BATH & CAMERTON ARCHAEOLOGICAL SOCIETY

Priston – Pensdown

March 2017

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Bath and Camerton Archaeological Society

Abstract

Geophysical survey was conducted in March 2017 in pursuit of Roman structures on the southern slopes and approach to Pensdown Hill, Priston, Bath and North-East Somerset. Both magnetometry and resistance techniques were used, and a contour survey was also undertaken. The survey did not find any definite Roman features but it located a pond and other related structures known from earlier maps. Some form of rectangular boundary was observed, which passed south into Great Croft, but it had not been observed there during a survey in 2007. It also located a sub-circular feature, possibly a henge, on the south-eastern boundary of the field.

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Preface

The search for major Roman structures at Priston, started by Bill Wedlake in the 1950's, and then by his own society, the Bath and Camerton Archaeological Society, from 2007, has continued into 2017. As in previous explorations, no such structure has yet been found, but the survey has re-located features from old maps and earlier features, and more importantly, found a sub-circular feature, probably prehistoric, possibly a henge, within the survey area. The possible henge continued south into Great Croft (surveyed in 2007) but at a point where an iron water pipe was intruded, so its southern portion was not seen in the 2007 survey and cannot now be surveyed. Potentially, however, it is more important than any Roman finds.

Acknowledgements

We would like to thank the Pow Family of Inglesbatch for allowing us access to the field and Michael Pow for all his help on the project days. We would also like to thank Tim Iles for allowing us to park on his land. Thanks are also due to all those from the Priston History Group and Bath and Camerton Archaeological Society who helped in this survey. Their input and effort was vital to enable us to cover as much ground as possible in the limited timescale.

1 Introduction

1.1 Location

Pensdown Hill rises steeply beyond Priston Village, to its north-west, beside the lane down to Priston Mill. Its National Grid Reference is ST 694 609. A location map is given in figure 1.1. The hill forms a conical appearance from north, west and south while it is elongated as a ridge to the east. Immediately to its south is a portion of relatively flat land, some 200 m E-W by 60 m N–S, which adjoins Great Croft field, which was surveyed by the Bath and Camerton Archaeological Society (BACAS) in 2007. The hill rises some 15 m above this level.

Figure 1.1
Location map

1.2 Dates

The survey was carried out over four working days, Tuesday and Wednesday the 14th and 15th, and 21st and 22nd March 2017. Availability of this field was limited to the time it was not required for grazing. The time was not sufficient for a survey of the whole field. A little over half was surveyed magnetically, rather less by resistance.

1.3 Personnel

The survey was hosted by Clare Cross, of the Priston Historical Group and a number of its members; Tony Baldaro, Paul Barclay, Lucy Barnes, Colin Emmett, Angela Hall, Lesley Heeley, Helen Hoghton, Tim Iles, Howard Jones and John Wilkinson joined in the survey. The survey was run technically for BACAS by John Oswin MA PhD CSci, assisted by John Richards, with help from John Samways, Lawrie Scott, Janet Pryke, Wendy Russ, Fiona Medland, Peter Harris and Tim Lunt.

1.4 Purpose

The presence of a major Roman site close to the village has been assumed for over a century since the discovery of a Roman coffin, but that site has not been definitively located. Excavations in Great Croft by Bill Wedlake (a founder member of BACAS) in the 1950's had not hit upon the site, neither had geophysical surveys by BACAS of Great Croft, Town Hill and Inland (in 2007, 2014 and 2016 respectively) positively identified a suitable candidate. It was considered that the flat area to the south of Pensdown Hill might be a candidate location.

1.5 Constraints

The short time available for this survey meant it was not possible to survey the whole field, even by magnetometry, although the whole of the flat portion was covered. As the hill is just off LiDAR coverage, it meant that a contour survey to complement those on the other surveyed fields had to be done by EDM (electronic distance measurement) and this took available manpower in the first week. The EDM had to be returned for its annual calibration at the end of the first week, so extra data could not be added later.

The west side of Pensdown Hill in particular is very steep, but the magnetometry traverses ran along the contours, so were feasible. However, there were earthworks on this slope which could not be surveyed because of lack of time.

Two twin-probe resistance meters were available, and these were kept well separated to avoid any cross talk.

1.6 Scope of Report

This document specifically reports the geophysical and contour surveys undertaken by BACAS on Pensdown during March 2017. Discussion of these results will draw on the results of previous work in the neighbouring fields.

2 Method

2.1 Gridding

A 20 m square grid was laid out across the field with the base line running approximately east – west. The grid origin was set at the point where a metal stay line from the electric pole enters the ground on the western edge of the field. A 20 m line was extended north from this along the hedge. The baseline was then constructed perpendicular to this. Further details are given in Appendix A. This provided a line across the flat southern portion of the field. 20 m squares were constructed both south and north of this line.

2.2 Electronic Distance Measurement (EDM)

Where it is available, LiDAR is now used to construct contour maps of fields. However, the LiDAR coverage just touches the northern edge of the field, so it was necessary to use the EDM (Sokkia SET5W) to build a contour map, which was important given the topography of this field. The EDM was only available during the first week of the survey, so this had to be completed early in the survey.

The contour map is shown in figure 2.1.

