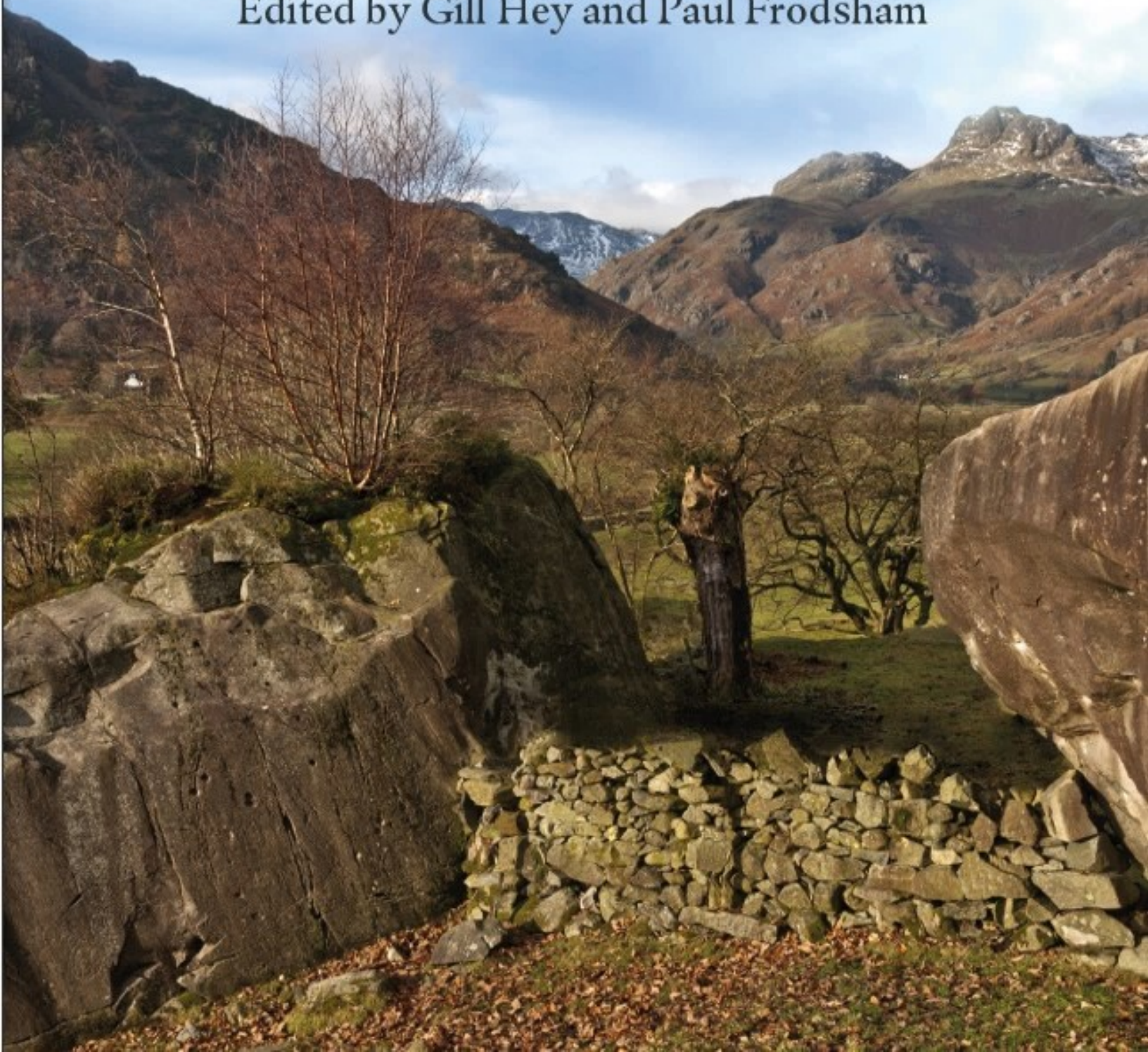


NEW LIGHT ON THE NEOLITHIC OF NORTHERN ENGLAND

Edited by Gill Hey and Paul Frodsham



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GILL HEY AND PAUL FRODSHAM

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‘A most noble work’, at the heart of Neolithic Britain. Some thoughts on the Long Meg complex in the light of recent fieldwork

Paul Frodsham

My road brought me suddenly and unexpectedly upon that ancient monument, called by the country people ‘Long Meg and her Daughters’. Everybody has heard of it, and so had I from early childhood; but had never seen it before. Next to Stonehenge it is beyond dispute the most notable relic that this or probably any other country contains.

William Wordsworth, 1833 (Quoted in Knight 1907, 139)

Introduction

While other contenders, presumably unseen by Wordsworth, may have genuine claims for consideration as the nation’s second most notable relic, the Long Meg complex should certainly be regarded as one of Britain’s most important Neolithic sites. Occupying a wide sandstone terrace above the east bank of the River Eden (NGR NY57113721), near the village of Little Salkeld some 9 km north-east of Penrith, the site is rather more complex than most visitors to the enigmatic stone circle realise.

With a maximum diameter of 112.9 m, the Long Meg stone circle (Fig. 10.1; Burl 1976, 89–92; 1999, chapter 2; Waterhouse 1985, 99–102; Barnatt 1989, 349–51) is one of just half a dozen throughout the British Isles with diameters in excess of 100 m; the others being Avebury, Wiltshire (331 and 108 m), Stanton Drew, Somerset (113 m), Waun Mawn, Pembrokeshire (110 m, largely dismantled), the Ring of Brodgar, Orkney (104 m) and New Grange, Co Meath (104 m). While the original number of stones is unknown, recent analysis suggests a current total of 68 Daughters in the circle, of which 26 still stand, plus Long Meg herself standing some 20 m outside the circle’s south-west ‘entrance’ (framed by two outlying portal stones), in line with the setting sun at the winter solstice as seen from the centre of the circle. Many of the Daughters, notably in the west, appear to be set within a low bank, but it is not known whether this

is an original feature or a result of later ploughing. Long Meg stands 3.8 m above the turf, and is estimated to weigh some 9 tonnes. In marked contrast to her Daughters, which are nearly all of rhyolite* (almost certainly originating in the Lake District), she herself is of red sandstone and displays pecked curvilinear motifs on her east face; she may well have been quarried from an already decorated river cliff.

Immediately north of the stone circle, and with roughly double its maximum diameter, is a vast ditched enclosure (Soffe and Clare 1988). There is virtually no sign of this on the ground surface and no ancient features are visible within its interior, much of which is now occupied by farm buildings. It has long been noted that the enclosure appears to be earlier than the stone circle, though a degree of contemporaneity is suggested by an apparent passageway between them in one place.

Other features have been recorded from the air in the vicinity of Long Meg, some of which could be Neolithic. These include a possible cursus running 600 m westwards from the stone circle towards a spring above the east bank of the Eden. As discussed below, it is possible that a linear earthwork of some kind may have existed here in Neolithic times, but almost certainly not a cursus.

This paper presents an overview of previous work at Long Meg over the past four centuries, followed by a summary of recent survey and excavation work by the Altogether

*This is wrong! See the 2023 geological survey report for discussion of the lithology of the Daughters.



Figure 10.1 Aerial view of Long Meg and her Daughters from the north-east (© Aaron Watson).

Archaeology project (www.altogetherarchaeology.org) in partnership with Durham University. It concludes with a consideration of the importance of the complex, not just within the Eden Valley, or even within northern England, but throughout the whole of Neolithic Britain.

Previous work at Long Meg

A comprehensive study of previous work at Long Meg has recently been produced (Frodsham 2017a); this overview discusses the most important contributions.

The 17th century

The earliest known reference to Long Meg was penned by Appleby schoolmaster and antiquary, Reginald Bainbrigg, in 1599 or 1600:

Besides litle Salkeld.....ther standes certaine monuments or pyramides of stone, placed ther in equal distance one frome an other in modum coronae. They are commonlie called meg with hir daughters. They are huge great stones, long meg standes above the ground in sight, xv fote long

and thre fathome about. They are in number lxxvii. Ther are within the compasse of theses stones two great heapes of small stones, under the wiche, they say, that the dead bodies were buried ther. Ther is no suche stones in all the country, and therefore, I mervaille how they were set, and from whence they came (Haverfield 1911, 361-2)

Bainbrigg sent these observations to William Camden, who incorporated them within the first English language edition of his *Britannia*, published in 1610:

...there bee erected in manner of a circle seentie seaven stones, every one tenne foote high, and a speciall one by it selfe before them at the very entrance, rising fifteene foote in height. This stone the common people thereby dwelling name Long Megge, like as the rest her daughters. And within that ring or circle are heapes of stones, under which, they say, lie covered the bodies of men slaine (Camden 1610, 777).

John Aubrey (1665–93; Burl 2010, 153) seems never to have visited Long Meg himself, but relied on the observations of others. Writing in about 1690, and informed by Sir William

Dugdale, he describes the circle rather inaccurately as consisting 'of about two hundred' stones, and notes that 'In the middle are two Tumuli or Barrowes of cobble-stones, nine or ten foot high.' Aubrey further notes (this time crediting Hugh Todd, 'a Westmorland-man') that bones of a 'giant' had been found 'in the middle of the orbicular stones'.

Edmund Gibson's version of Camden's *Britannia*, published in 1695, states unambiguously that the heaps of stones within the circle were not part of the monument but had been 'gathered off the ploughed lands adjoining and thrown up here in a waste corner of the field'. However, while unlikely to have been original features of the stone circle, they may well have originated as late Neolithic or early Bronze Age burial mounds, subsequently growing in size as convenient repositories for field clearance stone in historic times.

The 18th century

The 18th century saw the publication of four important illustrated accounts of Long Meg. These are useful for what they tell us of contemporary developments in the Long Meg landscape, as well as illustrating the development of thinking about the stone circle itself.

William Stukeley visited in August 1725. His account, published posthumously in 1776, includes the following observations:

It is a great Celtic temple, being a circle of 300 foot diameter, consisting of 100 stones: they are of unequal bulk; some are of very large dimensions: many are standing, but more are fallen, and several carried away; but lately they have been destroyed some by blasting, as they call it, i.e. blowing them in pieces with gunpowder; others they have sawed for mill-stones: but the major part remaining, gives one a just idea of the whole; and it is a most noble work... This large ring, thus declining north-east, is now parted through by a ditch; so that the larger half lies in an inclosure, the other in a common; and the road lies by the side of it, that goes from little Salkeld to Glasenby. South-west from it, seventy foot, stands a very great and high stone, called Long Meg, of a reddish girt, seeming to have been taken from the side of some quarry of the country... In the middle of the circle are two roundish plots of ground, of a different colour from the rest apparently, and more stony and barren; which probably were the immediate places of burning the sacrifices, or the like. Not far hence toward Glasenby is a very fine spring; whence, no doubt, they had the element of water, used at their religious solemnities: and higher up the field is a large spring, intrenched about with a vallum and foss, of a pretty great circumference, but no depth. Full south-west from this work, in the next inclosure and higher ground, is another circle of lesser stones, in number twenty: the circle is fifty foot diameter; and at some distance above it is another stone placed, regarding it, as Meg does the larger circle (Stukeley 1776, 47).

There are some odd aspects to Stukeley's account, perhaps most obviously the reference to '100 stones', when his

drawing (Fig. 10.2) shows only 59, but it is nevertheless ripe with perceptive observations and is a key reference in the history of the study of Long Meg, as well as providing an invaluable illustration and description of the site in the early 18th century. Stukeley's is the only record of the smaller stone circle to the south-west, the possible implications of which will be considered later, as will those of the 'stony and barren' patches within the circle (presumably the sites of the 'heapes of small stones' recorded by Bainbrigg) and of the 'very fine spring' toward 'Glasenby' (Glassonby).

George Smith, a prolific writer on a range of Cumbrian subjects, contributed two articles about Long Meg to the *Gentleman's Magazine*, published in July and August 1752 (Smith 1752a; 1752b; Matthews 2014). The first of these, accompanied by an inaccurate but nevertheless useful sketch plan, makes many important points:

I went some days ago to examine that curious remain of British Antiquity called Long Meg and her Daughters, about which it must be acknowledged all conjectures are extremely uncertain... about half ye stones are within inclosures, placed in an orbicular form, in some places double. I make 70 principal ones, but there are 1 or 2 more disputable; several lie flat on the surface, their greatest eminence not exceeding a foot, others yet less...none of them have a regularity of shape, though the constructors seem to have aimed at a parallelopipedon. Long Meg herself is near four yards high, and about 40 yards from the ring, towards the southwest, but leans much, it being of what they call the free-stone kind, is more regular than those in the circle.... The others in the orbicular range are of no kind of stone to be found in that neighbourhood, and the four facing the cardinal points are by far the largest and most bulky of the whole ring; they contain at least 648 solid feet or about 13 London cartloads; ...no account can be given what carriages could have brought them there, nor by what means they could be placed erect when they came. It is to be noted that these measures are only what appeared above ground; we have reason to suspect that at least a yard is lost in the earth, which will make the whole amount to a prodigious weight more. Others are erect, but not of such enormous size, and others, as I said before, lie flat along, not thrown down, as I think, but so placed either by choice or design, and some of these are also very large (Smith 1752a, 311).

