TOPOGRAPHIC SURVEY OF THE SURVIVING ROUND BARROWS AT THE THORNBOROUGH MONUMENT COMPLEX, NORTH YORKSHIRE

DR JAN HARDING & MR BEN JOHNSON
SCHOOL OF HISTORICAL STUDIES
UNIVERSITY OF NEWCASTLE

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ABSTRACT

The report describes the topographic survey of five of the six previously known surviving round barrows at the Thornborough monument complex. Work was completed with the aim of providing a detailed and up-to-date record of the barrows — all but one of which are under cultivation — to assist in the accurate assessment of these badly damaged earthworks. Major themes are the monument's specific locations in relation to natural topography, the state of preservation recorded for each of these upstanding features, and the implications of continuing agricultural activity. Extensive reference is made to the geophysical survey completed at the surviving round barrows. Of particular note is the likely discovery of a new barrow.

1. INTRODUCTION

1.1 Location, topography and geology

The area discussed is based between SE2677-3282 and focused around the Neolithic-early Bronze Age monument complex at SE285795 (centred), which comprises three large henges, a definite cursus and a possible cursus, a 'long mortuary enclosure', at least nine round barrows, two double pit alignments, contemporary settlement and other features or finds of archaeological significance (Fig. 1). These sites are described in Harding & Johnson (2003).

The topography of the landscape is largely flat or gently undulates between 35 and 45 metres OD (Fig. 2). However, it does rise steeply to the west, between the villages of West Tanfield and Well, to a height of over 135 metres. The River Ure lies to the south-west. The soils are typical brown earths, with calcareous brown earths to the west, and alluvial gley soils to the north. The drift geology is predominantly undifferentiated fluvio-glacial terrace deposits, with undifferentiated river terrace deposits around the River Ure and isolated pockets of till and peat to the west and north respectively. The solid geology comprises Lower Magnesian Limestone to the west, Middle Marl through the central areas, and Upper Magnesian Limestone to the east.

All the monuments lie on the fluvio-glacial terrace deposits along a slight north-south decline towards the River Ure. The primary foci of the monument complex are the three massive henges built 0.75 kilometres apart, along a north-west to south-east axis. Nine definite round barrows are known from the landscape: four formed the linear Three Hills Barrow group c. 0.5 kilometres to the east of the Northern Henge (Fig. 1; 1-4); two were immediately to the west and south-west of the Central Henge, on opposite sides of the Cursus (Fig. 1; 10 and 11), but were destroyed by gravel extraction with no archaeological mitigation; one was on the mid-point of the axis between the Central and Southern Henges, marking out the northern end of the Southern Double Pit Alignment (Fig. 1; 5); a further barrow lies at the southern end of the Southern Double Pit Alignment immediately to the west of the Southern Henge (Hollin Head) (Fig.1; 7); and a double ditched barrow is located over 0.5km east-south-east of the Southern Henge (Fig. 1; 6). Five possible round barrows are also known as ring ditches: the two are nearly a kilometre south-east of the Southern Henge on and near the axis of the three henge monuments (Fig.1; 8 and 9); and three ring ditches were excavated to the north of the Northern Henge (Fig. 1; 12, 13 and 14) prior to gravel extraction.

2. BACKGROUND

2.1 Archaeological history

The barrows, like the other, larger monuments at the complex have seen very limited antiquarian and archaeological investigation. The earliest recorded activity was the investigation of four of the barrows, at Centre Hill and three at the Three Hills barrow group (cf. 3.1 below), by the Rev. W. Lukis in 1864 (Lukis 1870, 116-128). Lukis report is cursory and no record of the extent of the excavations exist. However he did uncover what are assumed to be the primary burials at each site, cremations in probable Food Vessels or Beakers at Three Hills and an inhumation in a coffin at Centre Hill. No further work appears to have been undertaken until 1952 when L Grinsell undertook a survey of the barrows (Thomas 1955, Appendix II, 443), although again the data is cursory and briefly describes the barrows dimensions and state of preservation. The only other round barrow excavations were undertaken at three ring ditches in Nosterfield quarry in 1994, prior to gravel extraction (Field Archaeology Specialists Ltd, unpub. 2003).

