HER COPY

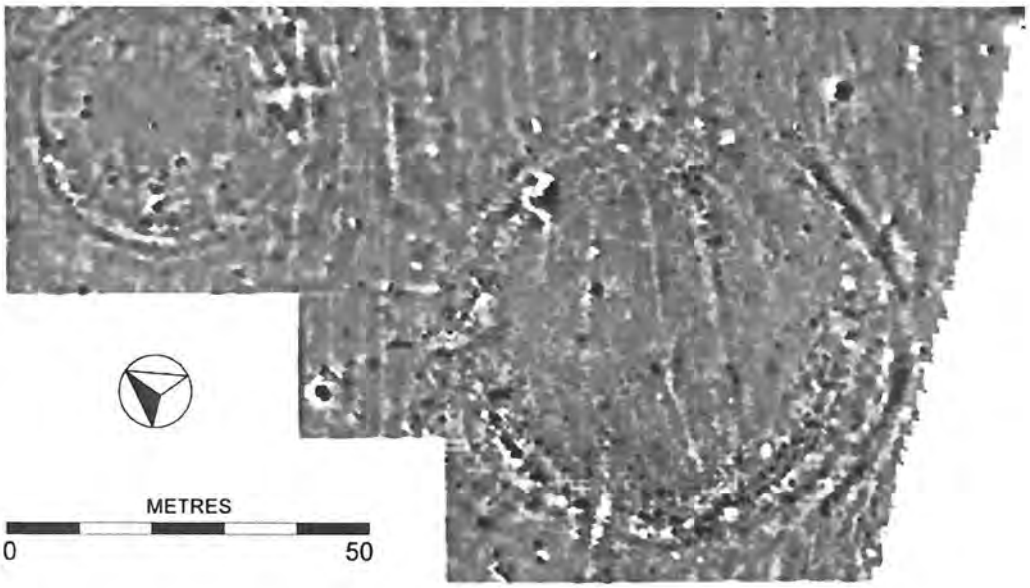
PREHISTORIC FUNERARY AND RITUAL MONUMENT SURVEY:

Assessment of monuments at risk in an agricultural landscape -

Ceremonial monuments: Henges and stone circles in North-West Wales

GAT Project No. G1629

Report No. 663



Prepared for Cadw
June 2007

By George Smith and David Hopewell

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust
☎ 01248 352535 ✉ 01248 370925 email : gat@heneb.co.uk

PREHISTORIC FUNERARY AND RITUAL MONUMENTS SURVEY 2006-7

Assessment of monuments at risk in an agricultural landscape:

Ceremonial monuments: Henges and Stone Circles

in North-West Wales

GAT Project No. G1629

Report No. 663

Prepared for
Cadw

June 2007

By
George Smith and David Hopewell

Cover: Gradiometer survey of Hengwm stone circles, Meirionnydd, SAM M136

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

PREHISTORIC FUNERARY AND RITUAL MONUMENT SURVEY:
GAT PROJECT NO. G1629

Assessment of monuments at risk in an agricultural landscape: Ceremonial monuments: Henges and Stone Circles in North-West Wales

CONTENTS

1. Introduction

2. Project Design

3. Methods

4. Geophysical Survey Methods

5. Survey results: Possible henges
5.1Tytandderwen, Bala, Meirionnydd
5.2 Gwyddelfynydd, Bryn Crug, Meirionnydd
5.3 Castell Bryn Gwyn, Brynsiencyn, Anglesey

6. Survey results: Possible stone circles
6.1Bryn Gwyn Stones, Brynsiencyn, Anglesey
6.2 Meini Hirion, Garndolbenmaen, Gwynedd
6.3 Hengwm circles, Eithinfynydd, Meirionnydd

7. Summary and recommendations

8. References

ILLUSTRATIONS

1. The location of all known or possible henges or stone circles in north-west Wales
2. Tytandderwen, Bala: Topographic location
3. Tytandderwen, Bala: Aerial photograph
4. Tytandderwen, Bala: Geophysical survey plot
5. Tytandderwen, Bala: Geophysical survey interpretation
6. Tytandderwen, Bala: Soil test pit location
7. Gwyddelfynydd, Bryn Crug, Tywyn: Topographic location
8. Gwyddelfynydd, Bryn Crug, Tywyn: Aerial photograph plot
9. Gwyddelfynydd, Bryn Crug, Tywyn: Geophysical survey plot
10. Gwyddelfynydd, Bryn Crug, Tywyn: Geophysical survey interpretation
11. Gwyddelfynydd, Bryn Crug, Tywyn: Soil test pit location
12. Castell Bryn Gwyn, Brynsiencyn, Anglesey: Topographic location
13. Castell Bryn Gwyn, Brynsiencyn, Anglesey: Excavation plan
14. Castell Bryn Gwyn, Brynsiencyn, Anglesey: Geophysical survey plot
15. Castell Bryn Gwyn, Brynsiencyn, Anglesey: Geophysical survey interpretation
16. Bryn Gwyn Stones, Brynsiencyn, Anglesey: Topographic location
17. Bryn Gwyn Stones, Brynsiencyn, Anglesey: Photograph
18. Bryn Gwyn Stones, Brynsiencyn, Anglesey: Plan of stones
19. Bryn Gwyn Stones, Brynsiencyn, Anglesey: Drawing by Rowland 1723
20. Bryn Gwyn Stones, Brynsiencyn, Anglesey: Drawing by Skinner, 1802
21. Bryn Gwyn Stones, Brynsiencyn, Anglesey: Plan and drawing by Rowland, 1723
22. Bryn Gwyn Stones, Brynsiencyn, Anglesey: Stukeley's version of Rowland's plan, 1776
23. Bryn Gwyn Stones, Brynsiencyn, Anglesey: Geophysical survey plot
24. Bryn Gwyn Stones, Brynsiencyn, Anglesey: Geophysical survey interpretation
25. Bryn Gwyn Stones, Brynsiencyn, Anglesey: Soil test pit location
26. Meini Hirion stones, Cefn Coch Uchaf, Garndolbenmaen: Topographic location
27. Meini Hirion stones, Cefn Coch Uchaf, Garndolbenmaen: Drawings of stones by the Ordnance Survey
28. Meini Hirion stones, Cefn Coch Uchaf, Garndolbenmaen: The western stone
29. Meini Hirion stones, Cefn Coch Uchaf, Garndolbenmaen: The western stone, from the west
30. Meini Hirion stones, Cefn Coch Uchaf, Garndolbenmaen: Dumped clearance stones close to the site of the Meini Hirion
31. Meini Hirion stones, Cefn Coch Uchaf, Garndolbenmaen: Dumped clearance stones close to the site of the Meini Hirion
32. Meini Hirion stones, Cefn Coch Uchaf, Garndolbenmaen: Geophysical survey plot
33. Meini Hirion stones, Cefn Coch Uchaf, Garndolbenmaen: Geophysical survey interpretation
34. Meini Hirion stones, Cefn Coch Uchaf, Garndolbenmaen: Soil test pit location
35. Hengwm stone circles, Eithinfynydd, Meirionnydd: Topographic location
36. Hengwm stone circles, Eithinfynydd, Meirionnydd: Plan of circles by Gresham (1967), after Crawford
37. Hengwm stone circles, Eithinfynydd, Meirionnydd: Plan of circles by Crawford (1920)
38. Hengwm stone circles, Eithinfynydd, Meirionnydd: Sections of north circle ditch (Crawford 1920)
39. Hengwm stone circles, Eithinfynydd, Meirionnydd: Photograph of south circle stones (Crawford 1920)
40. Hengwm stone circles, Eithinfynydd, Meirionnydd: Section of south circle ditch (Crawford 1920)
41. Hengwm stone circles, Eithinfynydd, Meirionnydd: Plan of circles in relation to geophysical survey plot
42. Hengwm stone circles, Eithinfynydd, Meirionnydd: Geophysical survey plot
43. Hengwm stone circles, Eithinfynydd, Meirionnydd: Geophysical survey interpretation

1. INTRODUCTION

At present the only excavated and proven centres of Late Neolithic/ Early Bronze Age ceremonial activity within north-west Wales are those at Llandygai, Bangor, where there are two henges and a cursus as well as evidence of Early Bronze Age funerary activity (Lynch and Musson 2004) and at Cefn Coch, Penmaenmawr (Griffiths 1960) where there are several cairn circles and cairn cemeteries. These could have acted as a social focus for quite a wide area but other centres are likely to have existed, some as large as Llandygai, others more local. The Prehistoric Funerary and Ritual project survey reports for north-west Wales identified other possible foci of funerary and ritual activity at Hengwm, Cregennen and Bryn Cader Faner, Meirionnydd and at Bryn Gwyn, Anglesey, represented by concentrations of funerary and ritual monuments, including stone circles and standing stones. The present project was designed to investigate some of these by geophysical survey. The project involved survey of both known, protected monuments and other sites known only from scanty above-ground remains or from crop-marks. Six locations were identified with possible henges or stone circles of which two are large ring ditches known only from aerial photographs of crop marks and suggested as possible henges (Fig. 1).

The aim was to assess these locations by plotting of crop-marks, where available, by new aerial survey, by geophysical survey and by soil test pitting. The geophysical survey provides a non-intrusive way of improving knowledge about these important or potentially important monuments. The soil pitting to record soil cover and subsoil type will allow assessment of the impact of ploughing, where it occurs. Overall the work will outline appropriate curatorial attention and management for these valuable prehistoric funerary and ritual sites. The archaeological value of such locations and of the areas around them has been well demonstrated by previous and recent excavations at Llandygai, Bangor (Kenney 2005).

Acknowledgements
The project was carried out with the support of Cadw and permission was obtained for geophysical survey of the three scheduled sites. No soil pitting was carried out within the protected areas of these scheduled sites.

Many thanks are due to all the landowners and farmers who gave permission for allowing access for the surveys. They are Mr Robert Davies, Tytandderwen, Mr W.H. Evans, Eithinfynydd, Mr R.T. Roberts, Castell Bryn Gwyn and Bryn Gwyn stones, Mr Wyn Williams, Cefn Coch Uchaf, Garndolbenmaen and Mr Owen, Gwyddelfynydd, Bryn Crug, Meirionnydd.