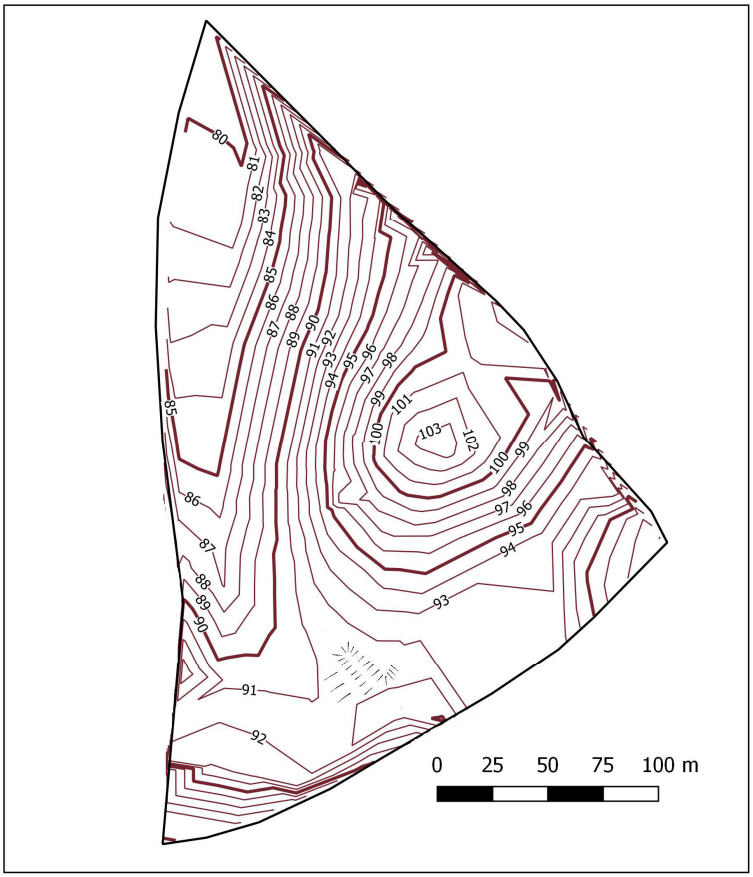

Figure 2.1. Topography of the field shown as 1 m contours, and location of earthwork survey.

There were some features observable in the southern portion of the field which were not initially surveyed in detail while the edm was available, so these were added as an earthwork survey during the second week. The main area of interest was a depression in the ground approximately rectangular in shape with a flattish bottom. This area corresponded to anomalies in both the magnetometry and resistance surveys, and measured 24 metres on the long axis and 11 metres on the short axis, with a depth of about 0.25 metres. On the 1884 OS 6 inch map the area is represented as a pond, but it does not appear on the 1904 or later maps. The location of the earthwork survey can be seen in Figure 2.1, towards the south of the field between the 91m and 92m contours. Figure 2.2 shows the earthwork survey.

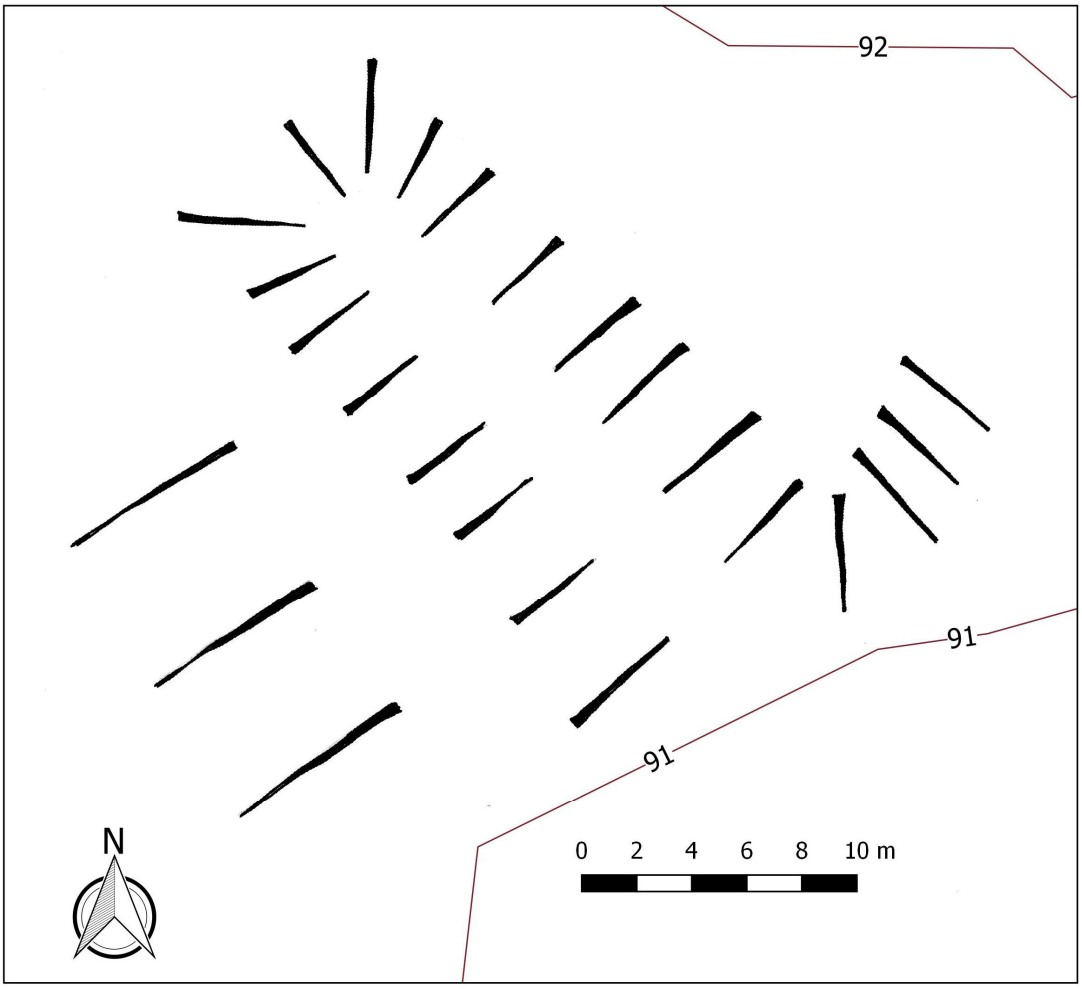

Figure 2.2. Earthwork survey.