2.2 Aims and objectives

A topographic survey was undertaken in the summer of 2003 as part of the Thornborough Project funded by English Heritage through the Aggregate Levy Sustainability Fund. The aim was the creation of a detailed, accurate and up-to-date assessment of the surviving barrows prior to evaluative excavation and was complemented at each site by the completion of geophysical survey (Biggins 2003). The information gathered will be used with previous topographic and geophysical survey at the henge monuments, 'long mortuary enclosure' and southern Double Pit Alignment to further inform conservation and management issues at the complex.

2.3 Methodology

A Geotronics Geodolite Total Station was employed to produce detailed contour survey data and surface profiles of features as appropriate. At Three Hills Barrow Group and at Centre Hill detailed contour data was collected using intelligent point selection across areas totalling 3.2 hectares and 0.9 hectares respectively. At the double ring ditch barrow the topography of the feature was more ephemeral than the plough ridges. A profile 94 metres long, with a point every metre, was taken along the line of the adjacent track across the known location of the barrow. All data was processed using Landscape Survey Systems v8.2 and Autodesk Land Development Desktop software packages to a common survey grid, that was referenced to the OS National Grid. All fieldwork was completed in late July 2003.

3. RESULTS

3.1 Three Hills (Figs. 3, 4 and 5)

NGR: SE2848079980, SE2859080130, SE2855080070 and SE2860280160
The barrows at Three Hills are located on a low gravel ridge that rises out of the surrounding gravel terrace to the south-east of the northern henge. The ridge has been cut on three sides by palaeochannel activity, leaving a triangular mound 268 metres south-west to north-east, 132 metres wide at its south-west and tapering to the north-east. It is 1.5 metres higher than the surrounding terrace, with gentle slopes all around, apart from the south-west side where they are somewhat steeper. The barrows, sited in a line on the ridge top, were located by both the contour and geophysical surveys (Fig. 3). It is clear that all the monuments have been badly affected by ploughing.

It would appear, when combining the available data from Lukis, Grinsell, and this project, that there may be at least four barrows at Three Hills (fig. 4), one more than normally cited by the sources. Lukis records just three, despite being an accurate and prolific surveyor (c.f. Atkinson, 1976; Roughley *et al*, 2002), who undertook many surveys across Britain, particularly in Wiltshire, Hampshire and Oxfordshire, and as far afield as the Carnac Alignments in Brittany (Atkinson, 1976). His plan of Thornborough is certainly accurate (Lukis, 1870, 127), although its similarity to the 1860 OS map suggests this was the source of much of the data: five of the six recorded barrows, the three henge monuments, and the field boundaries, correlate extremely well with data collated in 2003, although he does not include the Double Ring Ditch barrow (fig. 1; 6) and that to the south of the cursus (fig. 1; 11), despite them being present on the 1860 OS map. However, a barrow which is visible from aerial photography and the topographic and geophysical survey of 2003, at the southernmost end of the ridge, is not plotted by Lukis, and he locates a barrow to the north of the northernmost site known from aerial photographs and the 2003 surveys, which is not apparent in these sources. Grinsell also only mentions three barrows (Thomas, 1955, Appendix II, 442), although his locations, based upon OS grid references, are poor and can be ignored. He places all the barrows well to the north of the known southernmost barrow.

