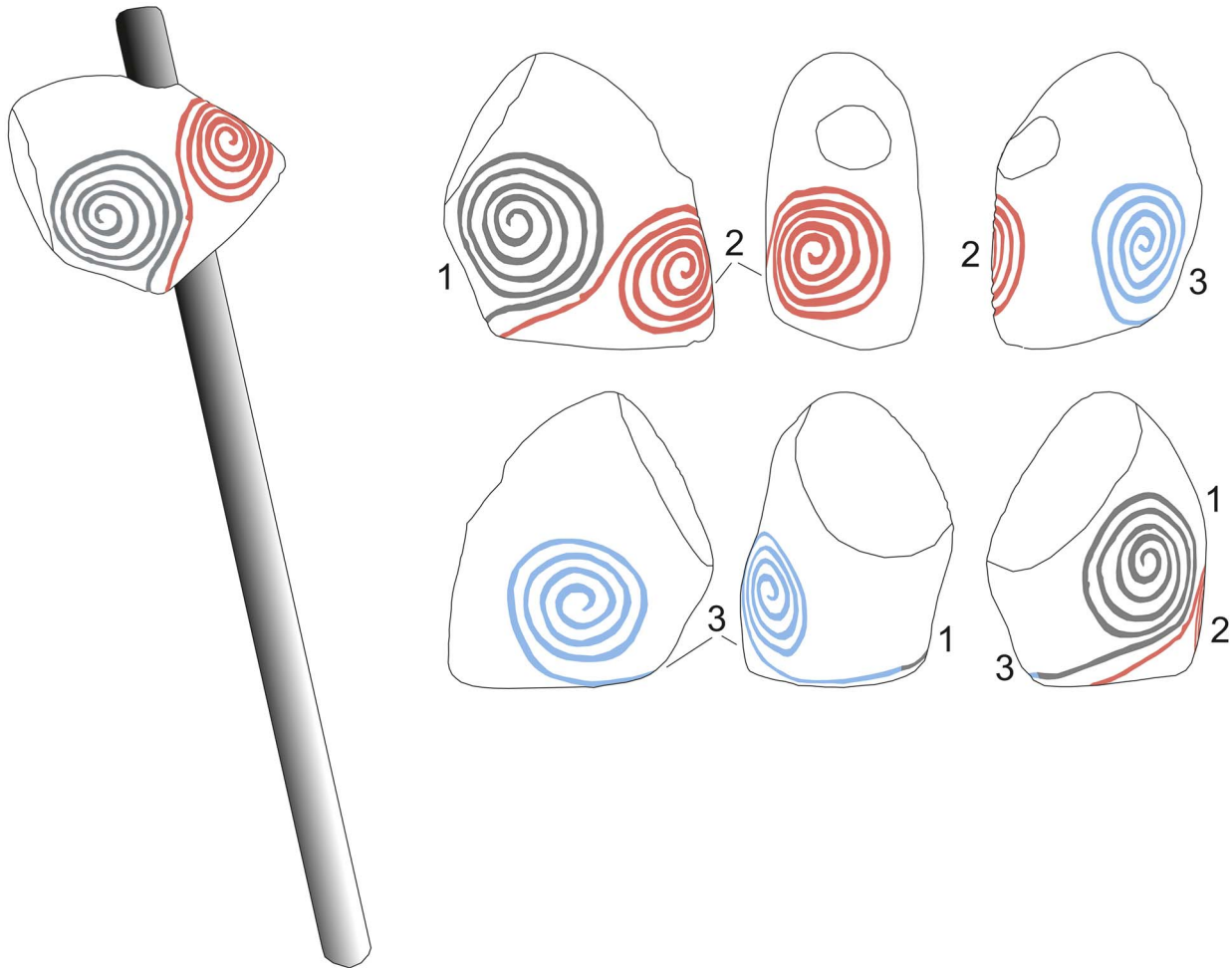


Fig. 2.