2.3 Magnetometry

The magnetometer survey was undertaken using a Bartington 601-2 dual fluxgate gradiometer, taking four readings per metre along lines one metre apart. It was not possible to survey the whole field in the time available but the whole flat southern portion of the field was covered, along with the south-facing hillslope and the summit. A narrow portion along the western slope close to the western hedge was also surveyed, but there was not time to reach the northern hedge. Details of the magnetometry grid are given in Appendix A.

2.4 Twin-Probe resistance

The resistance survey was very limited in area. It was carried out using both a TR/CIA and an RM15 meters, kept well separated, using half-metre probe separation. The two meters are similar in appearance and function, but have very different controls and logging systems. Both could however be combined using the download and display software. Grids were measured at half metre intervals along lines one metre apart.

2.5 Resistivity profiles

Two profiles were taken across the feature on the flat portion of the field to add a third dimension to determine what it was. The location of these profiles relative to the earthwork survey is shown in figure 2.3. 32 probes, at 1 metre spacing, were used over 2 lines to give a plot of maximum extent 31 metres by 3 deep. In both cases, the first probe was at the south-west end of the line. Profiling required special attachments to the TR/CIA resistance meter.

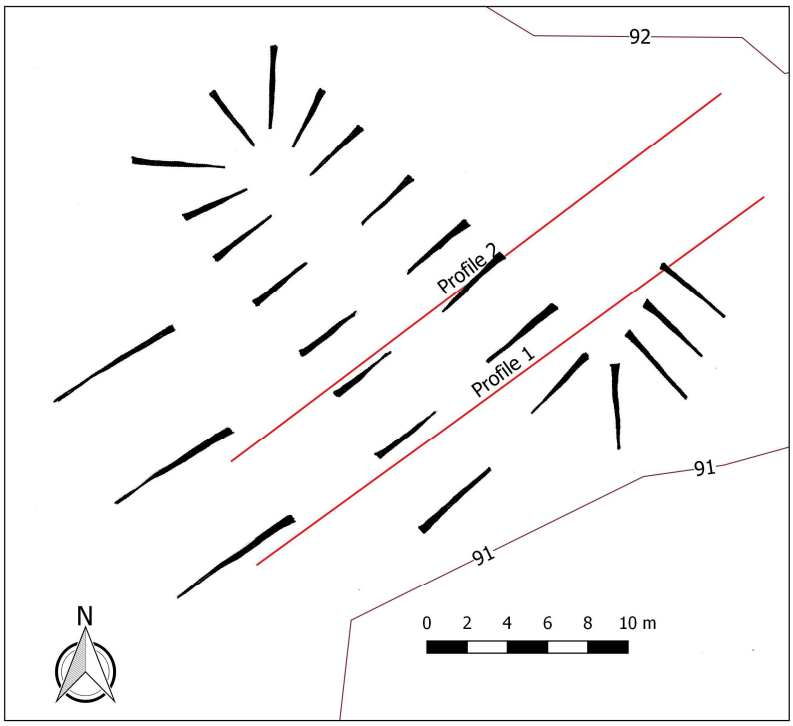

Figure 2.3. Location of the resistivity profiles

2.6 Software

Contours were plotted out using QGIS software, using data manually recorded and transferred to spreadsheet.

The magnetometer was downloaded using Bartington proprietary software and de-stripe processed using BACAS proprietary software before incorporation into INSITE v3 (1994) for final processing and display. INSITE is still preferred by BACAS despite its age as it uses an easy and versatile graphic interface.

The two different resistance meters were each downloaded using BACAS proprietary software before the data were imported into INSITE, which is able to combine the outputs from the two differing data streams from the devices.

Profiler data were downloaded and converted using TR/CIA proprietary software before processing using RES2DINV full professional software.

Coverage of all the geophysical and contour surveys has been produced using Photoshop, based on Google Earth images, and we acknowledge the use of the Google Earth site in preparing these maps.

3 Results

3.1 Magnetometry.

The magnetometry results are shown in figure 3.1 below.