This account includes much of interest, not least the confirmation of Bainbrigg's observation that no boulders similar to the stones of the circle could be seen in the local landscape. Stukeley had previously noted that many such stones were 'scattered about the country', but Bainbrigg and Smith, with their intimate knowledge of the Cumbrian landscape, may well be the more reliable witnesses. The statement that the four 'most bulky' stones face the cardinal points is interesting but inaccurate; it is considered further below. Far more perceptive is the suggestion that some of what we now classify as 'fallen stones' may never have stood erect, having

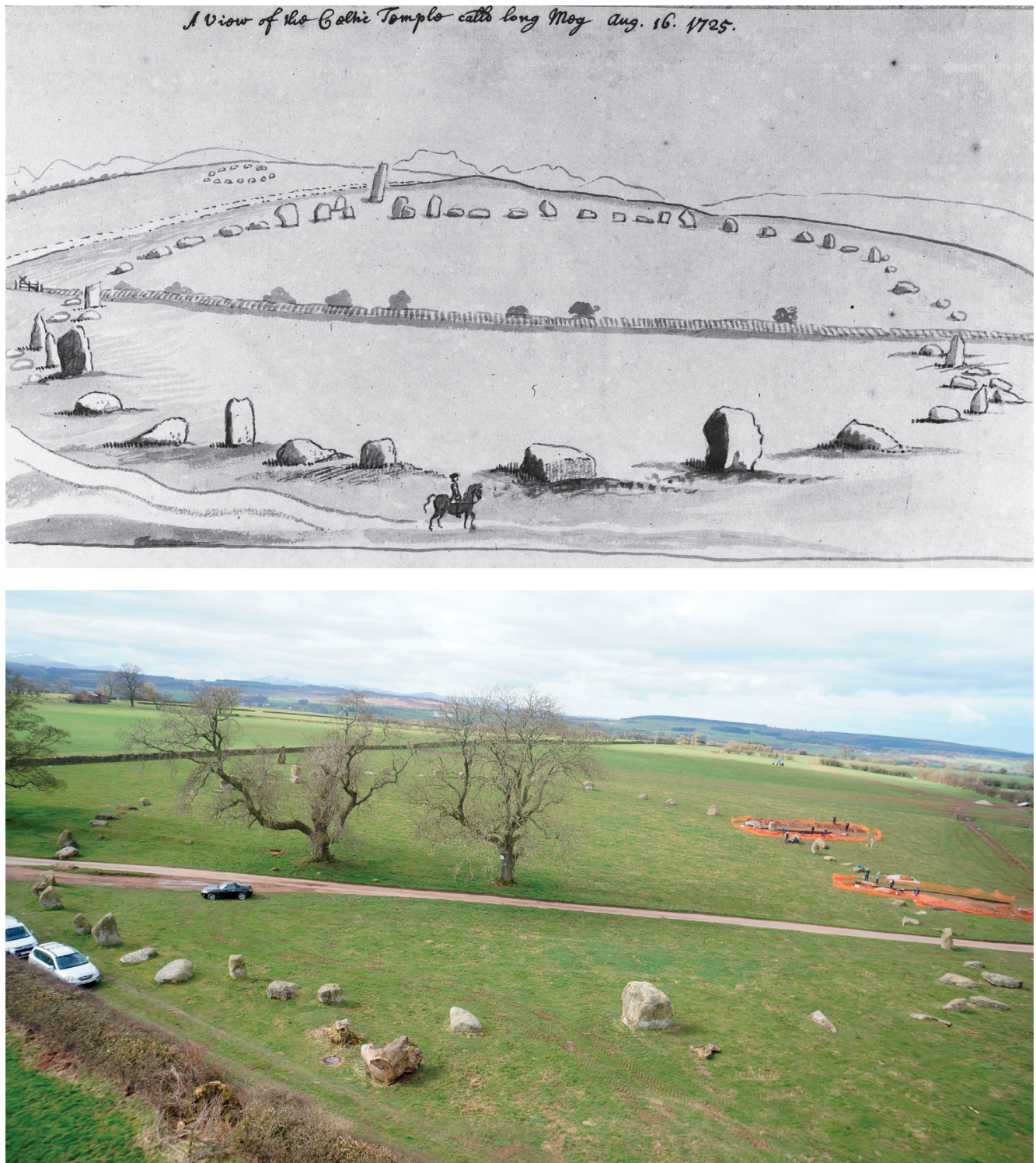


Figure 10.2 a) Stukeley's drawing of Long Meg stone circle from the east, dated 1725 (Bodleian Library MS Top. Gen. B. 53 fo. 13v. Photo © the Bodleian Library, Oxford). Note the 'lesser' stone circle in the background. b) A 2015 drone image showing the stone circle from a similar angle as Stukeley's drawing (Photo © Jamie Quartermaine). From this it can be seen that the eastern arc of the circle is depicted with remarkable accuracy by Stukeley, presumably based on a series of sketches; each stone is instantly recognisable. Elsewhere his drawing is far less accurate; perhaps some stones were wholly or partially hidden by a crop at the time of his visit.

been placed as they lie today 'by choice or design'. He is suggesting that the monument may never actually have been 'completed' as a ring of standing stones, but that many stones, for whatever reason, were simply manoeuvred into position and left prostrate on the ground. His questions regarding the origin of the stones, and how they were transported to the site, remain unanswered, while his observation regarding the prostrate nature of some of the stones should lead us to ask fundamental questions regarding the planning and purpose of the entire project; could the act of dragging the stones to the site and placing them here, whether erect or prostrate, actually have been of greater significance than the 'final form' of the monument? We will revisit this important question later.

William Hutchinson devotes no less than 28 pages of his *History of Cumberland* (1794, 225–82) to discussion of Long Meg and other stone circles, building on an earlier account published in 1774. The earlier account is illustrated with an inaccurate sketch and a schematic plan (which does at least show the correct number of stones, and the flattened arc in the north), while that published in 1794 has a more detailed, but still very inaccurate, drawing. The earlier account reinforces many of Smith's observations; it begins by describing 'the large and perfect druidical monument, called by the country people MEG AND HER DAUGHTERS', recording 67 'unhewn' stones that 'seem by their form to have been gathered from the surface of the earth', together with Long Meg herself of 'red free-stone, with which the country about Penrith abounds'. Hutchinson follows Bainbrigg and Smith in making the important observation that:

What creates great astonishment to the spectator is, that no such stones, or any quarry or bed of stones are to be found within a great distance of this place; and how such massy bodies could be moved, in an age when the mechanical powers were little known, is not to be conceived (Hutchinson 1774, 97).

With regard to the 'heapes of small stones' recorded by Bainbrigg, Hutchinson states categorically that 'there is not the least appearance of any such thing' (Hutchinson 1774, 99).

A further important description of Long Meg in the later 18th century is found within the *Antiquarian Repertory* (Grose *et al.* 1775). This contains an illustration (Fig. 10.3), showing the stone circle from the east with the newly-built farmhouse to its north. The approach road to the new farmhouse, complete with horse drawn carriage, is shown running alongside the field bank through the interior of the stone circle. This is the road that still passes through the circle today. It is noted that:

The appearance of this Circle is much hurt by a stone wall built across it, that cuts off a considerable segment which stands in the road. The enclosed part, in 1774, when this view was drawn, was sowed with corn, and it being then nearly ripe, many of the Stones which had fallen down, were thereby hidden (Grose *et al.* 1775, 239–40).

Aubrey Burl (1994), in his overview of Long Meg from medieval times to 1900, records that damage was done to Long Meg towards the end of the 18th century in the interests of agricultural improvement. This work may well have been linked to the recently constructed Long Meg farmhouse. The owner of Salkeld Hall and Long Meg, the apparently somewhat eccentric Lt-Col Samuel Lacy, created a druidical folly consisting of a system of caves cut into the red sandstone river cliffs above the Eden, occupied by a real-life hermit employed specifically for the role. Burl notes that 'with this artificial antiquity' Lacy 'had no need of a genuine one', and set about the task of removing the Long Meg stone circle which clearly must have represented something of an impediment to ploughing. He quotes Sullivan (1857) who records that:

The late Colonel Lacy, it is said, conceived the idea of removing Long Meg and her Daughters by blasting. Whilst the work was being proceeded with under his orders, the slumbering powers of Druidism rose in arms against this violation of their sanctuary; and such a storm of thunder and lightning, and such heavy rain and hail ensued, as the Fell-sides never before witnessed. The labourers fled for their lives, vowing never more to meddle with Long Meg... All lovers of antiquity must be thankful for the providential throwing of cold water on so wicked a design (Sullivan 1857, 128).



Figure 10.3 Long Meg from the east in 1774 (reproduced from Grose *et al.* 1775), showing the road through the stone circle in the same position it occupies today, and the recently constructed farmhouse to the north.

Perhaps the spectacular intervention of the ‘slumbering powers of Druidism’ led Lacy to have a change of heart, for, as William Hutchinson notes in 1794, the field boundary through the circle was modified in order to improve the setting of the monument ‘to gratify the curious’ (Hutchinson 1794, 225). Burl also records, but without providing any details, that some stones were shifted in the mid-19th century after which nothing would grow, so they were returned, presumably only approximately to their original positions (Burl 1994, 4).

The 19th, 20th and 21st centuries

Several general accounts of Long Meg were published during the 19th century, some of them illustrated, but no major changes in the condition of the site are noted. Further evidence for the generally unchanging nature of the Long Meg landscape throughout the 19th and 20th centuries is provided by historic mapping and, from the later 19th century, photography, including a number of historic postcards which demonstrate a degree of public interest in the site.

William Wordsworth visited in 1833, noting that, ‘Though it will not bear a comparison with Stonehenge, I must say, I have not seen any other relique of those dark ages which can pretend to rival it in singularity and dignity of appearance’ (Wordsworth 1888). He wrote a very fine poem about it, reminding us that places like Long Meg have much potential to enrich our lives outwith the bounds of conventional archaeology:

A weight of awe, not easy to be borne,
Fell suddenly upon my Spirit—cast
From the dread bosom of the unknown past,
When first I saw that family forlorn.
Speak Thou, whose massy strength and stature scorn
The power of years—pre-eminent, and placed
Apart, to overlook the circle vast....

An important development in the mid-19th century was the recognition of rock art on the east face of Long Meg (Fig. 10.4). This was apparently first noted in 1835 by the Egyptologist, Sir Gardner Wilkinson, who recorded ‘a concentric circle of four rings, placed around a cupped centre’ (Simpson 1867, 20). Three decades later Sir J.Y. Simpson observed ‘not one but several series of concentric circles... three or four of them low down on the stone, and much faded.’ He included a very fine illustration of this art, at what he termed ‘by far the most magnificent megalithic circle in the north of England’, in his *Archaic Sculpturings* (Simpson 1867, 19–20, plate 7). The motifs on Long Meg, including concentric circles and at least one spiral, are gradually eroding away, but some are still clearly visible in low sunlight (Beckensall 2002, 64–8; see also Diaz-Andreu *et al.* 2005). This art is an important element of the Long Meg complex, though its chronological relationship to the rest of the site remains unclear. It is possible that the motifs

were applied to the rock before (possibly long before) Long Meg was quarried from the nearby red sandstone river cliffs (Frodsham 1996, 111). Whatever its detailed chronology (which it may be possible to establish through future field-work), this art provides an intriguing link with similarly decorated sites nearby (Little Meg, Glassonby and Old Parks: Frodsham 1989; Beckensall 2002, 79–98). It is very different in character from the ‘cup-and-ring’ art of northern Britain, and bears a close affinity with Irish passage grave art. The motifs on Long Meg include at least one anti-clockwise spiral (possibly as many as three; Beckensall 2002, 65); it has been suggested that such spirals at Irish Neolithic sites were linked to the winter solstice (Brennan 1983), which is potentially significant given that Long Meg’s architecture undeniably incorporates an alignment on the winter solstice (see below). Supposed motifs have been recorded on some of the Daughters, but these remain unproven and could be entirely natural.