Annotated diagram showing the changing appearance of the three spirals (in differing colours) as the macehead is manipulated by the viewer. Also included is an interpretation of the macehead's appearance and orientation if hafted

though it diverges from the Knowth macehead in a number of ways. The decoration of both include spirals, but the Knowth examples are positioned on either side of the drilled hole of the macehead; the Garboldisham spirals meander across the surface and are not organised by the central axis of the drilled hole. Notably, the Knowth macehead is one of the few decorated artefacts in the British and Irish Neolithic repertoire on which decoration is executed in relief (the other example being Drum 1, Folkton), whereas the Garboldisham spirals are incised into the surface of the antler. One clear point that stands out from the decoration of the Garboldisham macehead is the way in which the decoration works *with* the grain and morphology of the antler. Arguably, it is this that lends the macehead its unique character and

unusual orientation when (or if) hafted (see Fig. 2). Both decoration, and orientation mark this example out as distinctive when compared with the corpus of known antler maceheads.

#### DATING

Garboldisham was on the original list of those maceheads chosen for radiocarbon dating by the Antler Macehead Dating Project (hereafter AMDP) mainly because of its unusual decoration and polishing, but it was not made available for sampling at that time. This new date is therefore extremely welcome. The date of  $4554 \pm 33$  BP (OxA-33069) is in keeping with other dates obtained as part of AMDP (Loveday *et al.* 2007)



Fig. 3.

RTI snapshot of the other decorated side of the macehead. The application of the filter Coefficient Unsharp Masking enhances the visualisation of the polishing striations



Fig. 4.

View of the larger spiral where it flattens. RTI snapshot generated with the filter Diffuse Gain

but consequently falls on the Middle Neolithic plateau in the calibration curve and, as a result, has several date ranges within the 2 sigma bracket though slightly weighted towards 3240–3104 cal BC (56.4%) (Table 1).

Since the results of the AMDP were published more associated radiocarbon dates have become available for antler maceheads (eg, Northton, Harris & Watnall, Nottinghamshire, discussed below; Table 1). Indirect dates by association may also now be considered. For example, the macehead from Liffs Low, Derbyshire, failed to produce sufficient collagen when sampled as part of the AMDP but a date has since been obtained from the associated burial of an adult male (Loveday & Barclay 2010 with thanks to Mandy Jay and the Beaker People Project). Being associated with edge-polished axes, Liffs Low bears close comparison with Burial G (also a mature male) at Duggleby Howe, North Yorkshire, which was likewise associated with an antler macehead (originally dated as part of AMDP) as well as an edge-polished adze. Three further dates have been obtained from this skeleton (Gibson & Bayliss 2010).

This dating by association can possibly be extended to include the secondary burial of a mature male

and juvenile at Whitegrounds, North Yorkshire, also associated with an edge-polished axe and jet belt-slider but in this case without a macehead (Brewster 1984).

Regarding new direct dates, that from Watnall (National Museums Scotland) produced a result of  $4395 \pm 30$  BP (SUERC-40112) (Sheridan *et al.* 2012; Gibson 2013). The macehead has some polishing and is No. 2 in Simpson's (1996) corpus but, unfortunately, details of its discovery are lacking. The previous date for the Northton macehead (Loveday *et al.* 2007) was obtained from bulked associated animal bone and therefore lacks strict integrity, however, the artefact has been dated directly as part of the Stepping Stones project (Garrow *et al.* 2017, appx S1) and has produced a date of  $4021 \pm 30$  BP (OxA-29163) which is probably too young (Sheridan *et al.* 2014 and see below).