Thanks must also go to John Burman for assistance with the survey at Tytandderwen, to John Rowlands and David Roberts for providing preliminary copies of relevant photographs from their aerial photographic survey of Anglesey and to Frances Lynch and Steve Briggs for useful discussion.

2. PROJECT DESIGN

Six sites were chosen. Two of these were crop mark sites, that at Tytandderwen (PRN 9982, Bala), and that at Gwyddelfynydd, Bryn Crug (PRN 522, Tywyn) (Crew and Musson 1996). One site included two adjacent scheduled stone circles at Hengwm, Dyffryn Ardudwy (PRN 1087 and 1088, SAM Me 136), partially excavated in 1920-21 (Crawford 1920 and 1921). Three were possible demolished stone circles at Meini Hirion (PRN 2360, Dwyfor), Bryn Gwyn Stones (PRN 3135, Anglesey, SAM A22) and Tre'r Dryw Bach (PRN 1631, Anglesey). Of the latter three the first two have standing stones remaining as part of the suggested stone circles. The last is a stone circle known only from a 19th century description (Williams 1871). It was hoped that it might be possible to identify its position from a new aerial photographic survey of Anglesey that was being carried out concurrently by John Rowlands and David Roberts. However this was not achieved and without any other pointers to its exact location it was not worthwhile to carry out any geophysical survey. By agreement with Cadw it was then arranged to carry out a survey of the possible henge of Castell Bryn Gwyn, Anglesey, a scheduled ancient monument (SAM An015). This has previously been the subject of excavation but the majority of the interior is as yet unknown (Wainwright 1962).

3. METHODS

Geophysical Survey. The major element of the work consisted of geophysical survey carried out by David Hopewell and the survey methods are described in a separate section, below. The survey was carried out using a twin-probe gradiometer and all sites were surveyed at high resolution because the intention was to provide maximum information about relatively small areas of known sites.

Soil pitting. This was carried out at four of the sites. Using the grid laid out for the geophysics soil pits, *c.* 30cm square, were excavated at *c.* 15m intervals to the top of the subsoil, recording type of subsoil and depth of topsoil/ploughsoil. At Tytandderwen 80 soil samples were also taken on a denser grid for possible magnetic susceptibility and soil phosphate analysis because it was apparent that if the enclosure turned out to be a settlement or stock enclosure, rather than funerary and ritual, then soil analysis might help in interpretation. When completed the results will be incorporated in a shorter published paper.

Grids were located by measuring in to the field boundaries, fixed to the nearest field boundary junctions.

4. GEOPHYSICAL SURVEY METHODOLOGY
D. Hopewell

Fluxgate gradiometer survey provides a relatively swift and completely non-invasive method of surveying large areas and is ideal for detecting large-scale features such as ditches, banks and areas of occupation.

Instrumentation

All geophysical work was carried out using a Bartington Grad601-2 dual Fluxgate Gradiometer. This uses a pair of Grad-01-100 sensors. These are high stability fluxgate gradient sensors with a 1.0m separation between the sensing elements, giving a strong response to deeper anomalies.

This instrument detects variations in the earth's magnetic field caused by the presence of iron in the soil. This is usually in the form of weakly magnetised iron oxides which tend to be concentrated in the topsoil. Features cut into the subsoil and backfilled or silted with topsoil therefore contain greater amounts of iron and can therefore be detected with the gradiometer. This is a simplified description as there are other processes and materials which can produce detectable anomalies. The most obvious is the presence of pieces of iron in the soil or immediate environs which usually produce very high readings and can mask the relatively weak readings produced by variations in the soil. Strong readings are also produced by archaeological features such as hearths or kilns because fired clay acquires a permanent thermo-remnant magnetic field upon cooling. This material can also get spread into the soil leading to a more generalised magnetic enhancement around settlement sites.

Not all surveys can produce good results as anomalies can be masked by large magnetic variations in the bedrock or soil or high levels of natural background "noise" (interference consisting of random signals produced by material within the soil). In some cases, there may be little variation between the topsoil and subsoil resulting in undetectable features. It must therefore be stressed that a lack of detectable anomalies cannot be taken to mean that that there is no extant archaeology.

The Bartington Grad601 is a hand held instrument and readings can be taken automatically as the operator walks at a constant speed along a series of fixed length traverses. The sensor consists of two vertically aligned fluxgates set 1.0m apart. Their Mumetal cores are driven in and out of magnetic saturation by an alternating current passing through two opposing driver coils. As the cores come out of saturation, the external magnetic field can enter them producing an electrical pulse proportional to the field strength in a sensor coil. The high frequency of the detection cycle produces what is in effect a continuous output (Clark 1990).

The gradiometer can detect anomalies down to a depth of approximately one metre. The magnetic variations are measured in nanoTeslas (nT). The earth's magnetic field strength is about 48,000 nT, typical archaeological features produce readings of below 15nT although burnt features and iron

objects can result in changes of several hundred nT. The instrument is capable of detecting changes as low as 0.1nT.

Data Collection

The gradiometer includes an on-board data-logger. Readings in the surveys were taken along parallel traverses of one axis of a 20m x 20m grid. The traverse interval was 0.5m at all sites. Readings were logged at intervals of 0.25m along each traverse giving 3200 readings per grid.

Data presentation

The data is transferred from the data-logger to a computer where it is compiled and processed using ArchaeoSurveyor 2 software. The data is presented as a grey-scale plot where data values are represented by modulation of the intensity of a grey scale within a rectangular area corresponding to the data collection point within the grid. This produces a plan view of the survey and allows subtle changes in the data to be displayed. This is supplemented by an interpretation diagram showing the main features of the survey with reference numbers linking the anomalies to descriptions in the written report. It should be noted that the interpretation is based on the examination of the shape, scale and intensity of the anomaly and comparison to features found in previous surveys and excavations etc. In some cases the shape of an anomaly is sufficient to allow a definite interpretation e.g. a Roman fort. In other cases all that can be provided is the most likely interpretation. The survey will often detect several overlying phases of archaeological remains and it is not usually possible to distinguish between them. Weak and poorly defined anomalies are most susceptible to misinterpretation due to the propensity for the human brain to define shapes and patterns in random background 'noise'. An assessment of the confidence of the interpretation is given in the text.

Data Processing

The data is presented with a minimum of processing although corrections are made to compensate for instrument drift and other data collection inconsistencies. High readings caused by stray pieces of iron, fences, etc are usually modified on the grey scale plot as they have a tendency to compress the rest of the data. The data is however carefully examined before this procedure is carried out as kilns and other burnt features can produce similar readings. The data on some noisy or very complex sites can benefit from 'smoothing'. Grey-scale plots are always somewhat pixellated due to the resolution of the survey. This at times makes it difficult to see less obvious anomalies. The readings in the plots can therefore be interpolated thus producing more but smaller pixels and a small amount of low pass filtering can be applied. This reduces the perceived effects of background noise thus making anomalies easier to see. Any further processing is noted in relation to the individual plot.

5. SURVEY RESULTS: POSSIBLE HENGES

5.1 TYTANDDERWEN, BALA, GWYNEDD (PRN 9982)

5.1.1Introduction

This enclosure lies on the flood plain of the River Dee (Afon Dyfrdwy), 2.5km to the east of Bala on 150m from the river on its southern side and on relatively level land that is presently pasture but was probably arable in the past (Fig. 2). It lies only 25m from a stream that is probably a former channel of the river (Fig. 6). No chance finds have ever been recorded there and the site was unknown locally or to antiquarians until it was identified by Chris Musson on an aerial photograph taken by J.K.St. Joseph in the particularly dry summers of 1975 or 1976 (Crew and Musson 1996). It appeared to consist of a narrow ring ditch about 80m diameter with a possible wide entrance gap on its south-east side (Fig. 3). Since the photograph was taken a hedge bank that crossed the enclosure has been removed and a barn constructed over part of the west side of the enclosure (Fig. 4). Elsewhere on the floodplain, at Llanfor, closer to Bala a complex of crop marks have been recorded by the RCAHMW, comprising chiefly of the remains of several phases of Roman fort, roads and vicus but including three ring ditches thought to be Bronze Age burial monuments. Slightly to the north, on the edge of the flood plain there was once a stone circle, known as Pabell Llywarch Hen - The Tent of Old Llywarch (a literary figure), but it was dismantled before 1914 and its exact position is uncertain (Bowen and Gresham 1967, 283).

5.1.2 Geophysical Survey (Figs 4-5)
D. Hopewell

Survey conditions

The field was, in general, flat with no obscuring vegetation. A patch of boggy ground (11, fig. 5) hampered recording in this area although it proved to be possible to survey it with the traverse speed set to minimum. Several pieces of immovable farm machinery and sheds around the perimeter of the survey area produced very strong magnetic responses extending for up to 10m from the western boundary.

Results

The levels of background noise were low although there was a fairly even scatter of small strong anomalies (visible as small, half black, half white, dots on the greyscale plot). These are the product of either small pieces of stray iron in the topsoil or magnetic stones forming magnetic dipoles. The most obvious archaeological anomaly is a curvilinear feature (1) that is best interpreted as a ditch. This forms an oval enclosure with dimensions of 75m x 65m. A 7m wide entrance (2) is clearly visible on the southern side. A smaller entrance (3) about 2m wide is also reasonably clear on the northern apex of the enclosure. There is a possibility of another, small entrance (4) 30m to the west of this but it is unclear due to magnetic interference from the nearby sheds.

A narrow ditch type anomaly (5) seems to respect the line of the enclosure and is probably contemporary and may indicate an internal division. There are no obvious areas of increased responses that could indicate habitation inside the enclosure 1 apart from a little more noise within the small internal division (5). This that could indicate some activity but no features can be clearly resolved. A poorly defined patch of increased noise 6 is almost certainly geological in origin. A narrow anomaly (7) apparently running parallel to the enclosure ditch was visible on aerial photographs and was initially interpreted as an outer defensive ditch. This now seems to be unlikely. The feature is very slight, resembling plough-scarring (12 and 13 see below) seen elsewhere on the survey, and is unlike the anomaly produced by the enclosure ditch. It also does not continue around the rest of the enclosure.