In 1881, C.W. Dymond published a detailed plan of the stone circle, the accuracy of which has been demonstrated by several subsequent surveys (*e.g.* Thom 1967; Hood 2004). Various explanations have been put forward to account for the flattened northern arc of the ‘circle’, but it now seems clear that this was due to a desire, for whatever reason, to align this part of the circle with the south side of the adjacent enclosure (discussed below).

A further important development occurred in 1900 when Penrith architect and engineer, George Watson, published his observation that Long Meg was aligned on the winter solstice sunset (Watson 1900). This alignment, formed by Long Meg herself and the two adjacent Daughters that form the west side of the south-west ‘entrance’ (stones 2 and 3), extends to Helvellyn on the distant horizon, into which the midwinter sun appears to set when viewed from the centre of the circle (Farrah 2008, 118). Other significant alignments have been claimed at Long Meg (Morrow 1908; Hood 2004; Barrowclough 2010, 130), but although some of these may have some validity it is only the winter solstice alignment about which we can be certain. The importance of the winter solstice was clearly of key importance to Neolithic communities, and is discussed further below.

Aubrey Burl (1994; 1999) has collated the fascinating legends associated with Long Meg. Although dismissed as ‘ridiculous’ by Hutchinson in the late 18th century (‘such are the trifles with which the public are amused’; 1794 vol. 1, 228), these now represent a significant element of the site’s history and may not be entirely irrelevant to some aspects of its original significance (Muir and Richards 2013). Burl explores the origins of the name ‘Long Meg’, but is unable to reach a firm conclusion; she is supposed to be a witch, and her Daughters her coven, all turned to stone for dancing on the Sabbath. The name may date from the 15th century, a time of general hysteria about witches and witchcraft. It is said that the Daughters are uncountable, and



Figure 10.4 a) and b) Lithograph of the motifs on Long Meg's east face, reproduced from J.Y. Simpson's *Archaic Sculpturings* (1867), shown here alongside a recent photograph.

that anyone who does manage to count them correctly will bring the entire coven back to life. There is another legend that anyone who counts the same number clockwise and anticlockwise will themselves be turned to stone; sadly for those who like to believe literally in such things, this was scientifically tested during recent survey work and proved to be unfounded.

Throughout the 20th century there were occasional references to Long Meg in books and academic papers but nothing of great importance through until the 1980s, when a crucial discovery was made: a large earthwork enclosure immediately north of the stone circle (Figs 10.5 and 10.6) was recognised as a parch mark from the air (Soffe and Clare 1988). The Altogether Archaeology excavations, described below, appear to demonstrate that this enclosure is considerably older than the stone circle, though more work is necessary to investigate further the relationship between the two. It seems probable that both were in use concurrently, at least for a while, as the aerial photographs appear to show a causeway across the south side of the enclosure

ditch adjacent to an apparent entrance in the north side of the stone circle (originally with a pair of portal stones, just like the circle's south-west entrance), providing a passage between enclosure and circle. To complicate matters, however, the northern arc of the stone circle seems to have been constructed directly over the backfilled ditch.

Several other cropmarks are also discussed by Soffe and Clare and shown on their plan (Fig. 10.7), but it is not known how many of these, if any, are Neolithic. One feature, consisting of roughly parallel linear ditches (Fig. 10.8), has been interpreted as a cursus, but Soffe and Clare certainly did not claim one, noting that:

The idea of a prehistoric cursus or an avenue analogous to Stonehenge is attractive but must be discounted on the evidence. The course of the northern ditch runs through and beyond the stone circle. It has an irregular character and is probably prehistoric in origin, although its association with the stone circle or a bank in Longbank Wood is unclear. The other ditch is straighter and thinner and is clearly part of a 19th-century herring-bone drainage system (1988, 296).



Figure 10.5 Aerial view of the Long Meg enclosure from the south, taken on 24th July 1984 (© Cumbria County Council; Cumbria Historic Environment Record).

A section across the possible cursus was examined in 2017, when a trench for an electricity cable was dug through it about 200 m west of the stone circle (Frodsham 2018). Several post-medieval field drains were recorded, one of which, on the line of the northern ‘cursus’ ditch, was set within the fill of a wide U-shaped ditch, which at this point was 1.70 m wide and 0.45 m deep. This ditch is clearly older than the drain and must be the feature considered by Soffe and Clare as ‘probably prehistoric in origin’. Further work will be necessary to ascertain its date, but it could be Neolithic; if so then the fact that it appears to link the spring at the intriguingly named Longbank Wood with the site of the (presumably later) stone circle is unlikely to be without significance.

In another important contribution, Tom Clare (2007) published a contour survey emphasising the relationship

between the Long Meg enclosure and the natural spring that flows into a valley heading north-westwards to the Eden. Clare also noted the pinch-point in the Eden’s channel adjacent to Long Meg, where the river is forced through a narrow gap between river cliffs, forming rapids. Its relationship to the Eden, considered below, is clearly a fundamental factor in the location of the Long Meg complex.

The Altogether Archaeology survey and excavations

Recent fieldwork at Long Meg, undertaken by Altogether Archaeology volunteers in partnership with Durham University, consisted of a survey week in March 2013 (ASDU 2013), followed by a week-long excavation in March 2015 (ASDU 2016). The work was designed in part to inform a



Figure 10.6 False-colour aerial view of Long Meg, taken on 26th July 1984, clearly showing the enclosure ditch and stone circle (north is to the right) (© Crown copyright, Historic England Archive).

conservation, interpretation and research strategy for the site (Frodsham 2017a). This overview of the key findings is presented as background to the discussion that follows.

Topographic survey

The topographic survey (Fig. 10.9) confirms that the site slopes from south to north, the highest point being to the south-west of the stone circle, near Long Meg, at 169.5 m OD, and the lowest point being adjacent to the spring in the north-west, at 160.5 m OD. It highlights the location of the enclosure and stone circle at the head of the valley down which a stream flows from the spring to the Eden (this stream is not given a name on historic OS maps; 'Long Meg Beck' would seem appropriate). A flat plateau on slightly higher ground was available immediately west of the stone circle; this does not seem to have been occupied by anything else at the time, so clearly the original choice of location for the site must relate in some way to this valley which runs roughly

north–south through its interior. The spring that feeds the stream lies just north of the enclosure ditch, but it is possible that one or more springs once lay slightly higher up the valley, actually within the enclosure. Either way, it seems clear that the spring(s) and valley were key factors in the location of the site. As noted earlier, Stukeley recorded 'a large spring, intrenched about with a vallum and foss, of a pretty great circumference' in the general vicinity; Tom Clare (2007, 47) suggests this may have been the enclosure, still visible as an earthwork at the time of Stukeley's visit. Alternatively, Stukeley may have been referring to the spring to the west (labelled 'Pond' on Fig. 10.7), which cropmarks suggest was also surrounded by an earthwork (of unknown date).

The eastern arc of the enclosure ditch still survives as a very slight earthwork, just visible on a digital terrain model based on the new survey data when illuminated from the south-west. Using the new data, together with evidence from aerial photography, it can be seen that the ditch generally

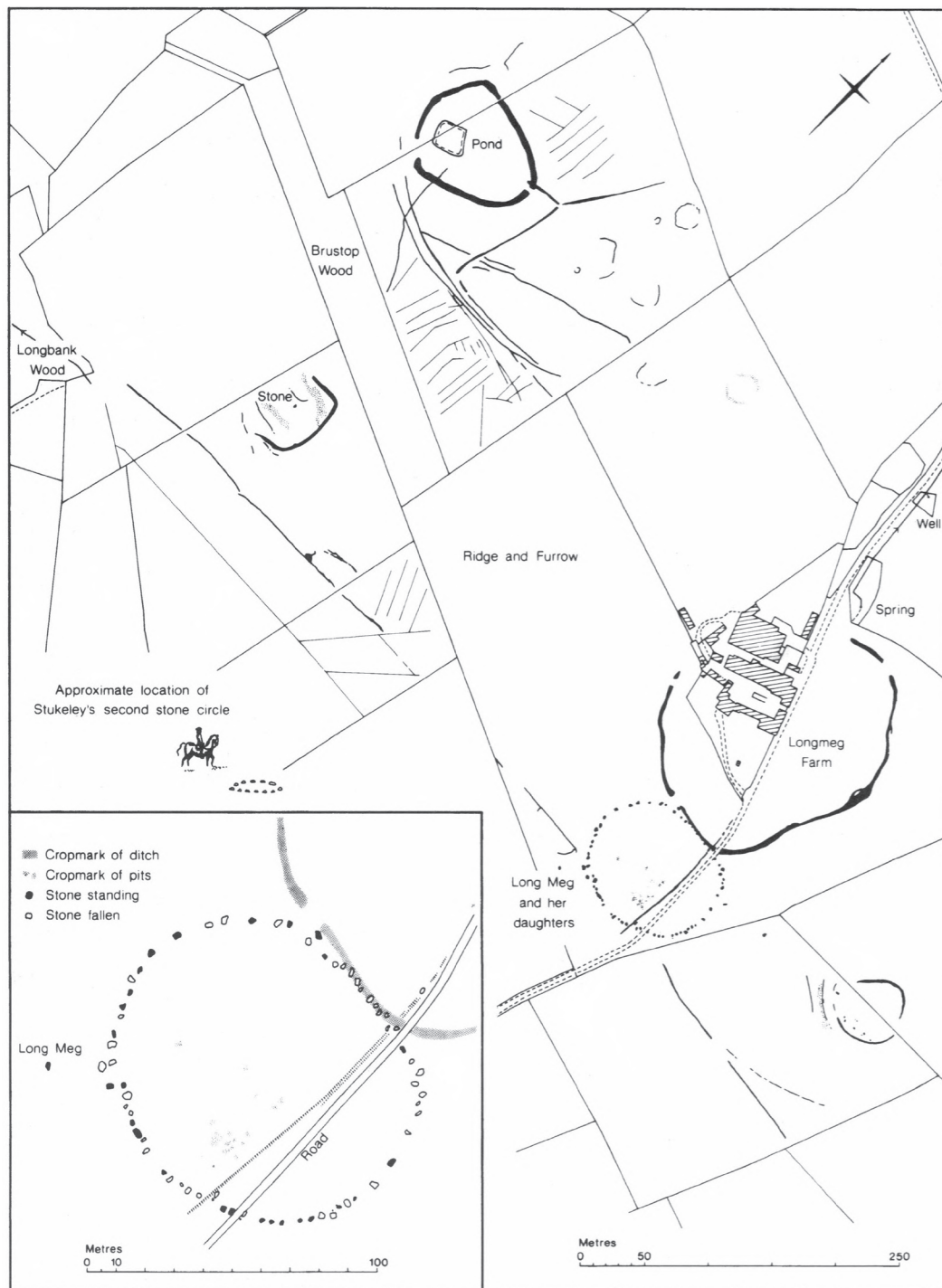


Figure 10.7 Plan of cropmarks in the vicinity of Long Meg, published by Soffe and Clare in 1988 (Reproduced from *Antiquity* 62. © Crown copyright; Historic England Archive).

runs between the 165 and 166 m contours around the east side of the enclosure, rising slightly to between 166 and 167 m in the south where it lies adjacent to the stone circle. It runs at a similar altitude around the west side of the farm (outside the survey area). Much of its north-west sector is overlain by the present-day farm complex, but it presumably

curved back to join the north-east sector in the vicinity of the spring, at about 160 m OD. The whole enclosure thus encompasses a sector of the natural valley, the head of which (now) lies just to the south within the stone circle.

The survey of the stone circle recorded 69 visible stones, including Long Meg herself. These have been numbered



Figure 10.8 Aerial view of the supposed Long Meg cursus, looking towards the stone circle from the west, taken on 24th July 1984. Of the two parallel ditches visible here, the northern one is probably prehistoric, the southern one clearly modern (© Cumbria County Council; Cumbria Historic Environment Record).

from 1 to 69, starting with Long Meg and progressing clockwise around the circle. For the avoidance of confusion, it is hoped that all future work will adhere to this numbering system, with any newly discovered buried stones or stone sockets allocated an intermediate number (such as 17a discussed below). Although always referred to as a 'circle', the monument is actually nowhere near circular, with its flattened arc to the north making it more of a D-shape. In places, its perimeter seems to be laid out as a series of straight lines rather than a continuous arc; laying out a circle on the ground is a very simple exercise, so a desire for a perfectly circular monument was clearly not a priority here. The survey demonstrates the accuracy of earlier plans, such as those by Dymond (1881) and Thom (1967; see also Burl 1988) who recorded the flattened northern arc but were unaware of the adjacent enclosure. However, the circle is slightly larger than stated in earlier publications: it measures 112.9 m between stones 11 in the west and 41 in the east, and 97.3 m between stones 23 in the north and 59 in the south (to the outer edges of the stones). Its perimeter is 336.5 m, and its internal area 8,671 sq. m.