The data have been calibrated using OxCal 4.2.4 (Bronk Ramsay 2009) and IntCal13 (Reimer *et al.* 2013). The plotted results (Fig. 7) show that the majority of these maceheads, including that from Garboldisham, date to the second half of the 4th millennium including those dated by association. They clearly date to the Middle Neolithic when Impressed Ware was in currency. The Duggleby Howe macehead was associated with Burial G which, using



Fig. 5.  
View of striations cut by spiral. RTI snapshot generated with the filter Specular Enhancement

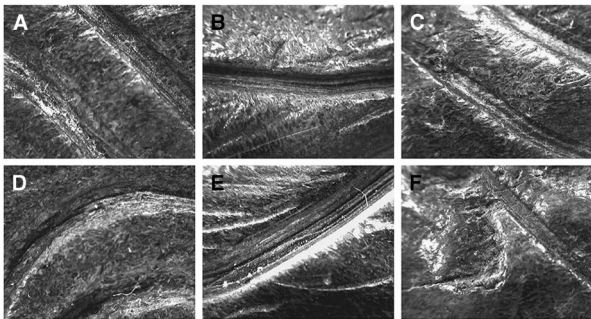


Fig. 6.

Details of the carved grooves: A, B, D, & E show deep grooves produced by recarving; C & F show grooves produced by a single carving episode, most probably with a flint tool. Snapshots taken with the digital microscope

Bayesian modelling of the burial sequence, was dated to 3335–3275 cal BC (65% probability). The macehead itself, however, was also dated and provided a slightly older date range of 3370–3345 cal BC (65% probability) suggesting that it may have been a curated object, already some decades old when buried (Gibson & Bayliss 2010, 68). This does not, however, preclude the object being a personal possession: it need not have

been inherited but may have been obtained when new whilst the deceased was still a young man. He was identified as an hexagenarian by Mortimer (1905, 28) and his maturity was confirmed by Ogden (in Gibson & Bayliss 2010). This possible curation of a prestigious artefact may also be pertinent to Liffs Low. Notwithstanding that the date ranges for the maceheads from Mortlake and Watnall extend into the 3rd millennium, the major currency of these artefacts appears to pre-date the appearance of Grooved Ware.

The date from Burwell Fen and the new date for the Northton macehead suggest, on face value, that the chronology of these artefacts can be extended to the mid-3rd millennium but there are potential problems with these dates. The Northton macehead was found in the upper Neolithic (as opposed to Beaker) midden at Northton (Simpson 1996; Simpson *et al.* 2006) and was associated with multi-carinated Hebridean bowls, the currency of which, like Impressed Ware, cannot on present dating be pushed much later than 3000 BC. Indeed, it may have been the lack of collagen contained in the small size of the sample submitted that was responsible for the young date