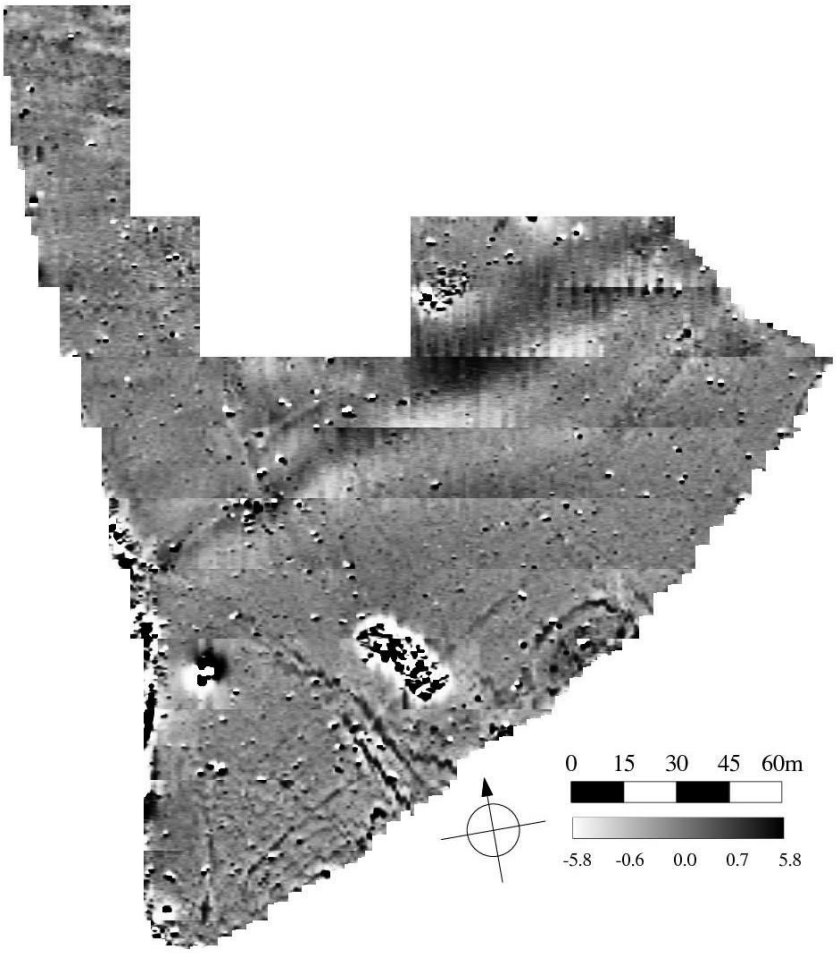

Figure 3.1. Magnetometry results.

A number of faint lines may represent ancient field boundaries and the broad diagonal smudge both dark and light is probably a geological effect near the top of the hill. The spattering of dark above this probably represents burning, such as bonfires, on the crown of the hill. A track enters on the south-east and crosses in a north-westerly direction towards the site of a known former building close to the western hedge.

There is a strong sub-rectangular magnetic anomaly some 30 m by 11 m just to the north-east of the trackway. This also appears in the resistance survey, and will be discussed further following its description in the next section.

A feature of particular interest is the ellipse cut by the field boundary in the south-east. This appears to have post holes set in a ring within it. No more can be gleaned about this as beyond the hedge, two fields join at a metal gateway, and a metal pipe goes to the gate. We speculate that this may be a small henge, some 35 m by 25 m, but have no further evidence. A structure of similar shape but large size was observed in the north-east corner of Town Hill in 2014. This would be directly the other side of Pensdown Hill.

3.2 Resistance survey.

Rather fewer grids of twin-probe resistance were done than of magnetometry. The plot obtained is shown in figure 3.2.

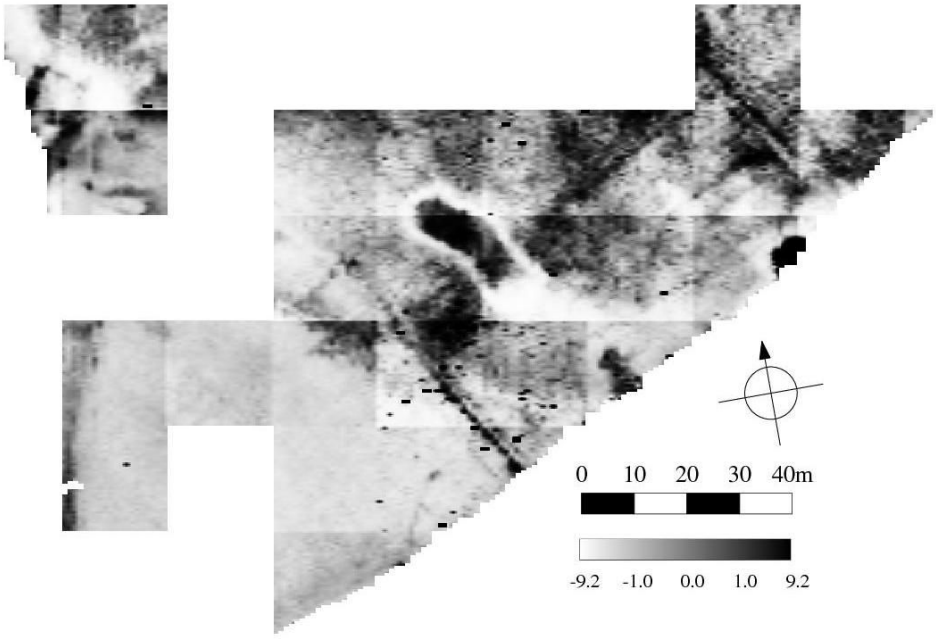

Figure 3.2. Resistance survey

The detached portion in the north-west is the site of a dwelling, known from old maps. There appears to be part of a large rectangular boundary in the south-west, going beyond the field boundary. This does not appear on maps.

The sub-rectangular feature, seen as stone in the plot here and also seen as a magnetic anomaly, appears to be at the base of a depression, and this appears to be a pond on earlier Ordnance Survey maps. It is not evident why it should have such strong magnetic and electrical signatures. Immediately to the south-west of this, there appears to have been a small building, and there may be another structure showing just across the pond. The pond appears to cut a rectangular boundary enclosing a large area, and continuing south-east into Great Croft field.

3.3 Resistivity profiles

The profiles were positioned to run across the depression at right angles to the long axis. The edges were at 9 metres and 19 metres along Profile 1 and 7 metres and 16 metres along Profile 2.

Profile 1 shows a band of high resistance to a depth of just over 1 metre corresponding to the depression, and continuing as a separate feature beyond.