Several relatively recent features are also visible. Anomalies 8, 9 and 10 are ploughed out field boundaries. A patch of high responses (11) probably indicate material used to infill a wet depression in the field. Two phases of ploughing (12 and 13) on slightly differing alignments are also visible.

Conclusions

The survey identified a sub-circular ditched enclosure with a 7m wide entrance on the south-east. Two, narrow entrances were tentatively identified on the northern side of the enclosure along with a possible internal division. There was no evidence of buildings within the enclosure and noise levels were similar to the surrounding area. The enclosure could be Neolithic and the relatively light buildings of that period would probably survive as an arrangement of stake-holes. This would be unlikely to be detectable above the background noise. A degree of thermo-remnant enhancement in the form of hearths or generally increased noise in the interior would perhaps be expected. This is, however, not present, perhaps as a result of repeated ploughing or soil not being conducive to thermo-remnant enhancement.

5.1.3 Soil survey (Fig. 6)

Twenty soil pits were excavated and recorded and show a relatively shallow topsoil from 0.22m minimum at the north side of the field to a maximum of 0.40m at the south-west where a slight linear hollow crosses the field (Table 1). This is shown on the geophysical survey to be an old field boundary ditch or drain. The topsoil is of fine gravelly silt, indicating that the underlying deposits are alluvial, as to be expected on the flood plain close to the river. The subsoil in most pits was oxidised orange-brown silt but in some places sampled was mid-grey. Only one pit, 13 was not bottomed to natural subsoil and may have been over the ditch of the enclosure.

80 topsoil samples were also taken on a closer grid with a view to possible magnetic susceptibility and phosphate analysis in order to try to elucidate the function of the enclosure.

Table 1 Soil pitting results

1. 0.24 Mid grey clayey silt with fine gravel up to 25mm.
2. 0.25 ditto
3. 0.29 ditto
4. 0.32 Orange-brown silt with fine gravel.
5. 0.25 ditto
6. 0.22 ditto
7. 0.35 ditto Probable field ditch at side of former field boundary.
8. 0.29 ditto
9. 0.26 ditto but more silty
10. 0.35 As 9.
11. 0.40 Mid grey clayey silt with occasional small sub angular stones. Former stream course.
12. 0.31 As 4.
13. 0.32 Similar to 4 but not as compact. Possible archaeological feature. Not bottomed.
14. 0.37 Very light grey\ silty clay.
15. 0.35. Mid-grey silty clay with occasional small stones.
16. 0.29 As 4.
17. 0.32 As 4.
18. 0.35 As 4.
19. 0.39 As 4.
20. 0.33 Orange-buff silt with occasional pebbles.

5.1.4 Discussion

The geophysical survey confirmed the outline of the enclosure ditch and of the possible entrance. It also suggested that there were possibly at least two other narrower entrances, at the north-west and north-east. The main entrance was unusually wide for any kind of defensive enclosure, at *c.* 7m wide, while the two possible smaller entrances were about 2m wide. The wide entrance and the possible north-east entrance are distinctive for the stronger anomalies at their termini. These may indicate deeper areas such as for major post-holes or the deposition of more magnetic material, such as burnt debris. The ditch itself is probably between 4-6m in width and therefore of a considerable size but there was no indication of a bank, either on the surface or from the geophysical results.

The conditions for the survey seem quite good with no major background noise but the interior of the enclosure showed no definite features. Only one possible feature was present – a sinuous linear feature at the east side of the enclosure. This had the appearance of a natural fluvial feature, such as palaeo-

channel, but seemed to continue as a narrower feature that was clearly related to the main enclosure ditch at the north. The latter could be a genuine archaeological feature, perhaps an internal division that is conflated with a natural feature which it happens to cross. However, it runs closely within the main ditch and across the line of a bank if there was an internal one suggesting that the ditch was following the line of a pre-existing natural feature. At the south-east the line of the main ditch appears to have been deflected around a large natural anomaly, perhaps a large glacial erratic boulder that was encountered during cutting the ditch.

If the enclosure was a settlement of the second or first millennium BC then the outline of roundhouses might be expected. The absence of such features suggests it may be a Neolithic enclosure of which the buildings may have been of insubstantial construction and therefore undetectable or easily eroded by ploughing. Even so, permanent settlement might be expected to have left areas of burning so the options are either that it is an enclosure of Early Neolithic date with only seasonal use, or a cattle enclosure. The slightly irregular oval shape of the enclosure itself argues against a ceremonial Later Neolithic or Bronze Age date since enclosures of those periods tend to be more accurately circular.

5.2 GWYDDELFYNYDD, BRYN CRUG, TYWYN, MEIRIONNYDD (PRN 522)

5.2.1 Introduction

This large ring ditch feature lies on the lower floodplain of the Afon Dysynni at only 5m OD, close to Bryn Crug, north of Tywyn (Fig. 7). It was first noted on a J.K. St Joseph aerial photograph and recorded by Peter Crew (Crew and Musson 1996) and is one of a number of crop mark features in the area (Fig. 8). The crop mark shows a large, neatly circular ring ditch enclosure about 70m diameter with no visible entrance but partly lying under existing field banks. There is no hint of the enclosure on the ground, which has probably been intensively cultivated in the post-medieval period. The enclosure has been suggested to be a possible henge (Lynch *pers. com.*) because of its size, regularity, location and lack of settlement evidence (i.e. possible houses) and so was included in the present project. Beyond it to the south the aerial photograph shows a group of possible small ring ditches although the presence of a complex network of periglacial features visible on the aerial photograph makes identification of these smaller features uncertain. To the west, however, other photographs (Fig. 8) show some definite features including another smaller sub-circular enclosure, *c.* 60m diameter with an entrance at the south, probably overlaid by a sub-rectangular enclosure *c.* 40m square attached to an extended series of boundaries. The latter connect with some modern field boundaries indicating that the modern sub-rectangular field pattern still incorporates elements of much earlier boundaries. The western complex of crop marks is a scheduled ancient monument (SAM Me 106).

5.2.2 Geophysical Survey (Figs 9-10)
D. Hopewell

Survey conditions

A 100m x 80m area was surveyed centred on the cropmark. The field was flat with no obstacles apart from a field boundary cutting one edge of the site. Background noise levels were fairly high.

Results

The survey produced one very clear circular anomaly (1) almost certainly a ditch. The feature describes an almost perfect circle with dimensions of 74.7m x 74.9m. The outer side of the anomaly is slightly stronger perhaps indicating a ditch with asymmetrical fills or an asymmetrical profile. A slight negative anomaly (2) along its inner side particularly on the west could indicate a ploughed out remains of a bank. A narrow meandering anomaly (3) cuts across the edge of the western part of the circle. This appears to be the ditch of a later field boundary incorporating the line of the enclosure bank (see 5.2.4 Discussion, below). There are no signs of any activity inside the enclosure and no entrances are visible. The background patterns across the whole of the survey area appear to be a combination of meandering periglacial features crossed by two different alignments of closely spaced modern plough-scars. Two narrow linear anomalies (4 and 5) are almost certainly a result of modern agriculture.

Conclusions

The cropmark consists of a single near-perfectly circular ditch with no breaks or entrances (unless they happen to coincide with the hedge-bank). The possible slight remains of a bank run along the inside of the ditch. The outer part of the circular anomaly is stronger than the inside perhaps as a result of the bank having eroded into the ditch.

5.2.3 Soil Survey

All the fields here are currently under grass pasture but have been well cultivated and are likely to have been used for arable in the past. 13 soil test pits were dug (Fig. 11). The ground surface here is on the floodplain and almost level. The pits show the topsoil is to be of very even consistency and depth, of around 030m (Table 2). All but one pit showed that the ploughsoil lay directly over the subsoil of fine silty gravel. This was generally similar everywhere, indicating that any ploughing cuts directly to the subsoil surface and so affecting any archaeological horizons. Two of the pits, 2 and 10, appeared by subsequent comparison with the geophysical survey to lie over the presumed enclosure ditch. However, the pits revealed only what appeared to be natural subsoil. Pit 9 was the only pit that did not reveal the same subsoil as elsewhere. The exposed soil was darker silt and a possible archaeological feature. However, the aerial photograph and the geophysical survey show the presence of a network of narrow periglacial features, perhaps ice wedges and it could be one of these that was encountered in Pit 9.

Table 2 Soil pitting results

1. 0.32 Orange-brown silt with 60% fine gravel and scattered sub-angular stones and broken pebbles up to 100mm long.
2. 0.29 Ditto
3. 0.30 Ditto
4. 0.29 Ditto
5. 0.28 Ditto
6. 0.30 Ditto
7. 0.28 Ditto
8. 0.32 Ditto
9. 0.40 On mid-brown silt. Not bottomed. Possible archaeological feature.
10. 0.33 As 1.
11. 0.27 Ditto
12. 0.39 Ditto but more stony.
13. 0.30 Ditto

5.2.4 Discussion

Although the background noise levels were high the geophysical survey results were good and can be regarded as a reliable record of what is present although smaller features might be difficult to detect. However, the results are difficult to interpret. The main crop mark circular enclosure appears to a ditch of a significant size, perhaps 4m wide. Plough erosion means that there is little indication of whether the bank was on the inside or outside of the ditch. However, there is a slight indication that the bank was on the inside.

The geophysical survey recorded a bias in the ditch anomaly, with stronger signals from the outside, suggesting an asymmetric fill or asymmetric profile, suggesting that most material was weathering from the inside of the enclosure. Also, the present day field bank runs along the inside of the circular enclosure ditch at the north-west side and seems likely to have done so because at the time it was created it was following the line of an existing feature. As discussed above, it is possible that the existing more irregular boundaries, like this one, continue the line of Roman or Iron Age boundaries shown on Fig. 8. The geophysical survey also shows a linear anomaly along the inside edge at the south-west side of the circular enclosure that could be another trace of a bank, preserved by a further length of early field bank preceded the present rectilinear layout at this side. The short length of present boundary here alongside the enclosure is now just a wire fence but at the time of St Joseph's photo in

1976 this was still a hedge bank and slightly further north-east than the present fence line (Fig. 8, inset). The short stretch of field bank here has been levelled since 1976. The present field boundary of the rectilinear enclosure there that continues to the south-east is quite different and is a neatly built dry stone wall. Traces of a possible ditch of an earlier enclosure on a different line can be traced on the aerial. The circular enclosure seems to have been an upstanding internally-banked feature when the early field system was laid out, and which incorporated the circular bank into its layout.