The survey confirms earlier observations that many of the stones appear to be set within a raised bank. This seems to be present between as well as around the stones, such as in the sector in the west occupied by stones 10 to 17 which are quite widely spaced (although it is possible that some stones have been removed, or lie buried, here). Whether this bank was an integral feature of the monument, possibly even predating the stones, or whether it is (at least in part) a result of much later agricultural activity, will require further excavation to resolve.

In addition to the topographic survey, high resolution 3D models of several of the circle stones were made as part of an ambitious programme (as yet unrealised) to produce a 3D model of the entire stone circle. This work was undertaken by teams of volunteers under the direction of Jamie Quartermaine, and involved detailed study and photography of the individual stones. This emphasised the individual character of every stone, even though many now lie prostrate and partly buried. No general patterns in the different size or character of the Daughters were observed, though the massive stones at the approximate

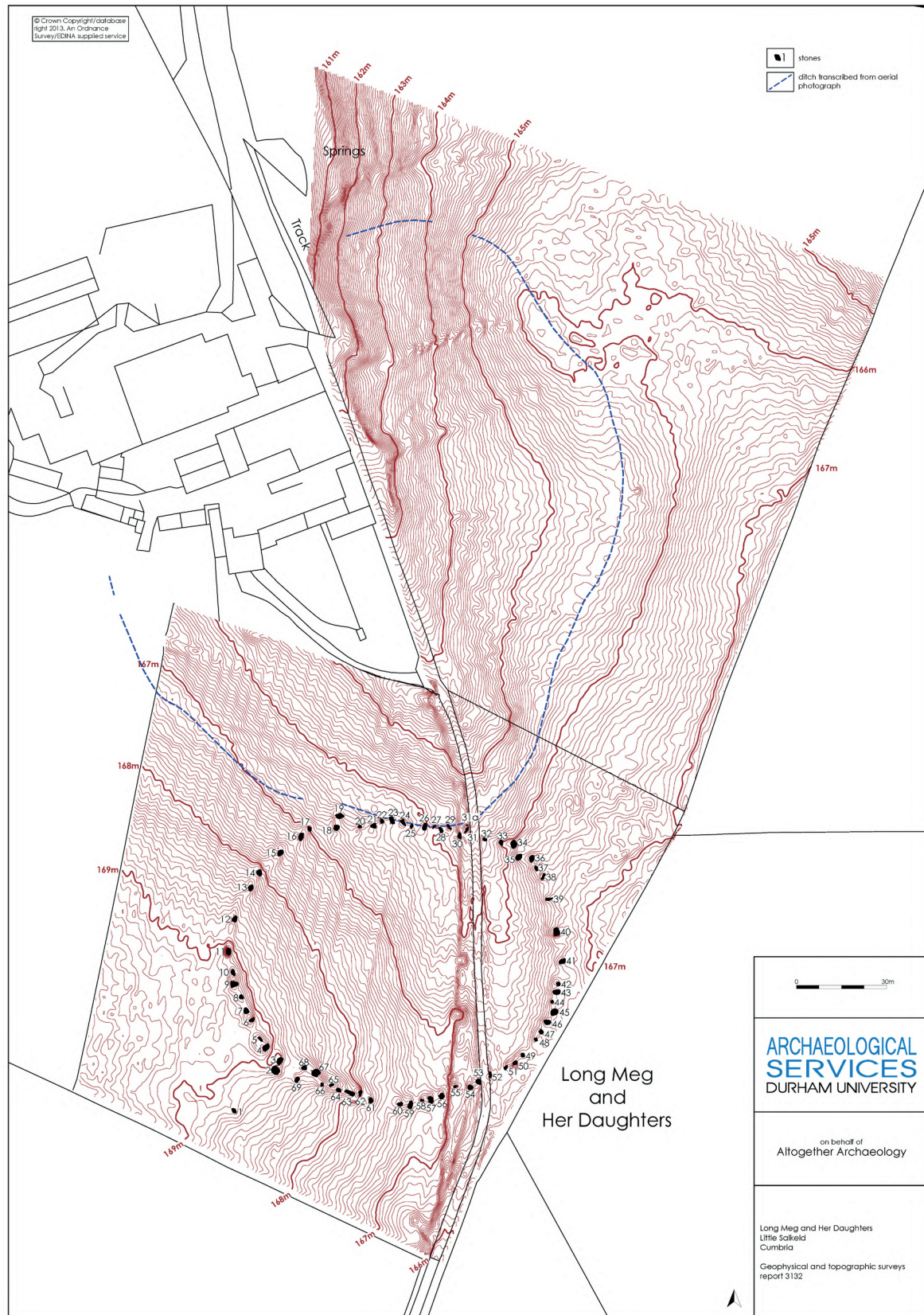


Figure 10.9 Plan produced by the 2013 Altogether Archaeology topographic survey, with the enclosure ditch transcribed from aerial photography. See ASDU 2013 for further illustrations and detailed discussion.

west (stone 11) and east (stone 40) points of the circle are clearly significant, as noted by Smith back in 1752 (Smith 1752a). The monstrous block to the south (stone 63) stands some 10 m west of the circle's southernmost point, though it is possible that another huge stone could have occupied the gap at the south between stones 60 and 61. In the north, contrary to Smith's description, there is no evidence to suggest that a particularly massive stone ever stood here.

A careful search was made for any possible 'art' on any stones other than Long Meg; in the past, a few supposed carved motifs have been recorded, but no evidence of any was noted. Recorded apparently for the first time, however, is a dome of quartz about 0.2 m wide on the now prostrate stone 2, the western portal to the circle's south-west 'entrance' (Fig. 10.10), the like of which was not seen on any other stones. Although now lying at ground level, and lost to view when the grass is long in summer (which may be why it had not been noted previously), when the stone was erect this must have been on its upper surface, and thus would have reflected the light of the sun (or the moon). Given that this is the closest Daughter to Long Meg, and lies on the circle's key midwinter sunset alignment, it seems unlikely that it ended up here by chance. This, and the fact that the south face of Long Meg is coated with quartz, would seem to support the suggestion made by Chris Fowler and Vicki

Cummings (2003, 7) that quartz 'occupied a very special place in a Neolithic economy of substances'.

Although it has often been noted that the stone circle occupies ground sloping downwards to the east, it actually surrounds a natural dip at the head of the valley discussed above. Its lowest point is thus in the north-east, in the area occupied by stones 31 and 32 (between which the present-day road passes), just about opposite the south-west 'entrance' and Long Meg herself. The range in height within the interior exceeds three metres, so, whatever may have gone on within the circle, a flat interior was clearly not essential. Rather, this height differential may be a significant factor in the site's architecture. When viewed from the interior, the stones in the west are always silhouetted against the sky, whereas those to the east don't approach the horizon which is formed by the distant North Pennines.

The gap in the circle adjacent to Long Meg, framed by the two portal stones (stones 2 and 69), is always referred to as the circle's 'entrance', but we don't know the direction from which most people approached the circle, and this may not have been the only, or even the primary, point of access. Indeed, we have no evidence that it functioned as a point of entry or exit for people at all. The same applies to the other 'entrance', between stones 17 and 18, though, as noted above, this seems to have been part of a passageway between circle and enclosure. In some ways this makes more



Figure 10.10 Stone 2, showing the dome of quartz on what would presumably have been the stone's upper surface when erect.

sense as an entrance, and Farrah's (2008, 28) 'experience of landscape revelation' represented by the approach from the north, which may well have been the key route to the site from the Eden, certainly demands serious consideration.

It is remarkable how the stones of the circle's south-west arc, when viewed from outside the circle, appear to occupy a curved ridge beyond which the ground drops steeply into the circle interior; it is almost as though this arc of the circle's perimeter already existed on the ground surface before any of the stones were set up, perhaps in a similar way to that in which natural variations on rock surfaces clearly influenced the location of cup-and-ring marks. It has been suggested that those who produced such rock art were like sculptors 'releasing' a sculpture from the natural rock; perhaps, in a comparable way, the architects of Long Meg were not simply building on a featureless flat surface, but on ground that somehow already held the blueprint for the monument.

A further feature of note is the way in which the Daughters are generally placed with their flattest faces facing inwards; in marked and obviously deliberate contrast, the east portal of the south-west 'entrance' (stone 69) is clearly set with its flat face facing its fallen partner (stone 2) to the west of the supposed entrance passage. No doubt there are further potentially significant aspects of the complex that could be recognised and interpreted simply by looking and thinking. Aaron Watson (*e.g.* 2000; 2004a; 2004b) has demonstrated the benefits of such an approach through his perceptive studies of Neolithic Cumbria. He stresses the need to consider 'the dynamic ever-changing experience of the observer who dwells in the world' in contrast to conventional studies, often based on 'abstract representations', whereby monuments can seem 'static and lifeless, devoid of sensory experience, movement, change and transition'.

During the recent survey, the opportunity was taken to fly a drone over the presumed site of the 'lost' stone circle recorded by Stukeley, and a walkover survey of this area was also undertaken. No sign of it was noted. As suggested by Crawford (1934), its site may now be occupied by a substantial farm building, perhaps originally of 19th-century date and recently converted into a house. If so, all evidence of the circle may now be irretrievably lost. Alternatively, the site could lie beneath a large field clearance cairn to the north of the building, in which case something of it may survive. Either way, the lost circle stood on a knoll very close to Long Meg's key midwinter sunset alignment; it may even be that setting sun at the winter solstice appeared to sink into it when viewed from within the main stone circle.

Geophysical survey

Resistance and geomagnetic surveys were completed of the same area as the topographic survey, including much of the enclosure and the entire stone circle. The results are, in

general, somewhat frustrating; there are several features that could be archaeologically significant, all of which require evaluation in the field.

The enclosure ditch was detected in some places by resistivity, including part of its eastern arc that appears to be 5 m to 7 m wide. However, parts of it which show up clearly on aerial photographs do not register at all on the resistivity plots, presumably because the ditch fill consists of the redeposited material that was originally dug out of it, and perhaps returned to it after only a short period of time. Presumably for the same reason, the ditch was not detected at all by magnetometry (except perhaps in one place in the north). No sign of an internal or external bank was noted anywhere along the line of the ditch, except possibly in the south, adjacent to the stone circle, where a band of high resistance may represent the remnants of an internal bank, though this does not lie parallel to the ditch.

In the crucial area where the northern arc of the stone circle conjoins with the enclosure ditch's southern arc, the geophysics is at odds with the aerial photography. Where the photography suggests a clear gap in the enclosure ditch, perhaps part of a passageway between enclosure and stone circle, the geophysics suggests a continuous ditch. Various interpretations of the geophysics results in this area are possible; further detailed investigation through excavation will be required to fully account for the observed pattern.

Several anomalies were detected within the enclosure, some of which could be the remnants of hearths, though none are readily interpretable as Neolithic features and their distribution extends over the whole survey area. Unfortunately the Neolithic ground surface seems to have been greatly disturbed by later agricultural activity, although the site's micro-topography may have led to better preservation in some places than others. A programme of test-pitting could be designed to address this issue.

A large area of high resistance at the centre of the stone circle could represent remnants of the 'two great heapes of small stones' mentioned back in the 17th century; if so, and if, as seems likely, these 'heapes' were burial cairns, then important deposits could still lie buried here. The bank into which several of the circle stones seem to be set, recorded by the topographic survey, also shows up clearly on the resistance survey, but this doesn't tell us whether the feature is Neolithic or a result of later ploughing. However, the fact that it appears to be continuous even where stones are not (and perhaps never were) present could reasonably be presented as evidence in support of an early origin. In a couple of places, in the south-west (between the circle and Long Meg) and in the north-west adjacent to the enclosure, the resistance data suggest a possible encircling bank with internal ditch around the stone circle. This was completely unexpected; its nature could be investigated through small-scale trial trenching. The geophysics did not detect any sign of the apparent pits within the circle recorded as cropmarks

by Soffe and Clare (Fig. 10.7), or of the linear ditch (part of the supposed Long Meg 'cursus'), the line of which passes through the circle.

Excavations

The 2015 excavations were on a very small scale, being completed in just a single week in the field. Three trenches were dug (Fig. 10.11), details and illustrations of which can be found in the full report (ASDU 2016).