Profile 2 also shows a band of high resistance to a depth of just over 1 metre corresponding to the depression.

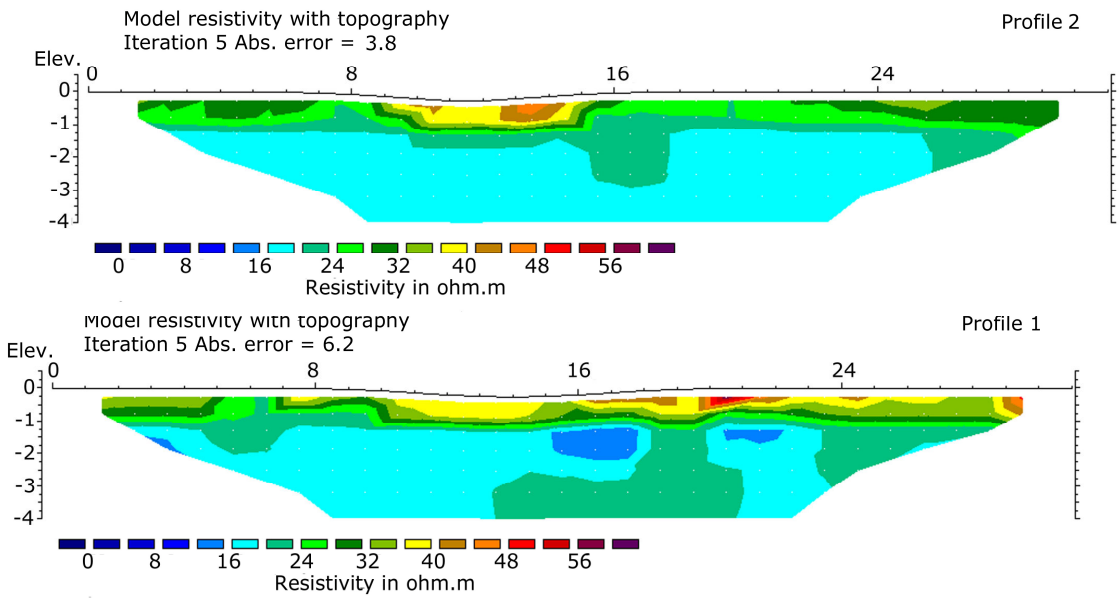

Figure 3.3. Resistivity profiles. Profile 2 has been placed above as it is to the north of profile 1, and it shown displaced 1 m laterally.

Note how profile 1 shows structure to the north-west of the depression at its location above the edge of a bank. Only 5 m to the north, this is no longer present in profile 2.

Figure 3.4 shows an overlay of the resistivity profile locations on the resistance plot. Here it can be seen that there is a darker (higher resistance) patch at the higher end of profile 1, and this does not continue as far as profile 2. There are still readings of relatively higher value in profile 2.

There are also signs of structure showing both in the resistance plot and at the beginnings of the profiles. However, shapes are not sufficiently clear to delineate buildings positively. It is possible that the high resistivity at the furthest point of profile 1 relates the rectangular boundary feature to the south-east of the pond and the structures either side of it.

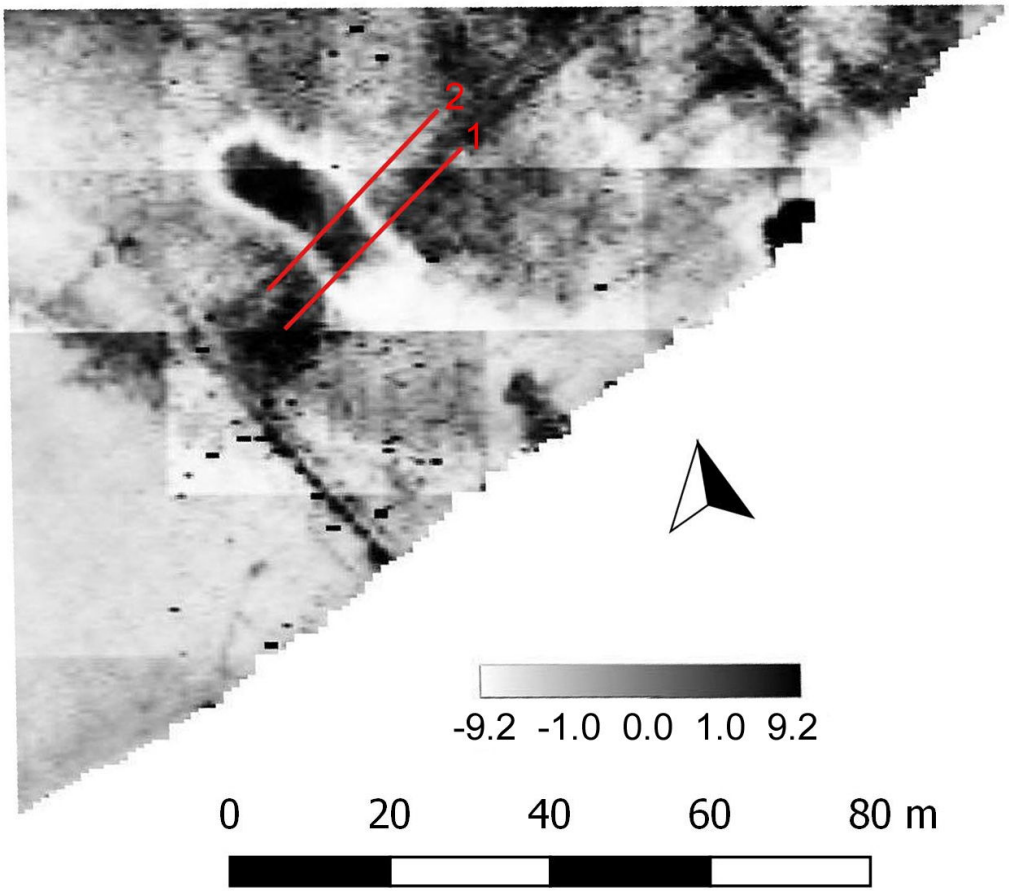

Figure 3.4 Location of the profiles with respect to the resistance plot.