Whilst errors in previous surveys may account for this discrepancy in the location of the barrows, a field boundary, placed sometime between 1796 and 1860, separated the southernmost known barrow, discovered by this project, from the rest (fig. 4). This boundary enclosed an area clearly marked on the 1860 OS map as "Three Hill Field", suggesting that there must have been three barrows in this field, of which only two have survived to the present, with the barrow to the south-west of "Three Hill Field" going unrecorded. It can be reasonably assumed that differing agricultural practices occurring on either side of this boundary had flattened the southernmost barrow prior to Lukis investigations, whilst leaving those in “Three Hill Field” (Lukis, 1870, 119; 1860 OS map) damaged but extant. Finally both Lukis and Grinsell suggest that their southernmost barrow is the "largest of the three" (Lukis, 1870, 120; Thomas 1955, Appendix II, 442), but the survey results, depicted in Table 1, suggest that the centre barrow of the modern survey, survives to the greatest extent. The obvious explanation is that the southernmost of the modern survey barrows is a “new” addition to the cemetery.

Given this, it is necessary to rename these monuments and for ease of reference we employ a numerical sequence from 1 to 4, each with the prefix ‘Three Hills Barrow Group’, abbreviated to ‘THBG’ (see Table 1). The new site is THBG4.

Lukis excavation report, whilst poor, records evidence of typical early Bronze Age burial practices. He discovered two 'jars of coarse earthenware' at a depth of 0.15 cm from the highest point of THBG1. These held the cremated bones of what he describes as an adult and a child and were associated with flints, some of which had been heat affected. Beneath these 'jars' two clay layers sealed a heat affected, clay lined pit, 0.5 metres diameter and 0.3 metres deep, which contained charcoal and calcined human bone. Lukis suggests that the deposits are from one event, in which the cremations occurred in the pit and were then transferred to the 'jars', the pit sealed and the 'jars' deposited on top, prior to the capping of the burial. It is also possible that the deposits represent a primary cremation in the clay lined pit, and a later secondary addition of the two cremations in 'jars'. At THBG2 the deposits were similar in form to those at the northernmost barrow, with clay layers sealing a heat affected, clay lined pit 0.6 metres in diameter and 0.45 metres in depth, which was filled with charcoal and burnt bone. Only a few pottery fragments were found above the clay layers. At the THBG3 a quantity of burnt bone and charcoal was discovered 0.2 metres from the mound's apex and a large collection of cobbles and a fragment of burnt bone 0.6 metres further down. No other finds were recovered.

Previous barrow name	New barrow name	Lukis 1864	Grinsell 1952	2003
Three Hills North	Three Hills Barrow Group 1	Not recorded	18.3 metres diameter 0.3 metres high	Not evident as an earthwork
Three Hills Centre	Three Hills Barrow Group 2	Not recorded	18.3 metres diameter 0.3 metres high	Not evident as an earthwork
Three Hills South	Three Hills Barrow Group 3	15.25 metres diameter 0.9 metres high Described as the largest of the three	24.4 metres diameter 1 metres high	41 metres diameter 0.5 metres high
Not recorded	Three Hills Barrow Group 4	Not recorded	Not recorded	Diameter unclear but visible as a slight earthwork 0.15 metres high

Table 1: A topographic comparison of the Three Hills barrows dimensions

The geophysics, fully described and interpreted in Biggins (2003), was undertaken across almost the entire ridge on which the barrow group sits and indicated the apparently poorly preserved remains of at least three major features (Fig. 5):

- The southern ditch and some internal features of THBG2 were detected. From the available evidence a diameter of *c.* 25 metres is assumed for the barrow. The internal features include a number of pits, or positive anomalies, together with some slight evidence of a small (*c.* 3 metres) negative rectilinear anomaly, possibly indicating a stone structure. This negative anomaly may be associated with linear and curvilinear features, perhaps the remains of an enclosing kerb or paving, and there is some evidence for a sub-circular pit alignment within the main outer ring ditch. Additional internal 'pits', or positive anomalies, were detected, particularly in the north-west sector of the barrow, possibly co-located with a bipolar anomaly.