TABLE 1: DATES FOR ANTLER MACEHEADS FROM THE BRITISH NEOLITHIC CALIBRATED USING OXCAL 4.2

<i>Site</i>	<i>Lab. no</i>	<i>Determination BP</i>	<i>Cal date BC (1 sigma)</i>	<i>Cal date BC (2 sigma)</i>	<i>Material</i>	<i>Context</i>
Garboldisham	OxA-33069	4554 ± 33	3366 (27.7%) 3329 3216 (21.2%) 3181 3158 (19.3%) 3124	3482 (0.8%) 3476 3370 (33.3%) 3308 3302 (5.0%) 3264 3240 (56.4%) 3104		River gravels
Attenborough	OxA-13208	4463 ± 37	3327 (41.2%) 3218 3176 (5.3%) 3160 3120 (12.3%) 3088 3058 (9.4%) 3030	3341 (95.4%) 3019	Antler	Gravel pit, with Impressed Ware but NOT in association
Duggleby Howe	OxA-13327	4597 ± 35	3496 (30.8%) 3460 3376 (37.4%) 3342	3512 (40.6%) 3424 3384 (41.4%) 3327 3218 (7.3%) 3176 3160 (6.1%) 3121	Antler	Burial G, mature male with lozenge arrowhead & edge-polished adze
Windmill Lane D	OxA-13207	4611 ± 37	3497 (41.0%) 3456 3377 (27.2%) 3351	3517 (58.9%) 3396 3386 (32.2%) 3334 3211 (2.5%) 3191 3152 (1.8%) 3136	Antler	Associated with C
Windmill Lane C	OxA-13440	4684 ± 37	3518 (14.9%) 3495 3464 (45.7%) 3394 3388 (7.6%) 3376	3628 (10.3%) 3590 3528 (85.1%) 3368	Antler	Associated with D
Teddington	OxA-14192	4481 ± 33	3330 (46.7%) 3214 3184 (10.2%) 3157 3126 (11.3%) 3096	3342 (90.4%) 3087 3059 (5.0%) 3030	Antler	River gravels
Mortlake	OxA-14193	4337 ± 33	3010 (25.2%) 2978 2960 (6.0%) 2951 2942 (37.0%) 2902	3080 (1.6%) 3071 3025 (93.8%) 2893	Antler	River gravels
Watnall	SUERC-40112	4395 ± 30	3084 (11.9%) 3065 3028 (16.4%) 3002 2992 (39.9%) 2930	3096 (95.4%) 2916	Antler	Unknown
Burwell Fen	GrA-27417	3920 ± 60	2478 (60.0%) 2332 2326 (8.2%) 2300	2571 (9.8%) 2512 2504 (80.1%) 2273 2256 (5.5%) 2208	Antler	River gravels
Northton	OxA-29163	4021 ± 30	2573 (22.1%) 2548 2538 (46.1%) 2490	2620 (95.4%) 2471	Antler	Settlement with Hebridean & Unstan pottery
Duggleby G	GrA-33104	4470 ± 35	3330 (46.5%) 3216 3182 (8.8%) 3158 3124 (13.0%) 3090	3340 (84.5%) 3078 3071 (10.9%) 3024	Human bone	Burial, mature male with lozenge arrowhead & edge-polished adze
Duggleby G	OxA-17243	4485 ± 31	3331 (29.6%) 3262 3253 (15.8%) 3214 3186 (11.6%) 3156 3126 (11.2%) 3098	3344 (92.8%) 3088 3052 (2.6%) 3034	Human bone	

TABLE 1: (Continued)

<i>Site</i>	<i>Lab. no</i>	<i>Determination</i> <sup>BP</sup>	<i>Cal date</i> <sup>BC</sup> (1 <i>sigma</i> )	<i>Cal date</i> <sup>BC</sup> (2 <i>sigma</i> )	<i>Material</i>	<i>Context</i>
Duggleby G	SUERC-13939	4460 ± 35	3326 (38.2%) 3232 3224 (1.1%) 3220 3174 (4.4%) 3161 3118 (12.9%) 3086 3061 (11.6%) 3030	3340 (95.4%) 3016	Human bone	
Duggleby G Mean	T <sup>1</sup> = 0.3, T <sup>1</sup> (5%) = 6.0, v = 2	4473 ± 19	3322 (52.2%) 3234 3172 (4.6%) 3162 3116 (11.3%) 3096	3334 (61.3%) 3212 3191 (12.5%) 3152 3136 (17.9%) 3087 3058 (3.7%) 3030	Human bone	
Liffs Low	SUERC-26173	4510 ± 30	3341 (10.2%) 3319 3272 (2.8%) 3266 3236 (31.2%) 3169 3164 (24.0%) 3113	3352 (32.7%) 3262 3250 (62.7%) 3098	Human bone	Burial, mature male, with 2 kite-shaped arrowheads, 2 boars' tusks, 2 edge-polished axes, 2 lozenge-shaped 'spearheads', 2 edge- polished flint knives (1 serrated), 3 pieces red ochre, misc. flint frags
Whitegrounds	HAR-5587	4520 ± 90	3364 (68.2%) 3093	3503 (6.6%) 3428 3381 (88.8%) 2922	Human bone	Burial, mature male and juvenile, 1 edge-polished axe, 1 jet belt slider
Northton	BM-705	4411 ± 79	3316 (7.8%) 3274 3266 (6.7%) 3237 3110 (53.7%) 2916	3339 (25.9%) 3205 3196 (69.5%) 2904	Bulked animal bone	Settlement with Hebridean & Unstan pottery