4 Comment and Conclusions

The survey was very limited in time and it was not possible to cover the whole area available, even with magnetometer. However, the flat portion of the field was all surveyed and the summit of the hill reached too. The survey was part of a series attempting to locate a major Roman site believed to be in the vicinity. It did not achieve that, but it came up with some other interesting features.

The project had originally started in 2007 with a survey of Great Croft, the large field immediately to the south, which had earthworks investigated by Bill Wedlake in the 1950's. Fields to the west have been surveyed as well, and there are signs of intense activity immediately by and under the junction of the lanes at the south-west corner of the field. Now that we have surveyed this area, the only likely location where the ground does not slope too steeply would be to the east of Great Croft.

Figure 4.1 shows the magnetometry covered to date. This is greater in extent than the resistance survey as on these soils, it seems to have been more successful.

Figure 4.1. Magnetometry in Pensdown and surrounding fields.

A second version of this is shown as figure 4.2, where contours have been added at 1 m intervals. This gives a better understanding of the topography but somewhat obscures the geophysics results.

Figure 4.2. Survey areas, with contours overlaid.

The resistance plot of Pensdown should be inspected as well. This was given as figure 3.2 and appears to show a pond with a hardcore base with possible small buildings either side, although these are not clearly delineated. The pond can be seen on large scale Ordnance Survey maps of the first edition, as can two small dwellings, one in the present gateway and one further north along the western edge of the field. However, there appears to be some form of sharply delineated rectangular boundary going below the pond and related structures with sides continuing south-east into Great Croft. The lines are sharp, but slender, and that does not suggest large masonry.

Such boundaries were not noted during the survey in Great Croft (which was complete), but the ground level is lower in that field, so features may have been ploughed away. The boundary lines are also faintly visible in magnetometry. The very regularity of this feature suggests it is either modern or Roman in origin. It does not appear on earlier edition Ordnance Survey maps, which suggests it is earlier, and the pond appears to cut through it. The possible buildings either side of the pond are also likely to be associated with this.

If it is not Roman, it might be associated with Bath Abbey, which had an interest in Priston, with a Charter from Athelstan, dated 931, although such regularity of features would make this less likely.

One possibility is that the pond, already derelict, was filled in at the turn of the twentieth century using stone or rubble, which could give rise to the strong magnetic

signal as well as being of high resistance. However, there is a question as to why the pond is there in the first place. Its shape suggests it is not a natural feature, so why would a pond, nearly 30 metres in length, be constructed on this site? Its position close to, and parallel to, a trackway (to be discussed further later) might link it with that, but its location is on the crest of a slight ridge, with ground falling away to east and west. The clay ground would retain water here, but its location gives it limited use. It could be a fishpond,for watering livestock or it could be ornamental, but it does not seem to be associated with any domestic buildings.

It is quite likely that it was intruded into the site of a building and after the building was removed, the pond was dug into its footprint, but that explains neither pond or buildings.

The magnetometry picks out the pond, but not the buildings mentioned above. The plot was continued as far north along the western flanks of Pensdown Hill as possible within the timescale, but it was not possible to reach the north-west corner of the field. Some lines show which are visible on the ground as marks in the plot: these are generally running directly down the steep western slope of the hill. Along these grids, the operator was walking across the slope, relatively benign conditions. On the south face of the hill, the operator was walking up and down slope directly, and this seemed to produce some anomalous striping effects on the steep breaks of slope.

A trackway runs from the southern edge of the field in a northerly direction just to the west of the pond, heading north-west for the northern of the two known dwelling sites. It crosses Mill Lane into Town Hill and then turns northwards again towards Goose Mead. This trackway is the continuation of the line of a bank in Great Croft that was excavated by Bill Wedlake in 1953, and which he interpreted as of Roman construction.

Apart from the pond and trackway, two other features stand out in the plot. Firstly, a large area of speckling on the summit of the hill probably denotes burning, supporting stories of the use of the hilltop for a beacon.

The other feature, probably that of greatest significance, is a sub-circular feature, some 30 m by 15 m cut by the south-eastern edge of the field. This possibly has an arc of post holes within it, and possibly inner features. It is possible that there is an entrance on the north-west, and the western bound of it is much less distinct than the northern bound. There is no obvious sign of any feature on the surface. A view of it at large scale is shown in figure 4.3.

It is too large to be a dwelling, and so may possibly be a small henge, previously unknown. There is no possibility of investigating its southern half, as it is sited against the boundary with Great Croft, at a point where a field hedge branches off to the south. Although there is a gateway at this point, the magnetometry plot of Great Croft shows an iron water pipe running directly to it, and this would mask any archaeological feature. It was also noted that the ground level in the fields to the south was some half metre below that in Pensdown, so any signs of the southern portion of this monument have probably been ploughed out of existence. Profiling might reveal further details; otherwise excavation would be required to elucidate its real nature.