Trench 1 (Fig. 10.12a) was designed to investigate the relationship between the enclosure and the stone circle at a point where aerial photographs suggest a 'passage' between the two. The trench included the presumed location of a missing portal stone, perhaps removed during the disturbance recorded by Stukeley, if this was indeed the location

of an entrance in the stone circle akin to that in the southwest. Although no hint of a socket stone was recorded by geophysics, were one to be found and also dated, this would provide a reasonable estimate for the construction of (at least this part of) the circle.

The section was dug, slightly obliquely, through the enclosure ditch, just west of the possible causeway in order to enable the investigation of a good section across the ditch, with the intention of extending to the east, once the ditch had been firmly located, to ascertain the presence or absence of a causeway and, if one was found, whether it was an original feature of the enclosure or was added later, perhaps at the time the stone circle was under construction. At this point the ditch was found to be up to 6 m wide and 1.5 m deep. The primary fill was stony pink sand very similar to

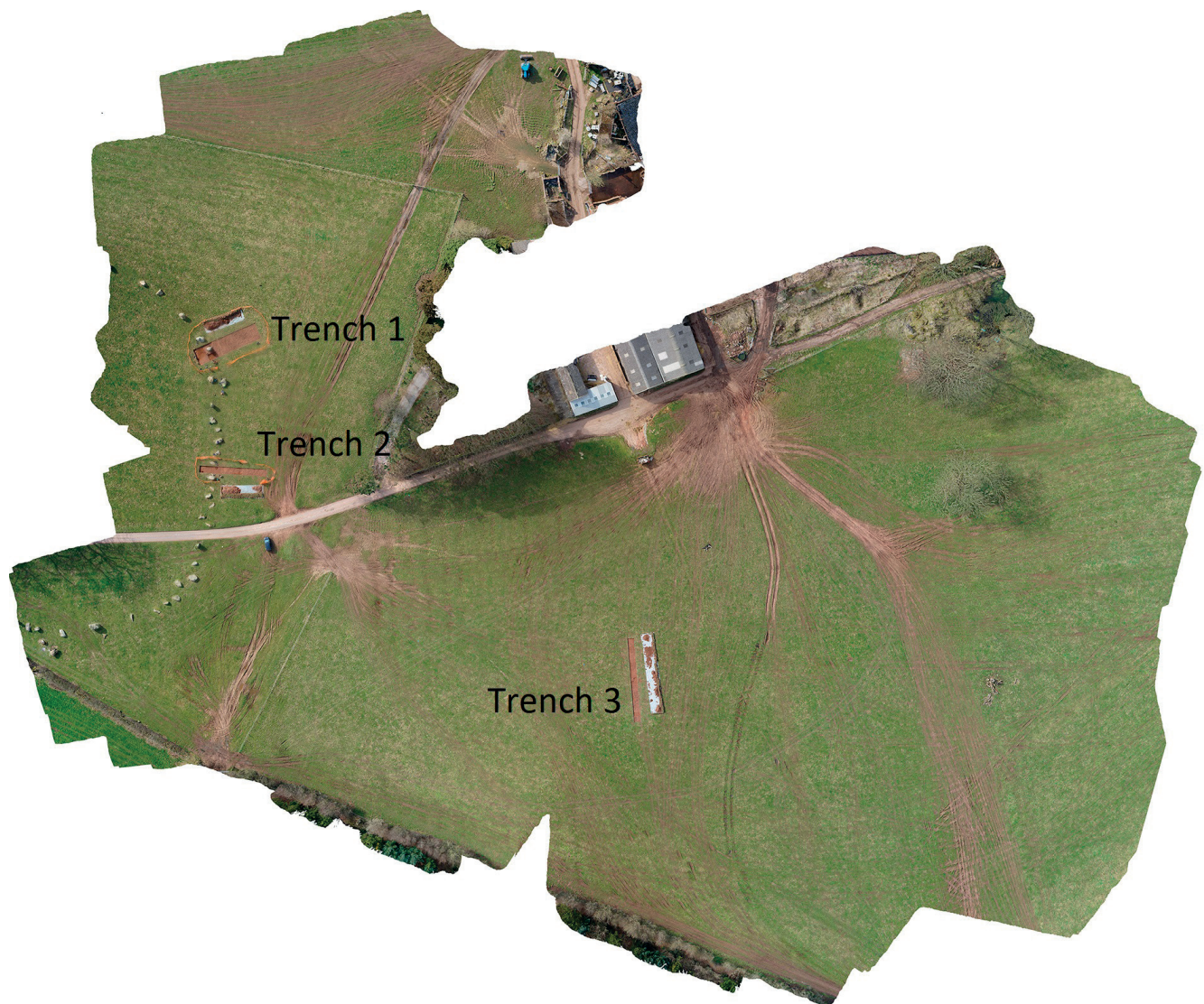


Figure 10.11 Drone image showing the 2015 excavation trenches (north is to the right) (© Jamie Quartermaine).

the natural subsoil through which the ditch had been dug; it appears that the ditch was quite promptly backfilled, allowing no opportunity for anything to accumulate in its base. There was evidence of a substantial recut within the ditch fill. Both cuts were sealed by a layer of very light-grey silty sand into which was cut a pit containing a large quantity of oak charcoal dated to 430–610 cal AD (Table 10.1), demonstrating the ditch was wholly backfilled by this time. Unfortunately, time did not permit the eastern extension of this trench and it is still unclear whether or not a causeway existed here at any stage. Resolving this is a key issue that should be prioritised within any future campaign of fieldwork at Long Meg.

A well-preserved posthole containing five large packing stones, clearly for a quite substantial post, was located just inside the (later) stone circle. A charred hazelnut shell from this was dated to 3950–3720 cal BC (Table 10.1). Close to this, again within the stone circle, was a straight-sided pit containing six possible packing stones, probably another posthole; hazel charcoal from this was dated to 3360–3100 cal BC (Table 10.1). It is not currently possible to say whether these two features represent standalone individual posts or were elements of composite structures, conceivably including a timber precursor of the stone circle. It might be worth experimenting with high-resolution geophysics to investigate the possible presence of further timber settings and other features in this part of the site.

The stone socket (for stone 17a), actually more of a scoop than a socket, was located pretty much exactly where predicted, initially through the presence of packing stones identical to those visible in rabbit disturbance around several of the surviving circle stones. While no artefacts were recovered from it, hazel charcoal gave a date of 3340–3100 cal BC (Table 10.1), remarkably similar to the date from the second pit/posthole noted above.

Finds from Trench 1 include a single base-shoulder from a possible Grooved Ware vessel, but with no clear parallels, from the fill of the recut enclosure ditch. Five undiagnostic fragments of flint, one flake of Cumbrian greenstone tuff, and two small flakes of Arran pitchstone were recovered from the ploughsoil.

Trench 2 (Fig. 10.12b) was designed primarily to investigate the relationship between the enclosure and the stone circle at a point where they appear immediately adjacent to each other, about 30 m east of Trench 1. Here, the ditch was much less substantial than in Trench 1 (up to 3 m wide and only 0.7 m deep), but its fill was similar, with evidence for a recut and everything sealed beneath a layer of light-grey silty sand. Hazel charcoal from the fill of the recut provided a date of 3630–3370 cal BC (Table 10.1). A layer of cobbling overlay the backfilled ditch; while it is tempting to regard this as linked in some way to the stone circle, it is currently undated and its extent is unknown. The trench extended some 10 m into the enclosure interior, but

no features of potential significance were noted other than a couple of undated stakeholes.

Although further excavation will be needed to categorically prove this, it appears as though the circle stones were erected directly on top of the backfilled ditch; this might explain why all the stones in this sector have fallen (assuming they did all stand at one time). Stone 25 had apparently been shaped to a point at its north end, which was presumably set in the ground. Several displaced packing stones were recorded adjacent to the stone which, due to the way it has slumped, now overlies its socket, making this unavailable for inspection or excavation. A sharply-defined cupmark (c. 0.1 m in diameter) was noticed towards the pointed end of the stone; this was presumably buried when the stone was erect. Towards the opposite end of the stone, close to its highest point when erect, a smooth circular hollow c. 0.1 m in diameter, clearly artificial and unlike anything noted on any other stones, was recorded.

Finds from Trench 2 include four fragments of Cumbrian greenstone tuff (two from the ploughsoil and two from the cobbled layer sealing the ditch), two small flakes of Arran pitchstone from the ploughsoil, and a small undiagnostic potsherd from the primary fill of the original ditch cut.

Trench 3 was located over the enclosure ditch, about 125 m north of the stone circle (Fig. 10.11), at a point where the ditch appears well-defined on aerial photographs and a corresponding anomaly was recorded by the resistance survey. Its purposes were to record a section across the ditch, search for any evidence of an internal or external bank, and investigate any differences in character between deposits within and outside the enclosure. No features of potential significance were noted, other than the enclosure ditch. The ditch here was similar in scale and character to that in Trench 1, up to 6 m wide and 1.2 m deep, with evidence of a recut like that recorded in the other two trenches. There was also a suggestion of a late, wide and shallow recut (which may also be present, though less obvious, in Trenches 1 and 2). All was sealed by the same grey-white layer as the sections examined in the other trenches. Two dates were obtained from the primary fill. One of these, from hazel charcoal, is 3950–3790 cal BC; remarkably similar to that from the posthole in Trench 1. The other, from oak charcoal from the same context, is substantially earlier at 5290–5050 cal BC (Table 10.1). This must be residual, presumably representing Mesolithic activity here long before the digging of the ditch. The later date could, of course, also be residual, but the correspondence with the date of the posthole in Trench 1 suggests activity here at this time which may have included the initial digging of the ditch. This should all be resolvable through further carefully targeted fieldwork.

Finds from Trench 3 were sparse: one small flake of Arran pitchstone and half a dozen small fragments of flint, all from the ploughsoil.

Table 10.1 Summary of radiocarbon dates from the 2015 excavations. See the excavation report for more details (ASDU 2016).

Trench	Context and material	Laboratory code	Radiocarbon age BP	Calibrated date (95.4% probability)
1	118 Pit cut into upper ditch fill. Oak branchwood charcoal.	SUERC- 64644 GU39506	1520±29	AD 430–610
1	113 Stone 'socket' of missing portal (= construction of stone circle?). Hazel branchwood charcoal.	SUERC-64638 GU39503	4475±30	3340–3030 BC
1	125 Pit/posthole adjacent to stone 17. Hazel branchwood charcoal.	SUERC-64640 GU39505	4527±29	3360–3100 BC
2	214 Fill of enclosure ditch recut. Hazel branchwood charcoal.	SUERC-64646 GU39508	4697±29	3630–3370 BC
1	120 Posthole adjacent to stone 17. Hazel nutshell (charred).	SUERC-64639 GU39504	5034±29	3950–3720 BC
3	307 Primary fill of enclosure ditch. Hazel branchwood charcoal.	SUERC-64645 GU39507	5063±28	3950–3790 BC
3	307 Primary fill of enclosure ditch. Oak sapwood charcoal.	SUERC-65811 GU40000	6196±30	5290–5050 BC



Figure 10.12 a) (left) Trench 1 from the north, with the partially excavated enclosure ditch in the foreground and Stone 17 beyond. The kneeling figure closest to the camera is working on the socket hole of missing Stone 17a. b) (right) Trench 2 from the south, showing the excavated section of the enclosure ditch between Stones 25 and 26. Note that the enclosure ditch lies directly beneath the now prostrate stones.

Samples from 20 different contexts, from all three trenches, were subjected to palaeoenvironmental analysis. Charcoal was recovered from all the samples, representing at least ten tree/shrub taxa, with oak and hazel the most abundant. No great contrast was noted between samples from early and later Neolithic contexts, and much charcoal was small stemwood or branchwood, indicating the presence of easily collectable material. (In contrast, a

considerable quantity of oak heartwood was recovered from the early medieval pit cut into the backfilled enclosure ditch in Trench 1.) Of particular note was the presence of charred hazelnut shells within most samples from the enclosure ditch, and the complete absence of any evidence of cultivated crops from any Neolithic contexts. Hazelnut shells were not present in the excavated socket stone in Trench 1, but were recorded in the nearby pit/posthole

of similar date, suggesting they were still finding their way onto the site at the time the stone circle was under construction. They could indicate the consumption of wild produce at communal feasts, but assessment of the extent to which cultivated crops may also have been consumed at such gatherings must await further work; the absence of cultivated crops from the excavated samples should certainly not be interpreted as implying a lack of arable agriculture in the vicinity of the site.