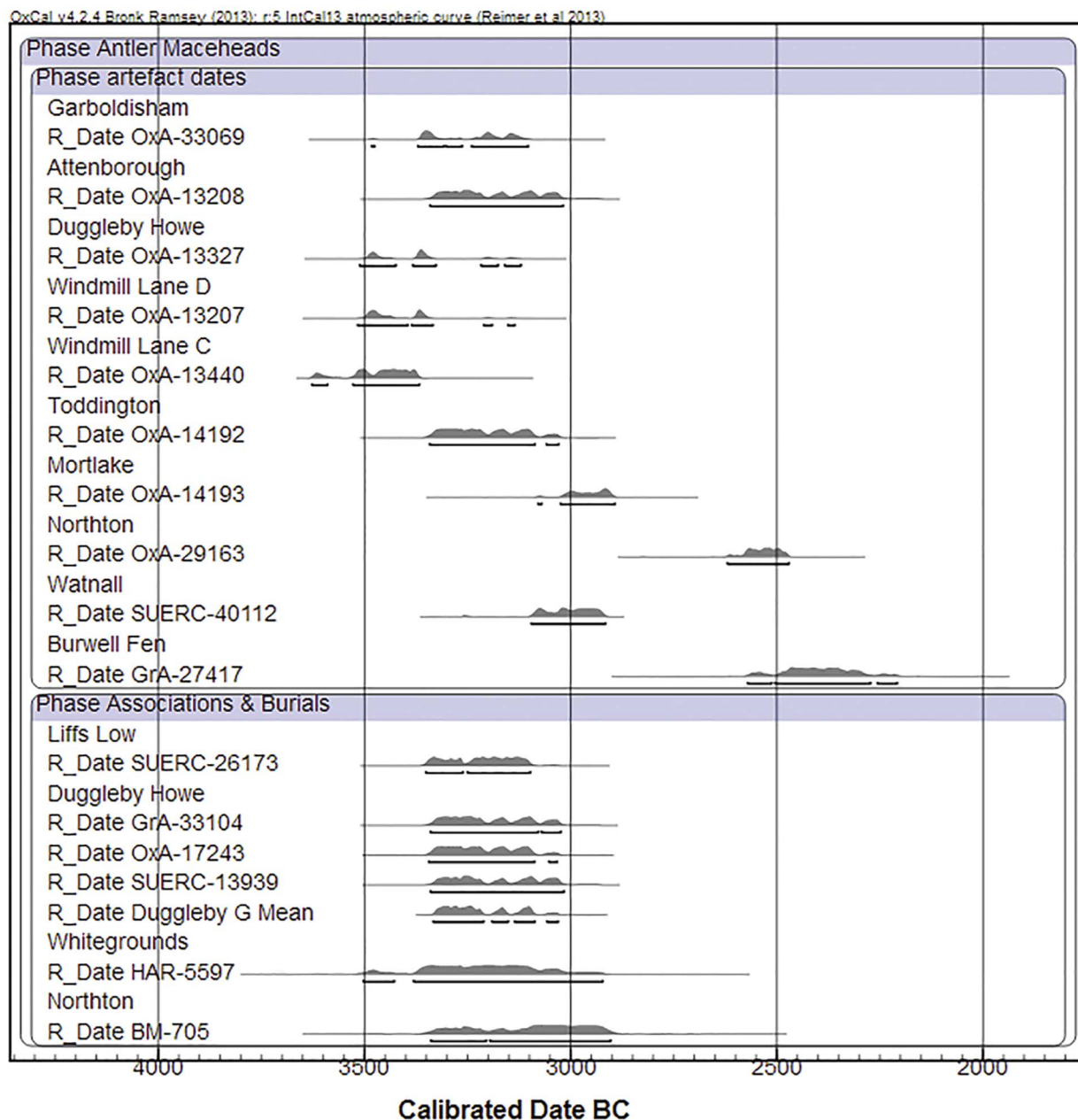


Fig. 7.  
Comparison of dates from antler maceheads from Neolithic Britain

(Sheridan *et al.* 2014). With this in mind, the date from the bulked sample of animal bone (BM-705) may be the more reliable. The late date for the Burwell Fen macehead is less easy to explain. It may demonstrate the survival of the type into the later Neolithic but, being substantially later than the other maceheads,

including those dated by association, it is suggested here that the date must be regarded with caution.

Those maceheads with well-defined archaeological contexts, namely Liffs Low and Duggleby Howe Burial G, belong to a group of richly furnished Middle Neolithic inhumation burials (Loveday & Barclay 2010)



associated with a suite of artefacts including polished rectangular flint knives, lozenge and chisel arrowheads, boars' tusks, edge-polished axes and adzes, and jet belt-sliders. The increasing number of radiocarbon dates for such grave groups suggest that they very much belong to the second half of the 4th millennium and are therefore middle rather than later Neolithic. These burials represent an important change in the burial record from the generally multiple disarticulated inhumations of the earlier Neolithic (notwithstanding the individuals from causewayed enclosures) towards a more personal, individual burial rite with accompanying artefacts. These Middle Neolithic burials in turn give way to the general practice of cremation in the later Neolithic (Healey 2011), which practice may, of course, have a detrimental effect on any associated organic artefacts.

Given the Middle Neolithic credentials of these antler crown maceheads, the spiral decoration on the Garboldsham macehead is therefore important given its frequent comparison with the spiral motifs on rock art and some Grooved Ware ceramics. The elongated lozenge faceting on some antler and stone Maesmore type maceheads has also drawn parallel with the plastic lattice motifs on Grooved Ware. This was taken as suggesting a later Neolithic date for these items, especially the stone maceheads (Piggott 1954; Roe 1968) that also have acknowledged Late Neolithic Orcadian parallels. Carved stone balls with spiral motifs, such as that from Towie, Aberdeenshire (Clarke *et al.