The curve of the northern bound can also be seen faintly in the resistance plot (figure 3.2), although no interpretation could be made from that alone. It is located just within the rectangular boundary discussed above.

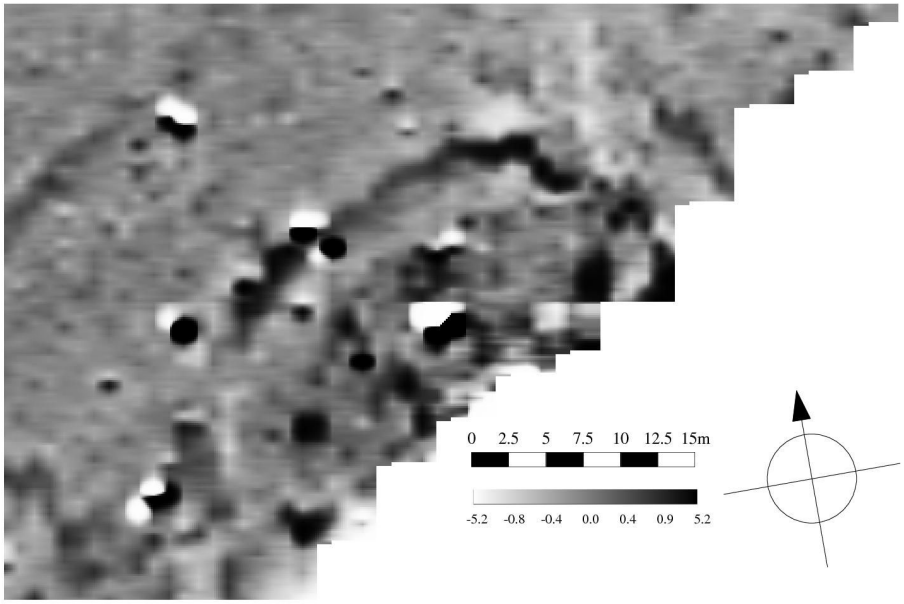

Figure 4.3. Large-scale detail of the possible henge.

A similarly sub-circular feature had been noted in the far north-east corner of Town Hill, on the opposite corner of Pensdown Hill (Oswin, 2014). This had been observed in the final hour of that survey and that also was frustratingly masked by two hedges and the lane and it was considered possible that it could be related in some way. However, its internal details were rather different, and with the primary focus of that exercise being Roman, it was interpreted as probably a Roman feature at the time. No further part of it was seen during the aborted 2015 survey in the south-east corner of Goose Mead. Re-inspection of that feature and its internal detail even in the light of the results presented here suggests it is still most likely Roman and is less likely to be a henge.

Nonetheless, a feature interpreted as a henge (Corcos, 2012) was surveyed by the society in 2015 close to Hunstrete, only some 5 km to the west. It may be that this type of feature is not rare in the area, and more await discovery.

The sub-rectangular resistance feature may be of Roman origin, although its signature is rather slighter than might be expected. It certainly appears to be of some antiquity. Although the ground level to the south in Great Croft is lower, it is likely that a lot of building debris would be noticed if this were part of a large Roman feature. This survey then has still not positively located any major Roman structure, but the discovery of a possible henge may be of greater significance to the archaeology of the area. The most likely siting of any Roman structure is still under the junction of the lanes, just to the south-west of the field investigated this year.

Related Documents

Camertonia (the house journal of the Bath and Camerton Archaeological Society) Volume 53 (2015/2016). This has papers both on previous work at Priston and also on the henge site at Hunstrete.

Corcos, N, 2012. Land near Hunstrete, Marksbury, Bath and North-East Somerset. Archaeological desk-based study. Bristol.

Lawes, Jayne, 2008. Geophysical Survey at Priston. Bath: BACAS.

Oswin, J, 2009. A field guide to geophysics in archaeology. Springer, London and Berlin.

Oswin, John, 2014. Geophysical survey on Town Hill, Priston, Somerset, 2014. Bath: BACAS.

Oswin, John, 2016. Geophysics at Priston, 2015 and 2016. Bath: BACAS.

Somerset Record Society, Volume 7. ND. Cartularies of Bath Abbey. Taunton.

Wedlake, W. ND (c1955). Notes on Great Croft Field. Bristol Museum. Electronic copy held by Priston History Society.

Appendix A Grid Layout

The base of the grid was defined to be the point where the iron stay from the electricity pole in the western hedge met the ground, This pole was about 100 m north of the entrance to the field. Continuing the line north past the pole for 20.0 m, there was a distinctive wooden fence post, and a grid marker was placed as close to this as possible. This is shown in figure A1.

Figure A1. Grid point 20 m north of base point (where iron stay of electricity pole enters ground).

All grids were constructed from these two points. These were 20 m square grids.

The magnetometer (Bartington 601-2 fluxgate gradiometer) was set to take 4 readings per metre along traverses 1 m apart, giving 1600 readings per complete grid square. The grids were walked zig-zag fashion, but were downloaded as parallel data, using the proprietary Bartington download software (grids with prefix 'M', and then subject to de-stripe routine using BACAS proprietary software (grids with prefix 'D').

Grids were started in the south-west corner with first traverse heading north. It is BACAS' usual practice to start each grid 1 m east of the western grid edge and finish on the eastern grid edge. First reading of traverse was started 0.25 m north of baseline, finishing on the top line, in accordance with figure 5.8 c, p115, in Oswin, 2009.

The sequence in which the grids were surveyed is shown in figure A2.