Discussion

The Long Meg enclosure: chronology, construction and context

Half a dozen radiocarbon determinations, albeit from secure contexts, certainly do not enable the creation of a reliable chronological framework for the Long Meg complex. However, while some may initially appear rather earlier than expected, and all could to varying extents be residual, the general sequence works well and there is no reason to doubt the accuracy of any of the individual dates (Table 10.1). The earliest, 5290–5050 cal BC (SUERC-65811) from the basal fill of the enclosure ditch in Trench 3, must be residual, as no-one is claiming a late Mesolithic date for the enclosure. Although caution must be exercised in the interpretation of just a single radiocarbon determination, this early date is not without potential importance as it suggests some kind of Mesolithic presence here, perhaps linked to the spring discussed below, several centuries prior to the initial creation of the enclosure. This ties in with work at Neolithic monument complexes elsewhere, where Mesolithic activity has been demonstrated, though the extent to which it may imply a degree of continuity across the perceived ‘Mesolithic-Neolithic divide’ remains very much open to debate. Establishing the nature of Mesolithic activity at Long Meg must await further fieldwork, but seasonal gatherings of communities rooted in the Eden valley, and others from further afield, seem plausible (see also Brown this vol.; Evans *et al.* this vol.). We shouldn’t forget that Neolithic people inhabited an already complex historic environment, imbued with much evidence of those who lived before them, and a perceived awareness of activity here in the distant past may well have been a significant factor in the development of the Long Meg complex.

Another sample from the same context as that which provided the Mesolithic date has been dated to 3950–3790 cal BC. Obviously, this could also be residual but is almost identical to the date of 3950–3720 cal BC obtained from the well-preserved posthole in Trench 1. This post, whatever its function, would have stood just outside the presumed southern entrance to the enclosure (though the nature of this apparent causeway has yet to be ascertained). It could have been substantial and if it stood alone, could have

been decorated, perhaps like totem poles of the American North West, many of which feature complex symbolism of profound significance to those who produced them. The posthole was not recorded by geophysics, and there is currently no way of knowing how many similar features may survive nearby, or indeed throughout the entire complex. It is possible that an as yet unrecognised early Neolithic phase of activity occurred at the site, with the enclosure ditch following somewhat later, but on the basis of currently available evidence it seems plausible that the enclosure (and adjacent ‘post’) could date from the very early 4th millennium cal BC.

The excavations have demonstrated the enclosure ditch to be substantial (up to 6.5 m wide and 1.5 m deep beneath the ploughsoil). Its initial digging would have been a colossal undertaking, necessitating hacking through substantial tree roots (although further work is needed to ascertain exactly when woodland clearance occurred here). As suggested by geophysics and aerial photographs, it varies in scale around its circuit, probably due to a combination of differences in its original form and subsequent erosion due principally to ploughing. The material from the ditch was presumably used to build at least one bank, but no evidence of a bank was found and the excavated sections suggest that this material soon found its way back to its source. It is not known how many causeways existed across the ditch, though aerial photographs suggest one in the south (discussed above) and perhaps another in the north (Figs 10.5–10.7). Intriguingly, these causeways lie just about in line with Long Meg, some 100 m south of the enclosure. On the basis of the aerial photographic evidence, the enclosure ditch could well have been a wide palisade trench (like the later Neolithic example at West Kennet; Whittle 1997), as perceptively suggested by Tom Clare (2009, 81), but nothing was found in the excavations to support such an interpretation. Given the colour of the boulder clay into which the ditch was cut, it is worth pointing out that the freshly cut ditches and any associated banks would have been orangey-red in colour; while not as visually dramatic as white earthworks on chalk grassland in other parts of the country, the redness of the freshly created earthworks at Long Meg was probably not without significance to those engaged in their construction.

A date of 3630–3370 cal BC was obtained from the fill of the recut of the enclosure ditch in Trench 2, suggesting this was open, if only briefly, perhaps half a millennium after the ditch was first dug. During post-excavation work, close analysis of the sections in all three trenches suggested the possibility of a recut in all cases, though the nature of the fill is very uniform and evidence of recutting was not immediately obvious in the field (probably due to the generally poor weather and bad light throughout the excavation). If the entire ditch circuit was recut on at least one occasion (and possibly many occasions), this has profound

implications for the long-term use of the monument. Perhaps, rather than being a permanent structure, the ditch was only ever open for brief periods before being back-filled – this is a key issue that can only be resolved through further fieldwork. As noted above, a very distinctive and as yet unexplained light band was recorded towards the top of each section across the ditch. It was initially thought this might include gypsum, mined locally in historic times and apparently used to great visual effect across the Pennines at the Thornborough henges (Harding 2013, 208–10), but scientific analysis suggests it consists of the same volcanic material as the circle stones.

The finds assemblage recovered is meagre, but nevertheless significant. It is important to stress that none of the lithics came from sealed contexts; all were recovered from disturbed ploughsoil. It is therefore not possible to equate any of them with the radiocarbon dates discussed above, nor to say whether they relate to activity at the enclosure or the stone circle, but it is fair to say that the assemblage appears essentially early Neolithic in character. The lithics (see the excavation report for details) fall into three categories: Arran Pitchstone, greenstone tuff from the Langdale area of the Lake District, and flint, some of which is from Yorkshire.

Artefacts of Arran pitchstone, all sourced from outcrops on the Isle of Arran, have been found at numerous sites throughout Scotland, and are increasingly being recognised in northern England, for example at Stainton West, Carlisle (Brown *this vol.*). Although there seems to have been some 'trade' in pitchstone during the later Neolithic, the majority of securely dated finds are early Neolithic (Ballin 2009; 2015). The five worked pieces found at Long Meg included at least one from each trench, implying a distribution over much of the (apparently early Neolithic) enclosure, potentially amounting to many thousands of artefacts, suggesting the site was integrated into extensive early Neolithic exchange and communication networks focused on the Irish Sea. Whether pitchstone was still reaching the site after the construction of the stone circle is not yet known.

Arran pitchstone has been found in Scottish contexts in association with fragments of Cumbrian (group VI) polished axes, from sources of volcanic greenstone tuff in the central Lake District, notably Pike O'Stickle in Langdale (Bradley and Edmonds 1993; Edmonds 2004). At Long Meg, seven pieces of Cumbrian greenstone tuff were recovered from Trenches 1 and 2, at least four of which are from implements with polished or smoothed surfaces, presumably axes. As with the pitchstone, the recovery of so many fragments from the small areas excavated implies a potentially very large number of Cumbrian axe fragments throughout the entire site, leading to questions about the kind of activity that might have involved the deliberate destruction of so many apparently significant objects.

The flint assemblage totals 17 fragments, including examples from all three trenches. These are mostly small flakes and debitage fragments, all of which are chronologically undiagnostic though one flake does have early Neolithic characteristics. Most could well be of pebble flint from river gravels, but there are five fragments of what has been identified as grey Yorkshire flint. The presence of Yorkshire flint demonstrates cross-Pennine links, in addition to the links with areas to north and west demonstrated by the Arran pitchstone and Lake District tuff. The finds, while unspectacular, therefore emphasise Long Meg's position within an extensive network, probably several centuries prior to the construction of the stone circle.

The Long Meg enclosure belongs somewhere within the widespread and diverse tradition of early Neolithic enclosures extending throughout much of Europe (Bradley 1998, chapters 3 and 5; Darvill and Thomas 2001), of which many are known from southern Britain but relatively few from northern England (Oswald *et al.* 2001). If the date of 3950–3790 cal BC does represent the initial digging of its ditch, then it is rather earlier than might have been anticipated, but certainly not unfeasibly so. Recent work (Whittle *et al.* 2011) demonstrates that the earliest causewayed enclosures of southern England were constructed towards the end of the 38th century cal BC, with many dating from the 37th century cal BC. While the Long Meg enclosure clearly does not have numerous causeways like the classic southern English sites, it is relevant to note that there are also large southern enclosures without multiple causeways. One such example is Bury Hill, Arundel (Sussex), with just a single entrance and a suggested construction date of 3775–3650 cal BC (Whittle *et al.* 2011, 239–42). A large enclosure with no entrance causeways at Warth Park, Raunds (Northamptonshire) may be another; recent excavation has provided a date of 3965–3800 cal BC, though establishment of its detailed chronology must await further dates (Gill Hey pers. comm.). Perhaps more relevant to Long Meg, given the links between Cumbria and Ireland suggested in this paper and elsewhere in this volume, is the enclosure at Magheraboy, County Sligo, which could be as early as the 40th or 39th century cal BC (Whittle *et al.* 2011, 574–85).

The suggestion from the excavations that the enclosure ditch was entirely recut on at least one occasion certainly brings to mind the multiple ditch cutting episodes recorded at earlier Neolithic enclosures elsewhere, but further work, including the excavation of at least one stretch of the ditch (rather than just narrow sections) and some areas of the interior, will be necessary if we wish to approach an understanding of the true nature of the monument. The recent recognition of several other Cumbrian enclosures of apparent Neolithic date (Evans 2008, 69–71, appendix 2.2; Oswald and Edmonds *this vol.*), and the possibility that others will eventually be recognised throughout northern England, may in due course provide something of a context for the Long

Meg enclosure. However, these sites demonstrate much variety in form and location, and interpretations of them without further fieldwork are destined to remain ambiguous. As noted by Darvill and Thomas (2001, 13), ‘throughout north-west Europe, Neolithic enclosures are a major element of the archaeology of the period, but...they are extremely diverse in their archaeological manifestation. Such diversity may...be argued to relate to the range of actions and events that took place at and around these sites.’ At present it is simply impossible to say with any certainty why the Long Meg enclosure was built or how it was used, though it must relate in some way to the profound developments associated with introduction of agriculture and Neolithic ways of being.

Long Meg: the greatest of the great Cumbrian stone circles

The date of 3340–3030 cal BC from the socket for stone 17a is remarkably consistent with the date of 3360–3100 cal BC obtained from a nearby posthole or pit set just within the stone circle, the purpose of which is not known (Table 10.1). These two dates certainly suggest that activity of some kind was taking place here at this time; it is not unreasonable to suggest that this may have included construction work on the stone circle.

There is only one comparable dated stone circle in the region, although it does not approach Long Meg in terms of scale. This is at Gretna, a little over 40 km north-west of Long Meg, on the north bank of the Esk close to its confluence with the Solway. It lies close to modern north–south (M6/A74) and east–west (A75) roads, which probably follow overland routes that would have been significant in the Neolithic, linked to waterborne transport on the Esk, the Solway and the Irish Sea. Sadly, only a couple of stones survive, of an original number of at least nine, the site having been decimated by 19th-century agricultural ‘improvement’. The largest of the surviving stones, the Lochmaben Stone, 2.3 m in height, toppled in 1982, and prior to its re-erection its socket was excavated (Crone 1983). No artefacts were found, but a sample of mixed charcoal from the socket provided a radiocarbon date of 3500–2850 cal BC (GU-1591; 4475±85 BP). While the date from Lochmaben is in many ways far from ideal (being from a mixed charcoal sample, and having such a wide range), its remarkable similarity to that from the stone socket at Long Meg (Table 10.1) certainly suggests that both monuments could have been constructed at about the same time. Further north, some Scottish stone circles (Stones of Stenness, Balbirnie, Calanais, Temple Wood) have been dated to around 3000/2900 cal BC (Griffiths and Richards 2013). To the south, in Wessex, the earliest stone circle at Stonehenge has been dated to 3000–2900 cal BC (Parker-Pearson 2012, 309), and an OSL date for Avebury suggests that stones were being erected here as early as 3120 ± 350 cal BC (Rhodes and Schwenninger 2008, 164–5; Josh Pollard

pers. comm.). The circle at Waun Mawn, Pembrokeshire, apparently largely dismantled to provide bluestones for Stonehenge, seems to date from 3400–3200 cal BC (Parker Pearson *et al.* 2018; Josh Pollard pers. comm.). No doubt the chronology of stone circles will be refined through future fieldwork, but for now it seems that Aubrey Burl may well have been spot-on when he suggested towards the end of the last millennium that Long Meg ‘may be one of Britain’s oldest stone circles, erected in the years before 3000 BC’ (Burl 1994, 10).

When exactly was Long Meg herself added to the complex, and when were the carved motifs added to (what is now) her west face? These important questions are currently unanswerable, though some fascinating speculation is possible (Frodsham 1996). We know from sites elsewhere (Morwick on the Coquet; Hawthornden on the North Esk; possibly also the original context of the Calderstones on the Mersey), that spirals were occasionally added to red river cliffs, presumably at places of particular significance. We have no way of dating these sites, but if the spirals and other motifs are related to Irish passage grave art, as they seem to be, then it seems reasonable to infer a date in the middle Neolithic, perhaps a century or two prior to 3000 cal BC. This is very close to the date suggested above for the construction of the stone circle, though it could be that the motifs we now see on Long Meg were originally carved onto the river cliffs, later being quarried and installed within the monument complex. (No carvings have been noted on the river cliffs, but this is not surprising given the extent of natural erosion and the disturbance associated with the construction of Lacy’s Caves in the 18th century.) Some light could potentially be shed on this through the excavation of the below-ground portion of Long Meg’s east face; should further motifs be found here, rather less eroded than the currently visible ones, then this would demonstrate their creation prior to the stone’s erection at its current location. None of this begins to address questions of why the motifs exist here, how they might relate to the comparable motifs at Copt Howe in Langdale (Bradley and Watson this vol.), what they may have ‘meant’ to people who made and saw them, or how such ‘meanings’ may have changed through time.