* 1985, 54), have been similarly dated by analogy (Marshall 1977, 61–3) and both Roe (1968) and Simpson (1996) accept that the antler forms, even those with elongated lattice decoration, pre-date the stone Maesmore type.

Ian Kinnes (1995) discussed the spiral motif and cited instances of spirals and/or curvilinear designs in media, other than rock art, that can be dated to the Early–Middle Neolithic. He furthermore suggested that the durability of rock art (both on outcrops and in monuments) and ceramics might skew the chronological and geographical distribution of this motif. Loveday suggested that the spiral in a British and Irish context may derive from the early copper double 'spectacle' spirals of Europe and, in support of this, he makes interesting observations on the similarities of architecture between the later Neolithic Orcadian settlements and broadly contemporary structures on mainland Europe. He also notes that, on the continent, the spiral has been present as a motif since LBK times (Loveday 2004) and globally since the Palaeolithic. Alison Sheridan, however, clearly demonstrated that passage grave rock art,

particularly in Ireland, pre-dated the appearance of Grooved Ware on both sides of the Irish Sea (2004). She similarly pointed out that, while the presence of the spiral motif on Grooved Ware ceramics themselves (and within Grooved Ware-associated contexts generally) cannot be denied, the motif itself was already established well before the appearance of this ceramic type. The spiral clearly appears in the Impressed Ware-associated Middle Neolithic (if not earlier – Kinnes 1995) and its presence on Grooved Ware pottery simply demonstrates the persistence (and perhaps potency) of the design into the 3rd millennium.