- THBG3 appears to be the best preserved of the three barrows. An almost complete ring ditch was detected with a diameter of 26 metres. There was a square anomaly at the north-east edge of the ditch, some 6 metres in size, and two large 'pits' at its southern edge, corresponding to the edge of the ditch. Whether these features indicate a funerary chamber or some related structure is uncertain given the available evidence. A number of positive and bipolar anomalies were detected at the site's centre, but whether they indicate the location of archaeologically significant features is again uncertain as they result from agricultural ferrous debris. Other circular positive anomalies, or possible pits, were located outside the ditch. Any one of these features may be satellite cremation burials or inhumations. A major concentration of anomalies was detected towards the south-west of the ring ditch, but had no defining characteristics.

- THNG4 was thought to be represented by a group of mixed anomalies some 120 metres south of THBG3. There was no clear evidence of a ring ditch although some intermittent vestiges may remain. One very prominent feature was a rectangular positive anomaly some 6 metres in length, possibly flanked by pits. Internally, a relatively strongly positive response may indicate the location of a cist or some similar stone structure.

- There are a number of other potentially archaeological features across the ridge, two of which could even be heavily damaged barrows. One is a small subcircular feature, c. 10 metres in diameter about 30 metres south of THBG 2, and the other is a circular magnetically disturbed area c. 25 metres in diameter. Although both features show few of the characteristics of a well preserved barrow, the extensive nature of destructive ploughing means such a possibility cannot be ruled out.

The contour and geophysics data suggests that the barrows are in an advanced state of destruction — much of the damage caused by agricultural practices over the last fifty years — and that THBG 1 is now completely destroyed. THBG2 appears to be the worst preserved of the three surviving barrows, followed by THBG4, but fortunately, THBG 3 still exists as a slight, yet defined, earthwork. It is recommended that the area of Three Hills is immediately taken out of cultivation. Failing that, the entire ridge should be excavated.

3.2 Centre Hill (Figs. 3 and 6)

NGR: SE2878079100

Centre Hill barrow lies between the Central and the Southern Henges and on the axis between their entrances. It is sited on a slight gravel ridge that runs east-west and rises 1.25 metres above the surrounding landscape. As demonstrated by the results of the contour survey (Table 2), it has been badly affected by ploughing, and it is noteworthy that the Centre Hill mound has significantly decreased in height since 1952, aptly illustrating the impact of modern farming techniques. Despite this, it is the best preserved of the surviving barrows from across the Thornborough landscape.

Barrow name	Lukis 1864	Grinsell 1952	2003
Centre Hill	18 metres diameter 1 metres high	27.5 metres diameter 0.9 metres high	28.8 metres diameter 0.3 metres high

Table 2: A topographic comparison of Centre Hill barrow dimensions

Lukis discovered small unburnt bone fragments in the remnants of a wooden coffin 1.5 metres below the apex of the mound. The coffin was aligned north-east to south-west, along the axis of the henge monuments, and was associated with a 'rudely ornamented jar of coarse earthenware' (Lukis 1870, 119) and an early Bronze Age flint implement formed on a flake.

The geophysical survey (Fig. 6) detected a feature which measured some 26.7 metres in diameter, with a ditch width of 2.5 metres (Biggins 2003). It is possible that a deliberate break in the ditch is situated in its north-east quadrant. From its interior was a sub-square positive anomaly, approximately 7.4 metres in size, with two large pits located towards the south-west. Small circular positive anomalies were also located centrally and there may be additional, apparently isolated, pits from around the inner periphery of the ring ditch. It is tempting to speculate that these represent secondary burial locations. A large circular positive anomaly was located 2 metres south of the ring ditch and appeared to have two flanking smaller pits. The symmetry of these features in relation to the ring ditch suggests a deliberate emplacement.

It is fortunate that the barrow is now situated within the area of the Stewardship Agreement, providing it with adequate protection for the foreseeable future.