Close examination of Long Meg demonstrates how she may have been quarried from the bedrock (presumably the river cliffs) of which she was once part, using a plane of weakness in the rock occupied by a vein of quartz. There are some hollows in her south-east angle (visible in Fig. 10.4) that may be a result of the insertion of timbers into the quartz vein, to help detach her from the bedrock. Having been quarried, Long Meg was presumably transported to the monument complex along the valley scoured out by the stream flowing from the spring at the enclosure – a route (discussed further below) that may have been imbued with spiritual significance from

very early in the site's history. Burl (1988, 196–7) suggests she may have stood in her current location for quite some time prior to the construction of the stone circle, with the latter designed to incorporate her within the complex's key winter solstice alignment. If so, the circle may have had to be squeezed in between Long Meg herself and the enclosure to the north, thus perhaps accounting for its 'squashed' circumference.

The Long Meg stone circle is often classified as one of the great Cumbrian stone circles, of which there are several, Castlerigg and Swinside being the most celebrated of the others (Waterhouse 1985; Farrah 2008). Long Meg is much larger than any of the others and may have greater time-depth (although all other sites remain poorly studied and future fieldwork may demonstrate earlier activity at some). This pre-eminence is emphasised by Burl (1999, 42–3) who estimates a minimum labour force for the construction of the stone circle (based on the size of the largest standing stone) of 135, whereas the figure for Castlerigg is about half this, at 70 (the average weight of Long Meg's Daughters is estimated to be 9 tonnes, with the largest weighing a whopping 30 tonnes; Castlerigg stones average 4 tonnes, with the largest being 15 tonnes). Burl also notes the difference in scale between the two monuments in terms of internal area, giving figures of 8,011 sq. m at Long Meg with a diameter of c. 110 m, and just 722 sq. m and 33 m diameter at Castlerigg. The difference is dramatic. Other 'large' Cumbrian stone circles range in diameter from 27 m at Grey Croft on the coast to an estimated 50 m at Broomrigg in the Eden Valley (Evans 2008, 49–62). Long Meg is clearly on an altogether different scale from these sites, though we should note that the magnificent Mayburgh 'henge', with a diameter of 170 m (Topping 1992), and the now sadly decimated complex, including a great avenue of standing stones, at Shap (Clare 2007, 80–3) would have been rivals in terms of grandeur. Other Cumbrian sites have been destroyed (*e.g.* the apparently very large stone circle at Lamplugh) and others have recently been discovered and remain to be studied in detail (*e.g.* the Summer Hill enclosures, on the coast near Bootle). These sites are all important, but on the basis of currently available evidence there is nothing to challenge Long Meg's status as the greatest of the great Cumbrian stone circles.

Long Meg: ultimate origins

Why did the Long Meg complex develop at this specific location? As noted above, the enclosure was constructed around a low basin, focused upon the spring from which a steady stream of water flows constantly away to the north. There are reasons for regarding this spring as 'special': the water emerges from the ground here before flowing down a deeply incised valley (a remarkably obvious landscape feature on LiDAR imagery; Fig. 10.13) to join the Eden close

to the spectacular red sandstone river cliffs at Lacy's Caves. (There were no caves here in Neolithic times; they were created artificially in the 18th century.) The significance of this place lies not only in the visually striking river cliffs, which stand in marked contrast to the generally open nature of the Eden's channel downstream from this point, but also in the presence of rapids in this stretch of the river that would have been impossible to navigate by boat. Upstream, the Eden is navigable to Appleby and beyond, with a link via the River Eamont and Ullswater towards the Langdale 'axe factories' at the heart of the Lake District. Downstream, although there are a few short turbulent stretches (such as at Armathwaite) the Eden generally flows in a wide channel and is navigable to the Solway; it thus provides a direct link between Long Meg and the numerous Neolithic sites of the 'Irish Sea zone' (Cummings and Fowler 2004).

It is worth briefly mentioning again the spring at Longbank Wood, almost due west of the stone circle, the water from which flows down a steep-sided valley (clearly visible on Fig. 10.13) not dissimilar to that discussed above, though on a much smaller scale. This appears to be linked to the site of the stone circle by the long ditch recorded from the air by Soffe and Clare (1988; see Fig 10.7). Although, as noted above, recent work has all but discounted the possibility of this being a cursus, it remains possible that it could be of Neolithic date, potentially contemporary with the enclosure, and could relate in some way to the link between the monument complex and the Eden.

What makes the Long Meg site especially strategic, in addition to its widespread connections via the Eden, is its location on key overland routes through the North Pennines to north-east England (including Yorkshire) and the North Sea (Fig. 10.14). The early Neolithic enclosure was thus linked into networks that enabled the exchange of Arran pitchstone, Langdale axes and Yorkshire flint (discussed above), while the stone circle was tied into an extensive network of later Neolithic ritual complexes from Orkney to Brittany, including inland places that could be reached by boat, such as Wessex. This provides a context for the presence of 'Irish' type rock art on Long Meg herself, and indeed the stone circle's midwinter solar alignment which links it with other great monuments including Stonehenge in Wessex, Newgrange in Ireland, and Maeshowe on Orkney (Frodsham 2008, chapter 2). Far from being any kind of cultural backwater, it seems that Long Meg was a significant hub, quite possibly throughout the Neolithic, with links extending far and wide.

The recent excavations suggest that the construction of the stone circle post-dates the original digging of the enclosure ditch by several centuries, during which there is no certainty of continuous activity here, although the mid-4th-millennium date from the recut ditch may reasonably be cited in support of some degree of continuity. It now appears clear that part of the northern sector of the

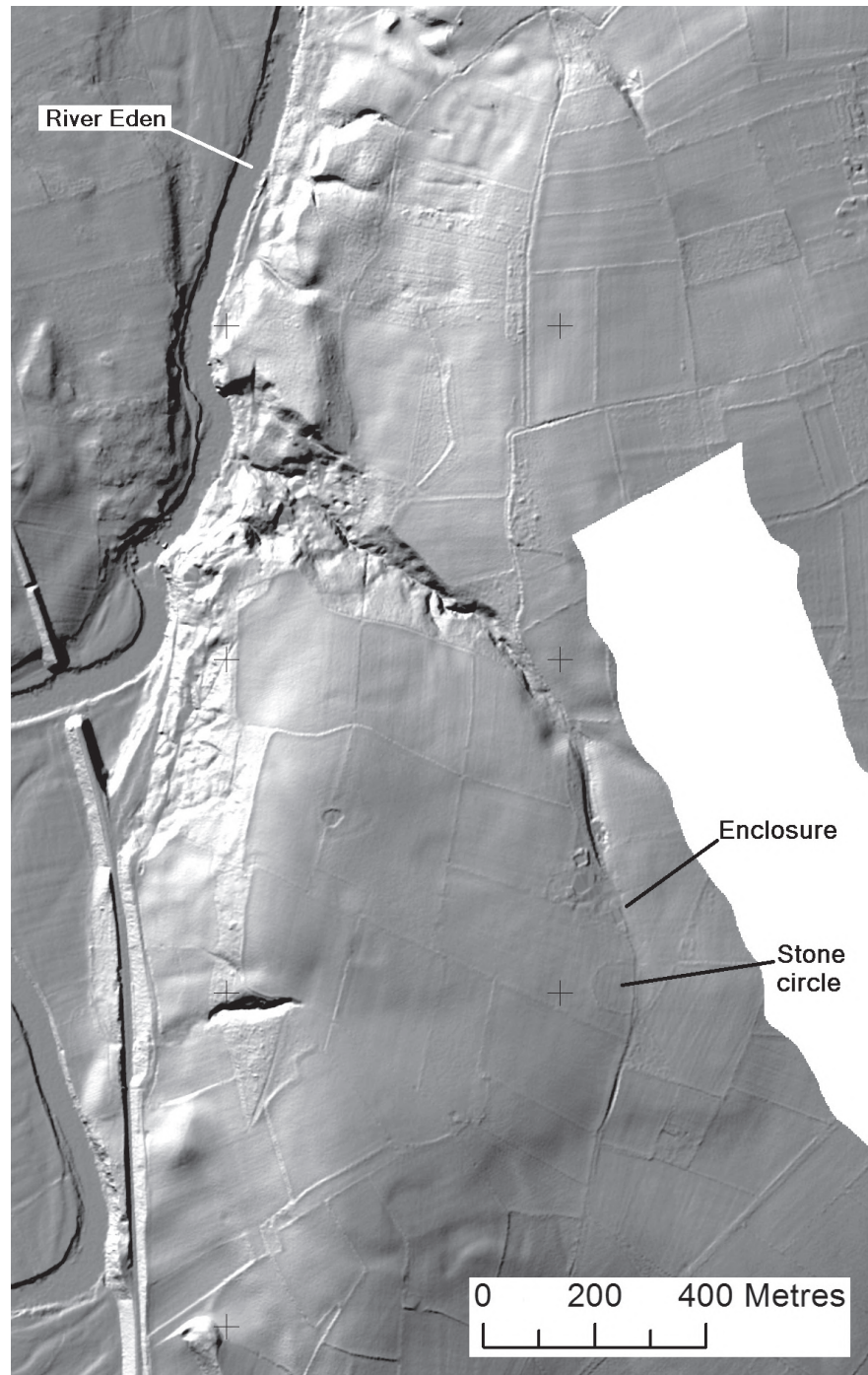


Figure 10.13 Digital Terrain Model (DTM) of the landscape around Long Meg, based on 2 m resolution LiDAR data provided by the Environment Agency. With trees and buildings removed, the dramatic nature of the steep-sided natural valley between the enclosure and the Eden is revealed. The blank area east of Long Meg is due to a gap in LiDAR coverage.

stone circle was constructed directly over the backfilled enclosure ditch, yet there appears (on aerial photographs) to be a passageway between the enclosure and the stone circle, suggesting a degree of contemporaneity between the two. It was beyond the capacity of the recent excavations to entirely resolve the nature of the structural and chronological

relationship between the enclosure and the stone circle, but the results do at least demonstrate that this will be possible through further small-scale excavation. Whether or not evidence of activity throughout the 4th millennium survives buried within the enclosure's interior, the choice of this location for the stone circle was clearly dictated

by the presence of the old enclosure. In considering long-term continuity of activity at such 'special places', Mark Edmonds observes that:

How far tradition was respected when people built anew is something that we do not know. The new monuments may have been both a break with and a nod to the old, just as early churches implied deep roots by imposition on prehistoric sites that were prominent in local imagination...What these accumulations do suggest is the existence of traditions of gathering, an idea of assembly in particular places that was maintained across generations (2004, 181).

Long Meg was surely one of these 'particular places', its significance conceivably extending back into the Mesolithic, rooted ultimately in the spring upon which the early Neolithic enclosure was focused, and the natural valley linking this with the Eden. Its location is thus intimately bound up with aspects of the local landscape, while its wider significance related to the waterborne and overland transport networks within which it functioned as a key node. While we tend to explain such things in terms of 'economic practicality' it is important to remember that in the Neolithic mind they would also have been intimately bound up with concepts we would today define as 'spiritual' and 'mythical'. Once established, the site's importance was probably soon beyond question, becoming further enhanced through the generations until, when the time came to construct the great Cumbrian stone circles, the greatest of them all simply had to be here rather than anywhere else.

Long Meg and other later Neolithic complexes

It is clear that Long Meg displays many of the key characteristics of major British later Neolithic complexes, as outlined by Gordon Noble (2006, chapters 6 and 7; 2007). While each complex is unique, they tend to display general characteristics that can be broadly grouped into five categories, as follows.

1. Time depth

Research at several Neolithic complexes has demonstrated activity long before the commencement of work on any monuments, often extending back into the Mesolithic. It seems these places may have acquired special significance as meeting places during the seasonal round; places at which people who may have spent other times of the year far apart gathered to spend perhaps a few weeks together on an annual basis. Natural landscape features, such as the spring at Long Meg and the stream flowing from it into the Eden, may thus have acquired a spiritual dimension back in Mesolithic times, and been the obvious locations for monuments when the time eventually came to build them. At Long Meg, the enclosure is potentially very early Neolithic, with still earlier activity suggested by the Mesolithic radiocarbon date. The place was

clearly of some significance long before anyone thought of building a stone circle here.