Based on the available radiocarbon dates for passage graves, Bayliss & O'Sullivan (2013) suggested that they were first constructed 3910–3120 cal BC (68% probability), with the end of use in 3090–2905 cal BC (95% probability) or 3025–2935 cal BC (51% probability). As with the antler crown maceheads, it appears that the passage grave tradition met its demise just as Grooved Ware was starting to spread southwards and westwards from Orkney. Hensey, however, details the development of Irish passage graves and points out that rock art only appears with Type II passage graves in Ireland around 3600 BC culminating in the highly visible art of the Type III passage graves around 3200–3000 BC (Hensey 2015, 45). It is worth remembering, however, that many of the carved stones at Knowth and Newgrange (Type III tombs) also appear to have been reused from earlier monuments (Shee Twohig 2012). It is also with type II passage graves that solar observation becomes firmly demonstrable in the archaeological record and this phenomenon persists into and increases with the development of the Type III monuments.

In fact the best parallels for the Garboldisham spirals are derived from motifs in rock art and passage graves/tombs. Paul Frodsham (1996) surveys the known examples of the spiral motif in the British Neolithic and discusses a suite of evidence, including open-air rock art, passage graves, standing stones, pottery, and portable artefacts like carved stone balls. He notes key examples of spiral motifs in 11 open-air rock art sites in northern England and Scotland with key sites being Morwick Mill, Northumberland, Achnabreck, Argyll, and Ballochmyle, Ayrshire. He also notes carved spirals on several Cumbrian stone circles, the most well known being Long Meg and her Daughters. Spiral decoration is also a feature of the art of passage graves in Orkney and Anglesey with examples at Pierowall and Eday Manse, Orkney, and Barclodiad Y Gawres and Bryn Celli Ddu, Anglesey. Many of the examples discussed by Frodsham

are difficult to pin down chronologically. The new date from Garboldisham, complimented by the Bayesian dates from Irish passage tombs, allows us to begin to discuss spiral decoration as part of this horizon of change associated with the demise of antler crown maceheads and passage graves and the arrival of Grooved Ware.

#### ARCHAEOLOGICAL CONTEXT

The archaeological context of the Garboldisham macehead, deposited *c.* 1.5 m below the river Little Ouse amongst ‘animal bones’ (Edwardson 1965, 145) is consonant with the depositional context of a number of other antler maceheads, deposited in the river Thames in the London region (Simpson 1996). Since the discovery of the macehead in the mid-1960s another artefact has been discovered from the same context: a partly polished flint axe. The report on this simply states that it was found at Hopton in ‘spoil at the Bridge site’ (Owles & Smedley 1967, 78) near the find spot of the Garboldisham macehead. We cannot be sure that the polished flint axe and macehead were certainly associated and, given the nature of the depositional context (a river), this is impossible to confirm. Given the numbers of flint and stone axes from riverine contexts (Bradley 1990; Lamdin-Whymark 2008) there is a strong possibility that the two artefacts were associated. We could, therefore, either consider this location of the Little Ouse as a site of repeated depositions of the kind described for the Thames (Lamdin-Whymark 2008, 35) or of this being a complex single episode deposit consisting of numerous separate components; in either case it seems certain that both the Garboldisham macehead itself and its find location should be considered as special or unusual.

#### SIGNIFICANCE

Some years ago Ian Kinnes (1995) raised doubts about the attribution and association of spiral decorated artefacts. The new date obtained from Garboldisham goes some way to redressing those doubts and enables wider discussion. The radiocarbon date places this artefact firmly within the spread of Middle Neolithic dates for antler maceheads (Loveday *et al.* 2007). More significantly it provides a date for spiral decoration and situates the macehead alongside the dates for primary activity and use associated with Irish passage tombs. This is important as the clearest iconographic parallels for the Garboldisham macehead include the spiral

decorated flint mace from Knowth (Eogan 1986) and the triple spiral motif from Newgrange (O’Kelly 1982), though, as noted above, the Knowth macehead is carved with a different technique. The comparability in dates for Irish passage tombs and the Garboldisham macehead suggest interaction between eastern Ireland and East Anglia at an early stage of the Middle Neolithic. Interaction with eastern Ireland is a recurrent theme for numerous contexts across southern and eastern England, and Wales and will be discussed in more detail elsewhere (Jones & Díaz-Guardamino in prep.).