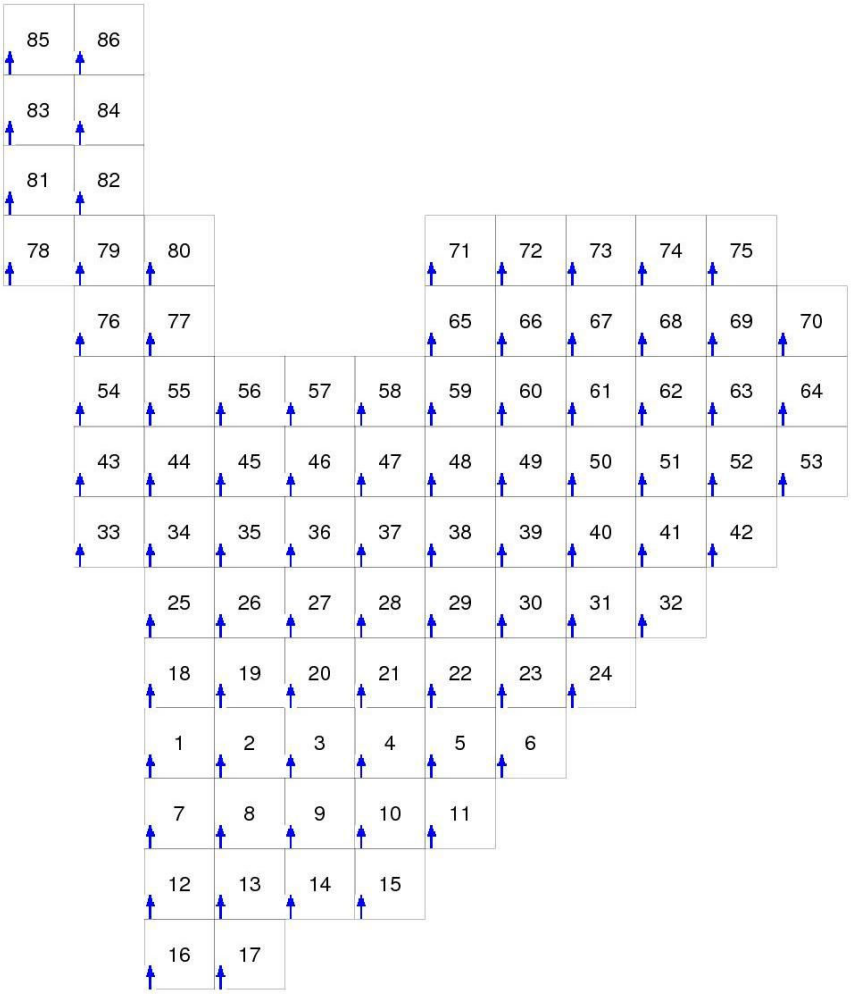

Figure A2. Magnetometer grid sequence.

Two resistance meters were used: TR/CIA and RM15. Both were walked in a zig-zag fashion, but the TR/CIA converted the data to parallel, whereas the RM15 retained zig-zag data. In figure A3, squares using the TR/CIA have blue arrows; those from the RM15 have crossed red arrows. For both instruments, 2 readings were taken per metre on traverses 1 m apart, giving 800 readings per full 20 m square. Grids were also in accordance with figure 5.8 c in Oswin 2009.

The two resistivity profiles were located as shown in figure 3.5 with respect to the resistance plot.

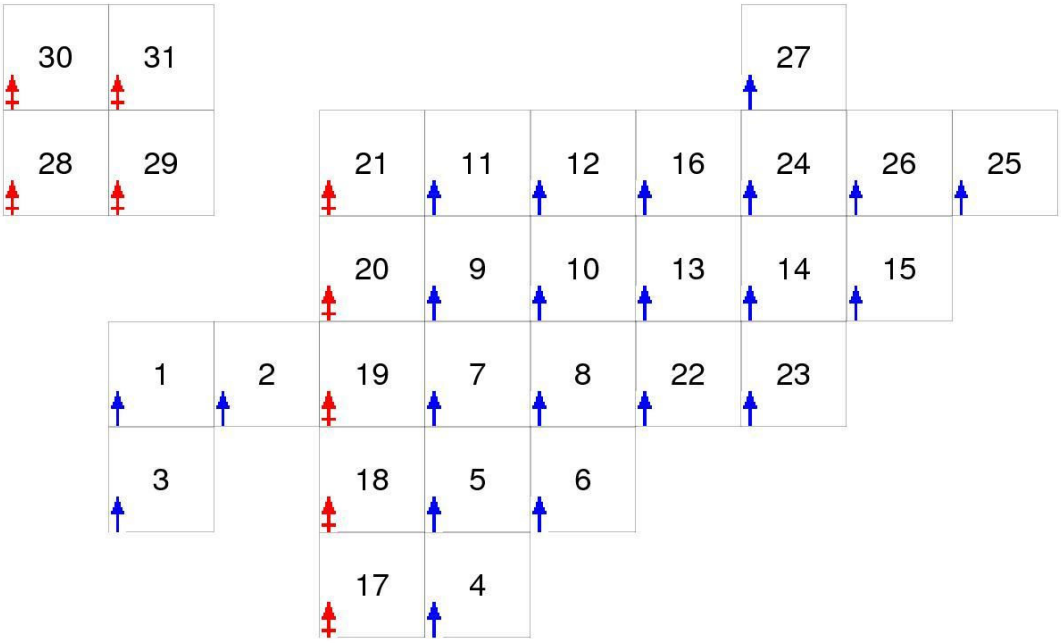

Figure A3. Resistance grid sequence. Blue arrows indicate TR/CIA, crossed red arrows indicate RM15.