The most distinctive feature of the enclosure is its almost perfect circular regularity and this suggests it was very carefully laid out and constructed and so for a ceremonial rather than a settlement function. This contrasts with the clearly asymmetric shape of the Tytandderwen enclosure, above, which for the same reason seems more likely to be a settlement. A ceremonial function is also suggested by the apparent absence of an entrance. A small part of the enclosure was not surveyed because it lay under the existing field bank, hedge and fence but the area was so small it seems unlikely to mask an entrance. A ceremonial function may also be indicated by the lack of internal anomalies in the geophysical survey results as domestic use could be expected to produce anomalies from pits or hearths even if dwellings did not show.

This seems likely to be a funerary or ritual monument of some type although the lack of internal features makes it difficult to interpret. If it was smaller then an earthen round barrow, ring barrow or enclosed cemetery would be the best interpretation but this is totally inappropriate for a circle of this size. It could have enclosed a timber circle of relatively small posts that have not registered on the survey, perhaps because they were incorporated in the bank. An internal burial or burials may not have registered as anomalies, particularly if they were inhumations. At Hengwm circles, described below, a possible inhumation grave pit excavated in 1920 was not identifiable on the geophysical survey. The Gwyddelfynydd enclosure is not dissimilar to the larger Hengwm circle, which is 60m diameter with a ditch and internal bank in which were set stones and where no obvious entrance was identified. The initial phase at Stonehenge was a simple ditch with internal bank 105m in diameter overall and associated with a circle of quite shallow internal pits. However, the ditch there was quite irregularly cut and it had a wide entrance gap on the north-east. Some sites generally regarded as henges do not have an entrance, e.g. Dorchester-on-Thames XI, Oxon. but it is the lack of an entrance that seems most indicative at Gwyddelfynydd and the similarity with Hengwm, which was associated with Beaker pottery.

5.3 CASTELL BRYN GWYN, BRYNSIENCYN, ANGLESEY (SAM An015, PRN 3140).

5.3.1 Introduction

This well-known monument lies at the south-west corner of Anglesey, on a slight plateau between two shallow valleys of the Afon Braint and the Afon Rhyd y Valley at 10m OD. It is a substantial circular bank with an external ditch, overall *c.* 85m diameter. Excavations showed that its earliest phase was in the Later Neolithic period when it possibly had two opposed entrances, suggesting that it was a henge (Wainwright 1962). It has survived so well because it was re-used and re-built in later periods as a defended enclosure. The evidence about its date and function comes from one ditch and bank cutting and the relatively small areas of the interior excavated (Fig. 13). The present survey aimed to fill out the information about any internal structures, particularly, if it was henge, it might identify major features such as a timber or stone circle.

5.3.2 Geophysical survey (Figs 14-15)
D. Hopewell

Survey Conditions

An area of approximately 50m x 50m was surveyed within the enclosure along with a smaller area of 20m x 30m on flat ground to the east of the site. The centre of the enclosure was flat and obstacle-free. The edges of the were survey extended over the defences as far as possible and some additional noise and positional inaccuracies are likely to have been introduced into the data due to the steepness of the terrain. A wire fence runs around the outer base of the defences and survey was therefore not possible in this area. Background noise levels were again high making the detection of smaller and weaker anomalies unlikely.

Results

An iron water pipe (1) runs across the centre of the site producing a very strong 5m wide anomaly. This runs through the entrance (see Lynch 1991 and Wainwright 1962) and masks all other magnetic responses in the area. An area of noise and a poorly defined linear anomaly run around the inside edge of the defences (2) probably corresponding to a deposit of rubbly clay identified by Wainwright as an element of the phase III rampart. A field boundary shown on the 1962 plan but subsequently removed may also have added noise to this anomaly. A second band of noise (3) running inside the rampart at the south of the site corresponds to the phase I stone bank. The corresponding area (4) on the west side of the site exhibits a much stronger scatter of responses, many above 1000nT, indicating ferrous responses or considerable thermo-remnant enhancement. The extent of this coincides with a field wall shown on the 1962 plan that has subsequently been removed and it seems likely that iron or wire from this boundary has been buried at the base of the rampart. A spread of metalworking debris could also have produced a similar response but this seems to be an unlikely interpretation because there was no record of such a deposit in the Wainwright's trenches at the entrance. A further faint anomaly (5) to the inside of the phase I bank could indicate the extent of a layer of buried soil identified by Wainwright that extends beyond the ramparts on the south-west of the site. Wainwright's excavation trenches are visible as negative anomalies (6).

Several additional relatively modern anomalies are visible. A linear anomaly (7) is presumably a former part of the field boundary that still exists to the west. A series of faint linear anomalies (8) in the survey area to the west of the earthwork are best interpreted as plough scars from modern cultivation.

Conclusions

Some elements of the site defences were detected but a combination of fences, modern disturbance and noisy subsoil resulted in a somewhat limited survey and no details of the interior of the enclosure could be detected.

5.3.3 Soil survey

No soil pitting was carried out because this is a scheduled monument. The inside of the enclosure was formerly a paddock at the front of the 19th century farmhouse on the east side of the enclosure and must have been considerably cultivated and trampled. The previous excavations did show that internal features such as post-holes did survive, but in the small areas excavated were difficult to interpret (Fig. 13).

5.3.4 Discussion

The geophysical survey recorded various modern anomalies and several that were recorded during the previous excavations including some of the excavation trenches themselves. However, no features were recorded that provided any new information about the site either in its later or earlier phases. Parts of the bank were surveyed and there were no strong signs of burning so it seems unlikely that the later enclosure was reduced by fire. An area outside the enclosure immediately in front of the entrance was also surveyed. This was designed to pick up any possible avenue feature leading towards the entrance, if this was a henge. However, no such features were located. The survey results were affected by an iron water pipe that was found to cross the middle of the site, creating a strong linear anomaly. Otherwise the survey area was hampered by strong background noise and probably by previous ground disturbance including the previous excavations. The status of the enclosure as Neolithic in origin is assured but its ceremonial status is uncertain. However, it lies in an unusual position and seems to form a group with the Bryn Gwyn possible stone circle to the west, described below and another possible circle of smaller stones to the east at Tre'r Dryw Bach (Williams 1871). The site was recorded in plan by Rowlands in 1723, who showed the circle with just one entrance on the west (Fig. 21). The plan suggested that Castell Bryn Gwyn and the Bryn Gwyn circle were related and also showed a large cairn between them. The Braint valley, 100m to the north is believed to have been a tidal estuary at the maximum post-glacial sea-level rise, at possibly about 4m above the present level during the Early Neolithic period (Whittow, 1965, 111) and this may have a bearing on the location of this complex of sites.

6. SURVEY RESULTS: POSSIBLE STONE CIRCLES

6.1 BRYN GWYN STONES, BRYNSIENCYN, ANGLESEY ((SAM An022, PRN 3135)

6.1.1 Introduction

The Bryn Gwyn stones stand on the same low, almost level ridge as Castell Bryn Gwyn and about 300m to the west of it. The extant remains consist of two very large standing stones, one a thin round-topped slab *c.* 4m high the other a thick angular block 3m high (Fig. 17). The two stones are 3.5m apart and do not appear to be aligned with regard to each other in any way (Fig. 18). However, early records describe them as part of a stone circle and their orientation could be interpreted as lying on an arc facing towards the centre of a circle to their north.

An 18th century description of the Bryn Gwyn site by Rowlands (1723) is of three stones and the stump of a fourth and he considered them to be the remains of a stone circle about 12-14 yards (11-13m) diameter internally. His sketch actually shows six stones (the sphere is just a romantic antiquarian symbol) and, although small the depiction appears to be true to life (Fig. 19). The tallest stone and that on the left in the picture bear a close resemblance to the two surviving stones. Unfortunately, this does not quite accord with the facts because Rowland's overall plan shows the relationship with Castell Bryn Gwyn and this indicates that the drawing is as if viewed from the south (Fig. 21). This would make the circle appear to be on the south side of the two surviving stones. Rowland's plan also shows some smaller settings of standing stones to the south of the main circle. His plan was used as the basis for a fanciful three-dimensional view by Stukeley in 1776 (Fig. 22).

Pennant also described the site in 1783 by which time only two stones were visible, the largest by this time forming the end wall of a small cottage the other forming part of a yard wall. Other visitors mentioned other stones nearby, up to 12 in number and one says it was 'a circle of upright stones, the diameter of which is 52yds' (Nicholson 1840, 161). Nicholson also says that two large stones 'lay 20yds east of the circle'. The cottage was recorded in a drawing by Skinner in 1802 (Fig, 20) but this was demolished before 1841, probably during a complete revision of the field system to create the present large straight sided fields. Some of the standing stones were probably broken up to create the facing for the present field bank. The largest standing stone formed one gable wall of the cottage and three slight notches are visible that were chipped into its top to hold the rafters (Fig. 17). The position of the cottage is difficult to identify from Skinner's drawing because the view does not easily match the actual position of the two surviving stones. The smaller stone (i.e. that in the foreground of the drawing) was described as being behind the cottage and forming part of the garden wall. A third smaller stone (Stone C), a slab set on edge, about 0.45m high, not previously described, lies alongside it and seems to be the remains of this garden wall and the cottage seems to have extended northwards from the larger stone (Fig. 18). There is slight depression in the ground surface in this part of the field, perhaps where the foundations of the cottage were dug out to clear the field for cultivation.

The Royal Commission in 1937 described the traces of a ditch with an external bank enclosing the site of the stone circle, the bank about 225yds circumference (66m diameter), the ditch about 120yds circumference (35m diameter). There is no sign of this bank and ditch today although there are slight undulations in the field surface. A dip towards the north-east edge of the fields is part of a natural shallow valley running down to the nearby river (Fig. 16).

The field surface was searched for surface finds, such as worked flint objects, after ploughing in 1991 but nothing was found (GAT file). The aim of the present project was to locate and establish the validity of the stone circle and of the bank and ditch described by the RCAHMW although it was realised that the former presence of the cottage would be likely to confuse the matter.