3.3 Double Ring Ditch (Figs. 3 and 6)

NGR: SE2940078680

The Double Ring Ditch barrow lies to the south-east of the Southern Henge, just to the north of Green Lane. It is situated on a very slight gravel ledge that rises no more than 0.5 metres above the surrounding terrace. The monument, known from aerial photography, has been very badly damaged by ploughing, to the extent that it is no longer visible as an earthwork (Table 3), yet in 1952, when Grinsell undertook his survey, it survived to a height of 1.5 metres. He discovered a chert flake and a flint core nearby, whilst fieldwalking by the VMNLP in 1997 discovered Grimston Ware pottery sherds in the soil mark of the inner ditch, suggesting ploughing was cutting into significant deposits.

Barrow name	Lukis 1864	Grinsell 1952	2003
Double Ring Ditch	Not examined	30.5 metres diameter 1.5 metres high	Not evident as an earthwork

Table 3: A topographic comparison of the Double Ring Ditch dimensions

The geophysical survey (Fig. 6) detected a double ditched barrow (Biggins 2003). The degree of preservation appears to be variable, but is perhaps better conserved in the north and east. The perceived response indicates a 'beaded' effect, which might suggest an outer ditch which contains some pits. Certainly one, or possibly two 'pits' were detected offset somewhat internally from the main circumference of the ditch. The southern edge of the outer ditch is covered by the raised track. This may engender some degree of protection. The inner ditch is similar in form to the outer, with a possible deliberate interruption in the south-east. Within the central area of the barrow a third 'ditch', or at least circular feature was detected. This formation may just be fortuitous. In the north of this feature there appears to be two pairs of double pits, set upon different alignments. Directly south of these anomalies, and towards the central area of the barrow, were located a line of three pits, set some 1.5 metres apart. In the centre of the barrow a rectilinear structure was detected which was some 5 metres by 2.8 metres in dimensions, with the longer axis aligned east-west. It is probable that this feature represents the major or primary funerary feature within the monument. The structure itself comprises six major postholes or pits, with a pit located on each corner and two placed equidistant between them on the longer axis. It would appear that these pits are located within a rectangular trench. A single 'pit' was located centrally, slightly offset towards the east. Another single circular positive anomaly, some 1.5 metres in diameter, was located 2 metres west of the rectangular complex. Towards the eastern edge of the outer ditch a possible deliberate discontinuity was detected. This appeared to lead towards an area between the inner and outer ditches which showed some strongly negative anomaly elements. This very strong negative response was elicited from a sub-rectangular feature some 2.4 metres in length and 2 metres in width, which had three small circular negative anomalies located some 1.5 metres towards the north. A circular positive anomaly was located contiguously towards the south-east. This perhaps separated, or was central to, a similar negative anomaly in line towards the south-east. This latter negative anomaly was not as magnetically unresponsive, suggesting slightly lesser structural integrity or depth. The nature of the response in terms of negative responses (i.e. absence of soil) may indicate the location of stone structures, perhaps cists or kerbing. This suggests a barrow of great complexity and probably of several phases which may include satellite or secondary inhumations or deposits.

Whilst the topographic survey suggests that the barrow has been completely denuded and ploughing is causing severe damage to the archaeological deposits the geophysics results tend to suggest that substantial dug features remain extant. Further ploughing, especially for crop such as potatoes, will significantly degrade the barrow further and it is recommended that the site be taken out of cultivation, or failing that, excavated in its entirety. The complexity of the site suggests that it could potentially be the most archaeologically significant of the Thornborough barrows.

3.4 Hollin Head (Fig. 1)

NGR: SE2863078700
This barrow has only recently been discovered on aerial photographs, and hence, was examined by neither Lukis nor Grinsell. Unfortunately, the landowner prevented access in 2003, so there continues to be no detailed record of its existence. It was noted during excavations at the Southern Double Pit Alignment in 1999 that there was no obvious trace of the barrow as an earthwork.