Importantly the date for the Garboldisham macehead firmly locates it within the established date range of Peterborough/Impressed Ware (Ard & Darvill 2015) of *c.* 3400–2800 cal BC. In this case Gibson’s arguments for spiral decoration being associated with winding cord in whipped cord decoration in Peterborough Ware contexts is especially apposite (Gibson 2002, 59). Meanwhile recent re-evaluations of the dates for Orcadian Neolithic settlements, classically associated with spirally decorated artefacts, are now beginning to suggest comparable dates between the 31st and 28th centuries cal BC for Pool (MacSween *et al.* 2015), and later 32nd–29th centuries for Barnhouse (Richards *et al.* 2016). This is critical as it complicates oft-noted stylistic associations between the spiral decoration of Garboldisham and a Grooved Ware sherd from Skara Brae. We cannot make too much of a radiocarbon date from a single artefact, but potential implications include a comparable phase of spiral decorative motifs in southern England, associated with Irish passage tombs and Peterborough/Impressed Ware, to those associated with the Grooved Ware of Orcadian Neolithic settlements.

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### RÉSUMÉ

[10P]*La tête de massue de Garboldisham: sa fabrication, sa datation, son contexte et sa signification archéologiques*, de Andrew Meirion Jones, Marta Díaz-Guardamino, Alex Gibson, et Sylvia Cox

Cet article traite de la tête massue de Garboldisham: une massue décorée inhabituelle sculptée dans un bois de cerf. La tête de massue fut découverte dans les années 1960 reposant dans un affluent de la rivière Little Ouse, Norfolk, elle est décorée de trois spirales, ce qui la rend particulièrement significative. Cet article rend compte de l'analyse de la décoration au moyen de l'imagerie numérique, examine une nouvelle datation au C14 de l'artefact obtenue récemment et discute de sa portée à côté d'autres têtes de massue en bois de cerf datées.

### ZUSSAMENFASSUNG

*Der Keulenkopf von Garboldisham: Herstellung, Datierung, archäologischer Kontext und Bedeutung*, von Andrew Meirion Jones, Marta Díaz-Guardamino, Alex Gibson, und Sylvia Cox

Dieser Beitrag erörtert den Keulenkopf von Garboldisham: eine ungewöhnliche verzierte Keule, die aus Rothirschgeweih hergestellt wurde. Der Keulenkopf wurde in den 1960er Jahren in einem Zufluss des Flusses Little Ouse, Norfolk, gefunden und ist mit drei Spiralen verziert, was ihn besonders bedeutsam macht. Dieser Beitrag stellt die Untersuchung der Verzierung mit Hilfe von digitalen Bildanalyseverfahren vor, diskutiert ein neues Radiokarbondatum, das jüngst am Artefakt gewonnen wurde, sowie dessen Bedeutung in Zusammenhang mit weiteren datierten Keulenköpfen aus Geweih.

### RESUMEN

*La maza de Garboldisham: manufactura, cronología, contexto arqueológico y significado*, por Andrew Meirion Jones, Marta Díaz-Guardamino, Alex Gibson, y Sylvia Cox

Este artículo estudia la maza de Garboldisham: una inusual maza decorada con grabados elaborada en asta de ciervo. La maza fue documentada en los años 1960 como un depósito realizado en un afluente del río Little Ouse, Norfolk y está decorada con tres espirales, convirtiéndola en un objeto especialmente destacado. Este artículo se centra en el análisis de su decoración mediante el escaneo digital, y discute la nueva datación radiocarbónica recientemente obtenida a partir del artefacto y su significado junto a otras mazas realizadas en asta.