6.1.2 Geophysical Survey (Figs 23-24)
D. Hopewell

Survey Conditions

The survey was carried out in a flat field with no obstacles apart from a hedge bisecting the possible stone circle. Background noise levels were fairly high and the zero reference point had to be located in a nearby former river channel where there was less natural variation in the soil. A square area, with dimensions of 80m by 80m, centred on the standing stones, was surveyed.

Results

The natural subsoil produced a random spread of low-level anomalies making the identification of smaller discrete features such as pits and stone holes problematic. The most obvious anomalies are a series of linear features best interpreted as ditches (1 to 3) delineating a former field system. The narrow curvilinear nature of the east-west orientated elements suggests that the boundaries originated as medieval strip fields. A negative anomaly along the line of ditch 3 suggests the presence of a ploughed down field bank. Boundary 4 cuts across and does not appear to conjoin the other ditches and is probably of a later phase, inserted in order to create smaller enclosures around a former cottage that stood at the centre of the survey area. The cottage was built around the stones and the remains of the building along with ferrous debris associated with a field gateway has created a scatter of strong anomalies (5) in the area around the standing stones.

A faint curvilinear anomaly (6) is visible, forming a crescent-shape around the stones. The anomaly is diffuse and negative and could be interpreted as the remains of a bank. It contains a series of small circular anomalies, some of which could be interpreted as stone sockets, but given the amount of similar features originating in the subsoil a natural origin is equally possible. A line of four anomalies on the western side may be significant but could still be a chance occurrence. The possible bank runs outside any alignment that could be projected from the two remaining stones. It could therefore be interpreted as an embankment around the former circle. Its alignment is however not obviously coincident with the stones and an unrelated origin is most likely, possibly a natural variation in the subsoil or a later enclosure related to the former cottage.

Conclusions

The survey was hampered by the presence of later features centred on the standing stones and high levels of magnetic variation in the natural subsoil. The remains of a former field system probably originating as medieval strip fields is clearly visible. There is however nothing that can be reliably interpreted as being associated with the reported stone circle. There is slight possibility that a weak anomaly could correspond to an embankment around the former circle and several small anomalies could correspond to stone sockets but a natural or later origin is most likely in both cases.

6.1.3 Soil survey (Fig. 25)

This was a scheduled site but the scheduled area includes only that within 10m of the two standing stones, so the soil pitting was all carried out beyond this area (Fig. 25).

12 pits were dug and these showed a fairly even topsoil depth between *c.* 0.27m to 0.37m over a subsoil of orange-brown silt with small cobbles (Table 3). One, pit 9, exposed different subsoil, a stone-free silt but this was probably just the fill of a natural periglacial feature. Pit 10 exposed a deeper silty loam with some charcoal at its base, at -0.56m. The geophysical survey showed that this pit was probably situated over a relict pre-19th century, possibly medieval, field boundary. The position of two pits, 3 and 6, determined by the pattern of the grid, lay close to the modern field bank where they could have cut into a quarry ditch. They were therefore cut 2.5m and 3.5m respectively west of the grid. Even so, both proved to lie over possible archaeological features. Pit 3 exposed a red-brown silty loam and was not excavated further. Pit 6 exposed orange-brown silt at -0.23m and stony gravel at its base at -0.52m.

Table 3 Soil pitting results

1. 0.36 Orange-brown silt with small cobbles up to *c.* 0.15m dia.
2. 0.29 Ditto
3. 0.31 Red-brown silty loam, not bottomed, possible archaeological feature. Possibly field drain/quarry ditch although pit dug 2.5m out from field wall to try to avoid any possible field bank ditch.
4. 0.31 As 1.
5. 0.27 As 1.
6. 0.23 Orange-brown silt to -0.33 to stony gravel at 0.52m. Pit dug 3.5m out from wall to avoid any possible field bank ditch.
7. 0.31 As 1.
8. 0.35 As 1.
9. 0.25 Red-brown silt to 0.42. Compacted yellow-buff silt to 0.50, then same but more compact.
10. 0.23 Yellow-brown silty loam with charcoal at base at 0.56, then compact buff silt.
11. 0.29 As 1.
12. 0.37 As 1.

6.1.4 Discussion

The identification of an earlier field system here, on a totally different alignment to the present boundaries was unexpected but very useful in looking at the present very rectilinear field pattern. Geophysical feature 3 appears to be the north boundary of a narrow strip field that is slightly sinuous, suggesting a medieval origin. However, at only 12m wide at its narrowest this is narrow even for a medieval strip field (standard width 22yds). Also, the southern boundary of the strip is rather straighter which suggests that it may be a later addition. The presence of the narrow strip may therefore be misleading and no other strips are visible further to the south. The smaller enclosures defined by feature 4, to the north of feature 3 seem likely to be paddocks associated with the former cottage. The ground plan of the cottage is not identifiable on the survey but most of it would lie within the unsurveyed strip around the modern field bank.

The most interesting feature is the possible curvilinear enclosure 6, although it is too faint for its identification as such to be reliable. It lies around the former cottage and stone circle but neither is central to it. Its apparent curvilinear plan suggests an early feature that was re-used by the cottage. If it was an enclosure it seems to have been oval and about 37m by 30m and these measurements do match closely with those of the ditch described by the RCAHMW in 1937, except that the feature identified here seems more likely to have been a bank. The small anomalies along the line of feature 6 are interesting as possible stone-holes or stone stumps but could also be hearths or other magnetic areas within a ditch fill.

The large standing stone (B) that formed the gable of the cottage is unusual for a standing stone in that it is a large thin slab. It therefore seems more like a piece taken from an outcrop of bedded rock than an erratic boulder and therefore perhaps specially selected and brought from some distance. It was identified by Greenly as of 'chloritic quartzose schist, which is not known nearer than seven or eight miles to the north-east' (Baynes 1910, 65). The size and shape of the slab also suggests another possibility, that it was the originally the cover of a chambered tomb, later re-used as a standing stone. Baynes (*ibid* 64) notes that it is oriented 'to the equinoctial sunrise' which may indicate that the stone circle was a deliberate astronomically related structure. The smaller stone (A) was identified by Greenly as of local mica schist. It is an angular stone and also seems likely to have come from an outcrop and the nearest outcrop would appear to be on the north side of the Braint valley.

The possible presence of a stone circle here and at Tre'r Dryw Bach and of a henge at Castell Bryn Gwyn suggests that they comprise a grouping of ceremonial monuments similar to those found elsewhere e.g. at Llandygai (Gwynedd), Knowlton (Dorset) and Thornborough (Yorkshire). However, the Tre'r Dryw Bach circle is known only from one 19th century description (Williams 1871) and was not mentioned by any earlier or later visitors so it may have been a random spread of natural stones, not be a genuine archaeological site. Rowlands also mentions and illustrates a large cairn (*carnedd*) midway between Castell Bryn Gwyn and the Bryn Gwyn circle although his detailed sketch of it makes it look more like the remains of a later stone-walled settlement (Fig. 22 top centre). Nevertheless, the cairn was also mentioned by Pennant who says it was once 'a great copped heap of stones' (Pennant

1783). There is no sign of this cairn today but it would lie approximately where there is now a small 19th century farmhouse, yard and outbuildings, Bryn Gwyn Bach (Fig. 16).

Excavation at other standing stones (e.g. Lynch 1980) has shown that the sockets for standing stones, at least as they survive today, may be shallow and irregular. Such features, without a stone or stone stump, may be difficult to identify by excavation and even more so by geophysics. Possible features associated with the 18th century cottage here also make identification from the geophysical survey problematic.

6.2 MEINI HIRION, CEFN COCH UCHAF, GARNDOLBENMAEN, GWYNEDD (PRN 2360)

6.2.1 Introduction

Two low upright stones, 109m apart, stand within a rectangular post-medieval improved field which lies on a gentle west-facing slope at 190m OD and one or other of has been recorded as the former location of a stone circle. The position is fairly central within a large upland basin with views to the west but surrounded by hills elsewhere (Fig. 26). The uncultivated marginal areas of the surrounding hills and valleys have many recorded examples of prehistoric hut circle settlement but surprisingly few examples of funerary or ritual monuments. A small stone circle, possibly a ring cairn, once existed 1.5km to the south close to a pass through the hills at Cwm Mawr but seems to have been cleared away in recent times as part of agricultural improvement. A small kerbed cairn lies on the east side of Cwm Pennant and there several simple burial cairns including one on the summit of Moel Hebog, from which came a Beaker pot (RCAHMW 1960, xlvi-ii). A standing stone on top of a nearby hillock is a modern feature.

The nearest evidence of Neolithic activity is a small chambered tomb at Cist Cerrig on the southern slopes of Moel-y-gest, 4km to the south-west, on the other side of a former tidal estuary. This would have been a sheltered landing place and the area would seem favourable to Neolithic and Bronze Age settlement, even though there is little evidence of it. This is confined to a few finds of stone axes around the fringes of the upland, the nearest at Bryncir, 5km to the west.

The Meini Hirion - 'Long stones' – have some recognised antiquity partly because of the name attached to them because they do not seem to merit the name now, the largest being 0.9m high the other only 0.5m. The use of the plural for the name indicates that there was always more than one stone. The earliest record is from 1868 which described it as a stone circle - 'an ellipsis of 14 columns of which 12 were standing' and measuring 20.1m by 16.5m (*Arch. Camb.* 1868). The western stone was regarded as a natural earth-fast boulder and the eastern smaller stone as a possible broken standing stone by the Ordnance Survey (1979) (Figs 27-29). Therefore, it being uncertain, a survey was carried out around both stones of sufficient area to include a stone circle if it were of the size described in the 19th century. The farmer himself was curious to know which of his stones was the real meinhir.

At the west edge of the field is a cutting for a 19th century quarry railway and in this are dumped a number of large stones, one of which is a particularly fine tapering long stone and could well have been a former standing stone (Figs 30-31). The rest are not obviously longstones and if these dumped stones were part of a circle it was made from local sub-angular erratics rather than specially selected, pieces. The pile of stones shows that some major clearance has taken place in the 20th century and possibly the two stones left in the field are the only ones that could not be uprooted. The purpose of the survey was to try to locate the position of the reported stone circle and to provide some evidence to support its identification as a stone circle.