3.5 Rushwood Hall (Fig. 1)

NGR: SE2929478226, SE2910278337
Of these two possible barrows known from aerial photographs, that at SE2929478226 seems particularly likely, being similar in size to the other barrows at the complex and lying on the axis of the henge monuments. No previous work has been undertaken on them and the project did not propose their survey. Their investigation should be a priority for further fieldwork at Thornborough.

3.6 Destroyed barrows (Fig. 1)

NGR: SE2835079480, SE2845079170 and SE2740080678, SE2752980808, SE2763680853
Aerial photography illustrates the former presence of two other barrows at Thornborough, one to the west of the Central Henge and one to the south-west. Lukis does not mention them and by the time

Grinsell visited the area both of these features had been quarried out, either in the late 1940s or early 1950s, without any archaeological mitigation.

Three ring ditches were discovered during archaeological investigation prior to quarrying, to the north of Nosterfield. Little information is available concerning these monuments. One badly truncated site was 4.9 metres in diameter and another, cut by a large, probably later Bronze Age, ditch was 7.5 metres in diameter. It is therefore unclear whether either of these small sites would have housed internal features. The third site was 17 metres in diameter and contained an un-urned cremation burial. This was cut by a single pit alignment.

4. CONCLUSIONS

4.1 The significance of the archaeology

A research-led agenda has significantly improved the knowledge and understanding of the nature and extent of preservation of these highly significant monuments. This is most ably demonstrated by the discovery of at least one further barrow at Three Hills, with the likelihood that there are even more, complementing the significant increase in the number of known barrows which resulted from the earlier investigation of the available aerial photographs. Whilst Lukis discusses four barrows, Grinsell mentions seven, but it is now known that there were probably as many as fourteen round barrows or ring ditches from across the landscape.

These monuments vary in character and location. Centre Hill is obviously an important barrow, situated on the axis of the henges, on a locally prominent ridge at the northern end of the Southern Double Pit Alignment. The discovery by Lukis of skeletal fragments in a coffin, also aligned on the henges axis, is of interest for its uniqueness at Thornborough, and the geophysics results suggest there may be secondary burials and other smaller associated features. That the Three Hills Barrow Group is now known to have been the location of at least one or more additional barrows and associated archaeological features emphasises the significant of this low ridge and highlights the need for its further investigation. The Double Ring ditch is a unique monument at Thornborough. It could shed light on a number of important questions concerning the complex, particularly if it is of early Neolithic date, as suggested by the associated Grimston Ware.

It is apparent that each barrow, usually situated on a locally prominent ridge, is directly associated with other archaeological features and could each provide potentially unique data that can only enhance our understanding of the entire monument complex.

4.2 The impact of agriculture and quarrying

Whilst there may once have been as many as fourteen or more barrows around the monument complex none survive as substantial earthworks, and in some cases, simply have not survived at all. The two major impacters upon these monuments have been modern agricultural practices and extensive gravel quarrying.

Two barrows and three ring ditches have been destroyed by quarrying, the two barrows, sometime in the late 1940s or early 1950s, being removed without archaeological mitigation. It is also possible that other barrows were destroyed to the west of the complex by the extensive quarry.

The damage caused by ploughing is also considerable, and it is possible that those Scheduled barrows still under the plough could be destroyed within a decade if they are not taken out of cultivation. All the upstanding archaeology has been massively denuded or completely eradicated by ploughing, leaving only dug archaeological features, which presumably, are themselves being gradually eroded by the plough. The situation of most of these features on low ridges exacerbates the affects of ploughing, the latter gradually eroding even the geological features on which these monuments are located.

4.3 Recommendations

The further investigation of these monuments by total investigation must be seen as a priority if it is not possible to take them out of cultivation. The barrows can obviously provide a wealth of data to be used in the explanation, interpretation, conservation and management of the complex as a whole, but regional and national questions, such as those concerning the development of the early Bronze Age round barrow tradition, can also be addressed by the investigation of these monuments.

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