2. Major routeways

All the great complexes, rather than being at the heart of possible 'territories', are located at strategic places in a network of coastal, riverine and overland transport routes. 'These places were neither in central or peripheral locations, but at points crucial to movement between regions' (Noble 2007, 65). Noble has noted the correlation in Scotland between Neolithic complexes and main roads of Roman and modern date; there can be no doubt that their location on major routes was a key factor in their development. He further observes that 'these complexes were not merely the centralised power base of dominant social groups, but were instead crucial to the interaction between communities in the Neolithic and the monuments constructed there were the symbols, and products, of those interactions' (Noble 2007, 65).

Noble notes that many monument complexes (including in Wessex, which can be reached by any of the three River Avons) are located in relation to 'trans-peninsular' routes, 'where dangerous seas can be avoided through travel along inland river routes' (Noble 2007, 64). Long Meg, as we have seen, occupies a strategic place in relation to the Irish Sea, the Lake District axe factories, and north-east England: the Eden, in combination with the Tyne, Wear, Tees, Ouse and other great rivers east of the Pennines, provided good cross-Pennine routes, even if the rivers were only partly navigable and parts of the routes had to be negotiated on foot. While comparisons with Wessex may be wholly invalid, it is also possible to argue that the natural valley between the Long Meg enclosure and the Eden could have played a role comparable in some way to the artificial 'avenues' linking Durrington Walls and Stonehenge to the Avon (Parker Pearson 2012).

3. Links with distant places.

Linked to their strategic locations on routeways, major monument complexes are associated with concentrations of 'exotic' artefacts, made from non-local materials, notably stone axes. In Cumbria and surrounding areas, it has long been recognised that monuments are located in relation to key natural routes through the landscape, a pattern that has been linked to the so-called 'axe trade' of the earlier Neolithic (Bradley and Edmonds 1993), whereby axes from the Lake District found their way to distant places. Although we don't know how these objects came to reach their final destinations, their presence at places far distant from their sources suggests the movement of people, some of whom may have travelled great distances, implying established links between distant communities. At Long Meg, the discovery of Cumbrian axe fragments, flakes of Arran pitchstone, and Yorkshire flint, clearly ties this place into this network. The results of recent fieldwalking in the



Figure 10.14 Aerial views illustrating Long Meg's landscape context in relation to the River Eden and the North Pennines; a) looking over the site from the north-east, across the Eden towards the Lake District (© Aaron Watson); b) looking over the site from the south-west towards the North Pennines on the eastern horizon (© Aaron Watson).

vicinity of Long Meg will provide a local context for these finds, and are awaited with interest (Annie Hamilton-Gibney and Aaron Watson pers. comm.) In addition to artefacts from distant sources, the presence of 'Irish' rock art on Long Meg provides further evidence of contacts with far-away places. Close links between the Eden Valley and Ireland have been discussed previously (Watson and Bradley 2009) and must certainly have existed, even if their nature remains ambiguous. Links between Cumbria, north-east England and south-west Scotland, from early Neolithic times, have been considered by Clare (2009).

4. *Merging the sacred and the profane.*

Many of the great Neolithic monuments incorporate solar alignments, in particular to the rising or setting sun at mid-winter; those at Stonehenge, New Grange and Maes Howe are well known, but there are many more. The purpose of such alignments must have been a desire to demonstrate the unity of people, landscapes and the heavens in some kind of timeless cosmic harmony (Ruggles 1999; Frodsham 2008, chapter 2). There can be no doubt that the main axis of the Long Meg stone circle is towards the setting sun at the winter solstice, suggesting that this may have been when the most important gatherings took place here. This is considered further below.

5. *Early Bronze Age burials and the waning of the great Neolithic monuments.*

Details of when and why Cumbria's Neolithic stone circles faded in importance, and were eventually abandoned, remain sketchy, but during the Chalcolithic and early Bronze Age they seem to have attracted burials (Burl 1988, 187). This is a phenomenon shared with many Neolithic ceremonial monuments elsewhere (Barnatt 1989; Bradley 1998, 132–47), and probably relates to the 'transformation' of the past, perhaps connected to the emergence and legitimisation of new forms of authority (Noble 2006, chapter 8). Within the stone circle at Long Meg, the 'two great heapes of small stones' and 'giant's bones' recorded in the 17th century may well relate to burials of this period. Nearby burial monuments, notably Little Meg, Glassonby and Old Parks, all of which (like Long Meg) incorporate rock art related to the Irish Passage Grave tradition, seemingly belong to this general period and may owe their origins in large part to the proximity of Long Meg. It is not known for how long the stone circle at Long Meg retained any special significance, but it is surely inconceivable that such a colossal structure could have been entirely ignored by local people throughout later prehistoric and early historic times. The date of 430–610 cal AD from the recent excavations (Table 10.1) demonstrates some kind of activity here, though its nature is unknown. A church, possibly part of a small monastic complex, seems to have existed at nearby Addingham by the 7th century; could it be that the great

old circle retained some kind of sacred significance in the minds of local people, albeit perhaps intermittently, right through to early medieval times? As with so much of Long Meg's story, meaningful discussion of her demise must await further fieldwork.

It can thus be seen that Long Meg meets the key criteria for these great Neolithic complexes. Geographically the site lay at the heart of Neolithic Britain, though the extent to which Neolithic people were aware of this, or concerned about it, cannot be known. It must, however, have been regarded during the later Neolithic (and perhaps earlier) as one of the most important places in the central zone of the British Isles.

The Thornborough henges on the River Ure near Ripon (North Yorkshire), on the east side of the Pennines, some 90 km south-east of Long Meg, have similar characteristics to the Scottish complexes discussed by Noble, including their strategic location and the incorporation of solstitial and other significant alignments. Based on the results of a long-term fieldwork project, Jan Harding suggests that Thornborough was 'part of a system of late Neolithic trans-Pennine exchange linking Cumbria and eastern Yorkshire' (Harding 2012, 43), noting also that the regional complex (which includes further henges and the Devil's Arrows standing stones) may have been:

a place of renown where different worldly elements came together to mould a 'sacred landscape'. It was a place favoured by the spirits or gods of water and the underworld – and maybe a place intimately linked with the celestial skyscape. To travel here was not simply about visiting venues at which exchange could freely occur, but to undertake a journey to a landscape whose very holiness sanctified activities like the socially unfettered circulation of stone axes and Yorkshire flint. This is reminiscent of pilgrimage... (Harding 2012, 49)

While there are many differences between Long Meg and Thornborough, much of the above speculation is relevant to both. Although key issues relating to the chronology of both complexes remain to be resolved, it may well be that both places were linked via an established network of navigable rivers and overland tracks incorporating a number of cross-Pennine routes, one of which may have been via Upper Teesdale, in which case the recent recognition from LiDAR of a possible henge at Cotharstone may be significant (Frodsham 2017b), as may other monuments in the North Pennines including recently discovered 'hengess' at Garrigill and Allendale (Ainsworth *et al.* this vol.).

One further relationship between Long Meg and Thornborough must be stressed here; the apparent significance of the winter solstice in the architecture of both. As noted above, the winter solstice was clearly a key event in the Neolithic calendar, as illustrated by unambiguous references to it in the architecture of several monuments

throughout the British Isles. Jan Harding considers this in relation to both Thornborough and Long Meg:

That monuments immediately to the east and west of the Pennines were similarly linked with the ancestors, spirits or gods of the sky, suggests the same beliefs and practices spanned this upland chain, its flanking lowlands, and the Cumbrian mountains and Yorkshire coast beyond. Many worlds were being drawn together into a single symbolic universe through shared interests and practices (Harding 2013, 215).

Long Meg as a long-term communal project: process versus product

Although Long Meg was surely of significance to people throughout the year, perhaps it was at midwinter that the main gatherings occurred here, and maybe also when most ‘construction work’ took place. It is interesting to recall George Smith’s observation back in 1752 that some of Long Meg’s Daughters, rather than having fallen, appear never to have stood erect (Smith 1752a). He was implying that the monument may never have consisted of a carefully designed ring of ‘standing’ stones, and that the transporting of the stones to the site (though we still don’t know from where) was perhaps of more importance than what happened to them once they were there. In this, he was way ahead of his time. Mike Parker Pearson (2012, 266), writing two and a half centuries later with specific regard to Stonehenge, doubts that ergonomic planning and labour-efficiency were high on the Neolithic agenda for such projects, the key point of which was ‘to have hordes of people involved’. Similarly, Colin Richards (2013, 3–9) stresses the importance of considering ‘processes of construction’, rather than any perceived ‘end result’, when seeking to understand the ‘purpose’ of our great stone circles. He notes that:

In certain forms of Neolithic mentality we may be witnessing a complete reversal of our own experiences of architecture. In such a reversal, the process of making becomes the focus and function of the stone circle...For substantial stones being dragged over some distance, the amount of preparation was likely to have been of great magnitude and in some cases these projects may have taken generations to organise and fulfil.

Such ideas have yet to be considered in detail with regard to Cumbrian stone circles. Long Meg’s Daughters, although they display much variety of form, are nearly all of rhyolite*, originally from the Lake District and generally assumed to have been deposited in the Eden Valley when the glaciers melted at the end of the Ice Age (Elizabeth Pickett pers. comm.). People presumably found them in a range of different locations, some conceivably at considerable distances from the monument, and it is quite possible that some were brought several kilometres from the high ground to the west by human

effort rather than ice. Perhaps some were floated on rafts down the Eden. Such suggestions should not come as a great surprise given that we know the Stonehenge bluestones were dragged or floated a far greater distance from Pembrokeshire to Salisbury Plain (Parker Pearson 2012). Although the Long Meg stone circle and Stonehenge differ in many ways, they also have much in common and it is tempting to see both as huge communal projects enabling the construction of eternal stone monuments intended to commemorate the ancestors (Parker Pearson and Ramilisonina 1998a; 1998b).

Certainly, at Long Meg, the relationship of the stone circle to the earlier enclosure, the presence of apparent entrances with portals at the south-west and north-west, the alignment on the winter solstice, and the location of particularly imposing stones at approximately (but not exactly) the east and west points of the circle’s perimeter, all suggest a degree of planning prior to the commencement of construction. Aubrey Burl believed the massive western stone (stone 11) was accurately sited to bisect the points of the winter and summer solstice sunsets on the western horizon as seen from the centre of the circle; due to the slope of the horizon this does not mark true west as measured by modern science, but ‘what looks like cardinal inaccuracy to today’s investigator was solar precision to the people who set up the stone’ (Burl 1999, 42). Despite such detailed initial planning, however, much of the site, as we see it today, could well be the result of more *ad hoc* activity, conceivably extending over many generations and possibly linked to the kinds of seasonal gatherings suggested above. Given the suggestion that the enclosure ditch may have been redug and backfilled a number of times, it is quite possible that such episodic communal activity at Long Meg could have roots extending back into the very early Neolithic, even though the nature of activity here must have changed through time. In seeking to further our understanding of the complex, and in particular the stone circle, it may well prove valuable to consider the site as an ongoing ‘project’, perhaps never intended to be ‘finished’, rather than as a ‘grand design’ based on some kind of architect-inspired blueprint.

Long Meg: towards the future

We must, of course, avoid falling into the trap of studying important sites such as Long Meg in isolation, especially given the wealth of Neolithic sites throughout Cumbria and the exciting opportunities these offer for wide-ranging integrated research programmes (Evans 2004; 2008; 2011; Hodgson and Brennand 2007; Evans *et al.* this vol.). However, Long Meg undeniably offers huge potential for further research: while recent fieldwork has begun to tease out some of her secrets, she undoubtedly has much more to tell. An outline research framework (Frodsham 2017a) stresses the need to link meaningful research at Long Meg with programmes of conservation and public interpretation, and to ask questions

* This is wrong! See the 2023 geological survey report for discussion of the lithology of the Daughters.

on four different levels. First, we need to know more about the form and chronology of the site itself. Second, we need to explore the surrounding landscape, including the immediate landscape setting and the wider Eden valley. Third, we must consider Long Meg's role within exchange and communications networks linking the 'Irish Sea zone' with north-east England, including Yorkshire. Fourth, we must address Long Meg's place within the extensive network of key Neolithic ceremonial complexes extending from Orkney to Brittany, several of which are linked through architectural alignments with the winter solstice as well as through shared ceramic and lithic traditions. In comparison with these places, Long Meg has enjoyed scant archaeological attention over recent decades. She deserves more; much more.

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