6.2.2 Geophysical Survey (Figs 32-33)
D. Hopewell

Survey conditions
Conditions were good with no impediments to the survey. Background noise levels were low.

Results

Two areas were surveyed each centred on the standing stones. Area A had dimensions of 40m x 40m and area B 40m x 60m. The dimensions of the survey areas are presumed to be sufficient to encompass the former Cefn Coch stone circle.

Area A
The standing stone is visible as an approximate +/-35nT dipole in the centre of the survey. This suggests that the stone is magnetic igneous rock. Several similar anomalies are visible. These are indicated with small circles on the greyscale plot. It should, however, be noted that it is almost impossible to distinguish between a dipole produced by a stray piece of iron in the soil and a magnetic stone. The anomalies do not form any obvious arrangement suggesting a stone circle.

A very faint roughly circular anomaly (1) lies mostly to the south of the stone. This has been indicated on the greyscale plot but is very poorly defined and is most likely to be a chance variation in the natural subsoil. A linear anomaly, running from east to west is best interpreted as a drain or former field boundary.

Area B
Area B also contains a number of dipoles, one of which corresponds to a standing stone. There is again nothing to suggest the presence of a stone circle.

Two linear anomalies (2 and 3) are characteristic of land drains.

Conclusions
The survey failed to find any obvious signs of the former stone circle. Anomaly 1 in area A could merit further investigation but is unlikely to be significant. If the stones have been removed from their original positions, as opposed to being buried, and the field has been ploughed, the only remaining features would be relatively shallow holes that may not be detectable by the gradiometer.

6.2.3 Soil Survey

The area surveyed was relatively small, consisting of tem 20m grid squares. Six soil pits were dug around the eastern stone and 5 around the western. These all showed very shallow topsoil between 0.16m and 0.24m deep. There was little difference in the subsoil over the field which was clayey silt with numerous sub-angular slate fragments. All pits came down onto apparently natural subsoil with no evidence of archaeological features. The field was in stubble at the time of the visit and so seems to be in regular arable use.

Table 4 Soil pitting results

1. 0.18 Mottled orange-buff clayey silt with numerous slate and small sub angular fragments.
2. 0.21 Buff grey silt with numerous slate and small sub angular fragments
3. 0.21 As with some iron concretions.
4. 0.17 Orange-brown clayey silt with numerous sub angular slate fragments.
5. 0.24 ditto
6. 0.21 ditto
7. 0.16 ditto
8. 0.23 ditto with some larger sub angular non-slate stones.
9. 0.21 As 8
10. 0.21 As 8 with some heavier iron staining.
11. 0.19 As 8.

6.2.4 Discussion

Presuming that the 19th century description was correct then only one of these stones could be part of the circle. A lone standing stone nearby could have been overlooked. The eastern stone was regarded by the Ordnance Surveyor as more likely to be genuine. It is more column-like and although now broken seems to have once been taller and so more convincing as a standing stone. However, the western stone is larger and slab-like so does seem to have been set upright on its edge and unlikely to

be just a natural *in situ* boulder as described by the OS. Its top appears to have chipped, perhaps during attempts to remove it (Fig. 28).

The geophysical survey did not produce any significant results although there are faint, possible but very uncertain features in both areas. The clearest is that in the western area (Feature 1), which is an oval about 20m by 16m with the western stone close to its edge. This happens to be about the size and shape of the 'ellipsis' recorded in 1868. In the east area there is a faint feature that might be a sub-circular bank *c* 30m diameter with the east stone on its north perimeter. The survey has proved to be inconclusive and has still not demonstrated the presence of a stone circle here. It is still possible that the 19th century description was just a fanciful interpretation of a group of natural erratic stones.

6.3 HENGWM STONE CIRCLES, EITHINFYNYDD, MEIRIONNYDD (SAM ME136, PRN 1087 and PRN 1088)

6.3.1 Introduction

The area surveyed comprised two formerly embanked large stone circles, although now they survive above ground only as slight circular banks. Parts of both were excavated by O.G.S. Crawford in 1919 (Crawford 1920). The circles lie close alongside each other in an area of upland plateau at 310m OD, with wide views all around and over the sea to the west. They lie in an area so rich in funerary and ritual monuments that it must be considered as a kind of focal ceremonial area (Fig. 35). 750m to the south-west are two large Neolithic chambered long cairns, the Carneddau Hengwm. 700m to the north-west is a small stone circle or ring cairn at Llecheiddior, close to several large stone round cairns. 1km to the south is a small complex cairn and there are several other cairns in the area. Not far to the north are two Neolithic chambered tombs at Bron-y-foel Uchaf and Corsegedol. The Hengwm circles and the long cairns lie on a gentle west-facing slope and so are not in topographically prominent positions like many round cairns. However, they are prominent in another way in that they lie within a large open area and visible from most areas within the large plateau-like basin the Hen Gwm – Old Basin, as well as being visible from the hill ridge to the east. Another factor in their location is their proximity to an old coach-road that probably continued the line of a much earlier route connecting the coastal plain to the north with the route around the east end of the Mawddach estuary. This passed next to the circles and continued over a pass in the hills, Bwlch y Rhiwgr whose antiquity is marked by a large ring cairn at the summit of the pass. Further on down the other side of the pass the track passes by another stone circle Cerrig Arthur. The proximity of the monuments in Hengwm to a possibly ancient trackway is paralleled in other similar foci of funerary and ritual monuments at Llyn Cregennen (Arthog) and Cefn Coch (Penmaenmawr).

The northern circle is the smaller of the two at 37m diameter overall. The excavations in 1919 indicated that this was a simple ring ditch. The ditch was quite neatly cut and flat-bottomed. There were traces of an internal bank on the surface but it could not be proved on excavation. No standing stones stumps or holes were found. However, Pennant visited the circles in the late 18th century and described both of them as stone circles. The excavation opened up an area within the centre of the circle and located a shallow elongated pit, slightly off-centre, which was interpreted as a grave for an unaccompanied inhumation burial. A few Beaker sherds were found close to but not in the pit. A feature that, as described, seems to have been a small stone cist containing ashes was also found in the interior.

The southern circle is the largest of the two, at about 55m diameter overall, consisting of a wide ditch with traces of an internal bank, in which were set a circle of standing stones. Only a few were still standing and visible on the surface, others were located by excavation as broken stumps (Fig. 39). The probable positions of other stones in the arc were identified by stone holes (Figs 36 and 37). Most of the stones of the circle seem to have been removed or broken off during improvement of the area about 1840, and probably used in the construction of nearby boundary walls. There is also a dump of larger stones in a gully down slope just to the west of the circle. No internal features were found but a possible stone slab cist containing 'ash' was found just outside the circle to the west and several Beaker sherds were found at the south-east side of the circle within the construction hole of one of the surviving standing stones.

The previous excavations (Figs 37-40) provided much information about the circles but the trenches investigated only a small part of the whole, the majority being unexplored. Many of the possible stone holes in the southern circle were identified only from vague above ground evidence but the resulting plan does match quite well with the spacing of actual stones seen in the excavated area at the west (Trench 11). The presence of banks and entrances was not confirmed. The present survey aimed to answer some of these questions and provide a fuller picture of these important monuments.

6.3.2 Geophysical Survey (Figs 41-43)
D. Hopewell

Survey conditions

An area with maximum dimensions of 140m x 80m encompassing both stone circles was surveyed. The area was fairly flat with occasional small obstacles. Background noise levels were moderately high in the area.

Results

The two circles are immediately obvious and closer examination shows both to consist of a complex series of anomalies. Interpretation was helped by comparison with Crawford's 1920 plan and excavation report. The geophysical survey results are shown with an overlay of the plan on Fig. 41.

A large number of small positive anomalies probably indicating stones were detected across the whole site. The most significant are shown on the interpretation plan. In this case a faded greyscale plan has not been used as the background because the smaller elements of the interpretation were not clear.

The northernmost and smallest circle consists of a clearly defined ditch (1) describing a slightly irregular circle with a diameter of 37m. Weaker negative anomalies (2 and 3) can be seen on both sides of the ditch suggesting that the excavated material was spread on both sides perhaps to form low banks of the type identified by Crawford on the inside edge. The grave and fire pit identified in the excavation were not detected by the gradiometer. There does however seem to be a circular band of anomalies (4) running around the inside of the circle consisting of 3 or 4 pairs and several single small discrete anomalies that could be interpreted as pits stones or stone-holes. These are linked by a weak band of noise that could be the remains of a bank. There is no sign of an entrance to the circle.

The larger circle is more complex and the anomalies more difficult to interpret with any certainty. The site produced a series of concentric circular anomalies (5-9). Anomaly 5 consists of many small anomalies and is best interpreted as a stony bank although smaller curvilinear elements at the south hint at some kind of structural elements. To the outside of this is a slightly less noisy bank (6) containing lines of discrete anomalies that correspond fairly closely to the stone-holes recorded by Crawford. A third circular anomaly (7) with a diameter of 58m is less well-defined but appears to correspond to the shallow ditch identified in the excavations. A further curvilinear anomaly (8) running around the outside of the circle is well-defined at the south-east of the survey. This is a positive anomaly and could be a ditch. An entrance cannot be positively identified although there are hints of a break on the southern side (9).

The entire survey area is crossed by a series of linear anomalies that are typically produced by ploughing. The ploughing clearly predates the field walls and also becomes irregular when crossing the large circle implying that the stones were still standing at the time.

Conclusions

Details of both circles were detected and the survey emphasises the difference between the two monuments. The smaller circle consists of a simple ditch with possible low banks on both the inside and outside. A circle of anomalies indicates the presence of internal features, perhaps a circle of pits or stone holes. The larger circle appears to consist of primarily of an outer ditch enclosing a slight bank that formerly incorporated a large number of stones. Results from the southern side of the circle suggest that other elements are present, perhaps an inner stony bank and a second, wider, outer ditch.

The entire area was ploughed at some point, perhaps immediately before the fields were enclosed and improved.

6.3.3 Soil survey

No soil pits were excavated here because the site is protected as a scheduled ancient monument. The previous excavation records show the depth of soil cover to be between 25-35cm.

6.3.4 Discussion

The geophysical survey northern circle provides evidence of both internal and external banks and suggests that there may have been a smaller circle of standing stones about 20m diameter within the ring bank. The southern circle showed much greater complexity than that suggested by Crawford's excavation, with another concentric anomaly within the stone circle, possibly a stony bank or elaboration of part of the bank. It also showed a further probable ditch outside that previously identified, but concentric to it on the southern arc of the circle. No definite entrance was identified and no internal features, but the possible inhumation grave inside the northern circle identified by Crawford was not visible so similar features would probably not be located therefore.

A linear feature crossing the site and speculated about by Crawford was shown to be a post-medieval cultivation mark and just one of many that crossed the area. These must derive from improvement of the area about 1840 and the survey showed that they were earlier than the adjoining fridd wall. This shows that the whole of the area was cleared of stones and cultivated for improvement before construction of the enclosure walls. The cultivation marks clearly diverge around the stone circles, with only a few crossing them. It is surprising that the open moorland beyond the present boundary wall was also improved as there are no clearance cairns there. Also, the cultivation seems to have continued across the line of the coach road, as it is now, although it may have taken a different line before improvement.

The results show that both circles have much more complex structures and therefore probably histories, than suggested by both the above ground remains and the previous excavations. Both circles have suggestions of at least two phases of construction. Although almost all the stones of the circles were removed during 19th century improvements, Crawford's excavation showed that many stones may survive as broken-off stumps and the additional evidence from the geophysical survey shows that 19th century cultivation largely avoided the interior of the circles, indicating that these may have quite good preservation.

7. SUMMARY AND RECOMMENDATIONS

Tytandderwen, Bala, PRN 9982.

Value: The geophysical survey confirmed the existence here of a substantial enclosure, suggested to be Neolithic or possibly earlier Bronze Age settlement although no diagnostic internal features were identified. Further understanding can only come from excavation and the recovery of artefactual or other dating evidence. This type of enclosure is rare nationally and valuable and it deserves further investigation.

Vulnerability: There was a relatively shallow soil here making it vulnerable to ploughing. However, although the field has been ploughed in the recent past at present it is in permanent pasture because the farmer now leases all his land to allow him to concentrate on his caravan park business.

Gwyddelfynydd, Bryn Crug, PRN 522

Value: The enclosure was confirmed and suggested to be a ceremonial enclosure on the grounds of its careful design and lack of an entrance although no diagnostic internal features were identified. Its size and design suggests it is at least related to the henge monuments but may be of Bronze Age date. It is larger than any circular enclosures so far identified in North Wales, apart from the henges at Llandygai.

It remains of uncertain date and attribution but is of a rare type and potentially valuable so deserves further investigation.

Vulnerability: The field has been intensively cultivated in the past and there are no upstanding remains although at the time of the survey was under pasture. Occasional ploughing is likely in future. The soil survey shows that the area now has only cultivated soil directly over subsoil with no preserved horizons. The only exception might be beneath a short stretch of field bank at the north-west which could have Iron Age or Roman origins and could have small areas of earlier sealed deposits.

Castell Bryn Gwyn, Brynsiencyn, PRN 3140, SAM A15

Value: This is a scheduled ancient monument with a well-preserved enclosure bank. No new features were identified due to noisy subsoil and the presence of an iron water pipe across the centre of the site. However, this is a nationally important site and knowledge about the nature of the Neolithic activity derived from the earlier excavations is tentative. Re-assessment of the site is really needed, possibly by re-excavation of some of the old trenches.

Vulnerability: The site is a protected monument and there is currently no erosion or threat.

Bryn Gwyn Stones, Brynsiencyn, PRN 3135, SAM A22

Value: The possible presence of a stone circle here was not satisfactorily confirmed but geophysical survey has produced some features that require further investigation and further understanding can now only come from trial excavation. As a scheduled site it is recognised as of national importance but the survey suggests that it may include an enclosure that extends beyond the present scheduled area. The presence of a major stone circle here is in need of confirmation and the possibility of a focus of ceremonial monuments in this area, including Castell Bryn Gwyn adds to the overall value and increases the potential for other activity in the area as yet unidentified.

Vulnerability: Although the area around the stones is scheduled the fields are still intermittently ploughed and the soil survey showed a relatively even shallow topsoil over a silty subsoil and suggested that the modern ploughing, which goes over the site of the stone circle must be cutting into the top of the subsoil. The protection therefore only applies to the standing stones, not to the overall remains.

Meini Hirion, Garndolbenmaen, PRN 2360

Value: The geophysical survey results were uncertain and the presence of a stone circle could not be confirmed but is still a possibility. Better understanding can only be reached by excavation to provide firm evidence.

Vulnerability: The survey showed that the topsoil is very shallow, which means that any cultivation will cut into the surface of the subsoil and reduce any remaining archaeological features although without excavation there is no evidence that such features exist. The field was under stubble at the time of the visit and so is subject to ploughing.

Hengwm Circles, Eithinfynydd, PRN 1087, 1088, SAM Me136

Value: The circles are of recognised national value and have benefited from previous excavations. However, the excavation was not a modern one and Crawford's records of stratigraphy are minimal and he admits that recognition of the limits of the ditch of the southern circle or of smaller features was uncertain. Re-excavation of some of Crawford's trenches, particularly those in the interior and those providing cross-sections of the ditches and banks would be very useful without intruding on the intact parts of the circles. It would provide a better record and perhaps additional information such as dating and environmental samples and allowing re-interpretation of the earlier excavation and of the geophysical results.

Vulnerability: The site is a protected monument and there is currently no erosion or threat.

8. REFERENCES

Arch. Camb. 1868. Porthmadoc Meeting Report, *Arch. Camb.* XXIV, 479.

Baynes, E.N. 1910-11. The Megalithic Remains of Anglesey, *Trans. Hon. Soc. of Cymmrodorion*. 1-91.

Bowen, E.G. and Gresham, C.A. 1967. *History of Merioneth, Vol. 1*, Merioneth Historical and Record Society, Dolgellau.

Crawford, O.G.S 1920. An account of the excavations at Hengwm, Merionethshire..., Arch. *Camb.* 6th ser. XX, pt 1, 99-133.

Crawford, O.G.S 1921. Note. An account of excavations at Hengwm, *Arch. Camb.* 7th ser. I, pt 2, 305-6.

Crew, P. and Musson, M. 1996. *Snowdonia from the Air: Patterns in the Landscape*, Snowdonia National Park Authority and the Royal Commission on the Ancient and Historic Monuments of Wales.

Griffiths, W.E. 1960. The excavation of stone circles near Penmaenmawr, North Wales, *Proc. Prehist Soc.*, 26, 303-39.

Kenney, J. Excavation at Parc Bryn Cegin, Llandygai, *Arch. in Wales*, 45, 3-10.

Lynch F.M. 1980. The investigation of a standing stone at Cremlyn, Anglesey, *Trans. of the Anglesey Antiq. Soc.*, 117-23.

Lynch, F.M. 1991. *Prehistoric Anglesey*, 2nd Ed., Anglesey Antiquarian Soc., Llangefni.

Lynch, F. and Musson, C. 2004. A prehistoric and early medieval complex at Llandegai, near Bangor, North Wales, *Arch. Camb.* 150 (2001), 17-142.

Nicholson 1840. *The Cambrian Traveller's Guide*, 3rd Ed.

Pennant, T. 1783. *A Tour in Wales*, London.

RCAHMW 1937. *Inventory of Ancient Monuments in Anglesey*. Royal Commission on Ancient and Historical Monuments, HMSO.

RCAHMW 1960. *Inventory of Ancient Monuments in Caernarvonshire, Vol. 2*. Royal Commission on Ancient and Historical Monuments, HMSO.

Rowlands, H. 1723. *Mona Antiqua Restaurata*, Dublin. Reproduced 1993, Redesmere Press, Macclesfield.

Skinner, J. 1802. *Ten days' tour through the island of Anglesey*, *Arch. Camb.* supp. 1908.

Stukeley, W. 1776. *Itinerarium Curiosum II.*

Wainwright, G.J. 1962. The excavation of an earthwork at Castell Bryn Gwyn..., *Arch. Camb.* 111, 25-58.

Whittow, J.B. 1965. The Interglacial and Post-glacial strandlines of North Wales. In J.B. Whittow and P.D. Wood *Essays in Geography for Austin Miller*, Univ. of Reading.

Williams, W.W. 1871. Mona Antiqua, *Arch. Camb.* 4th Ser. Vol. II, 34-40.

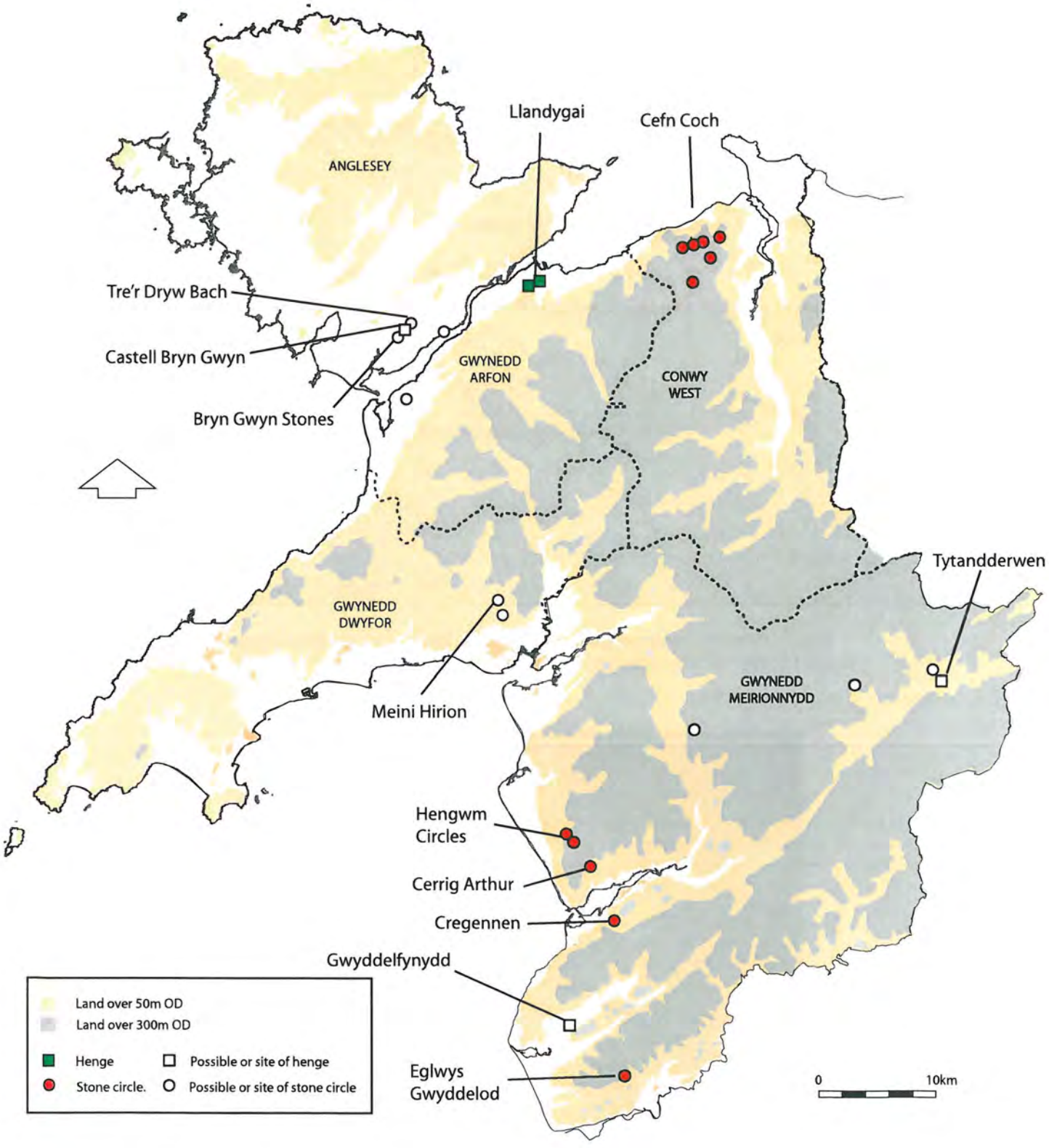


Fig. 1 The location of all recorded henges or stone circles, known or possible in north-west Wales

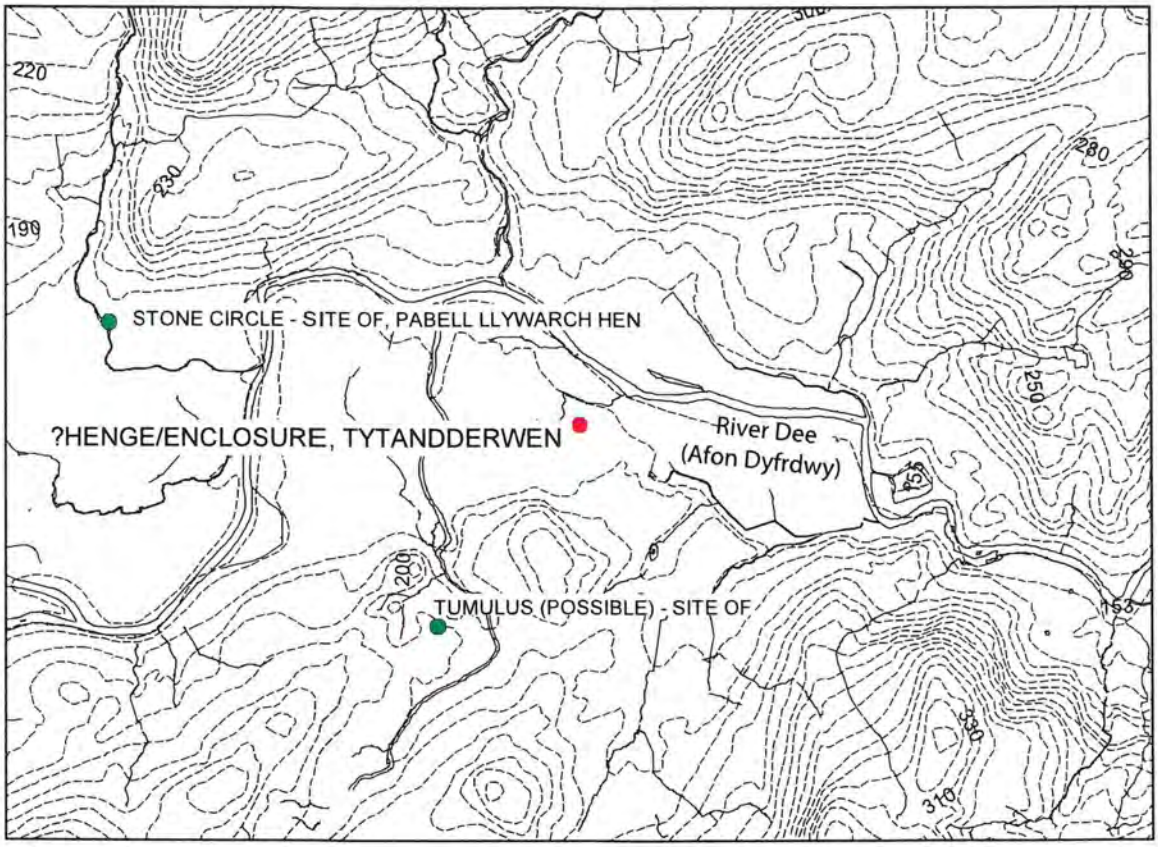


Fig. 2 Tytandderwen cropmark enclosure, Bala: Topographic location

Fig. 3 Tytandderwen cropmark enclosure, Bala: Aerial photograph, from the north-west (Crew and Musson 1996, 13)


Fig. 4 Tytandderwen, Bala,
PRN 9982 Gradiometer Survey:
Grey-scale plan
24 nT
0.00
-18 nT
METRES
0
50


Fig. 5 Tytandderwen, Bala,
PRN 9982 Gradiometer Survey:
Interpretation plan
1
2
3
4
5
6
7
8
9
10
11
12
13
METRES
0
50

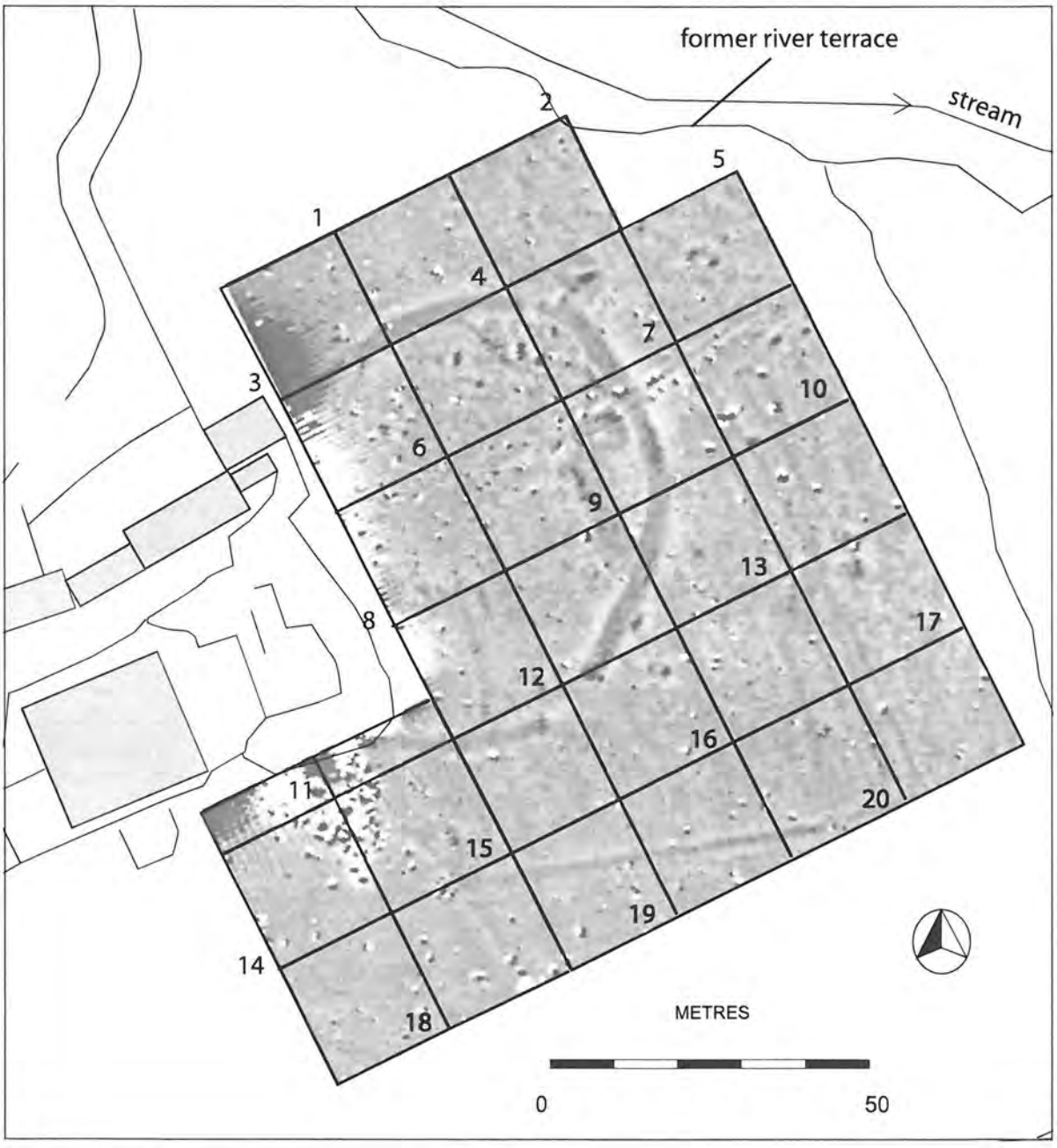


Fig. 6 Tytandderwen cropmark enclosure, Bala: Location of soil test pits in relation to the geophysical survey, 2006

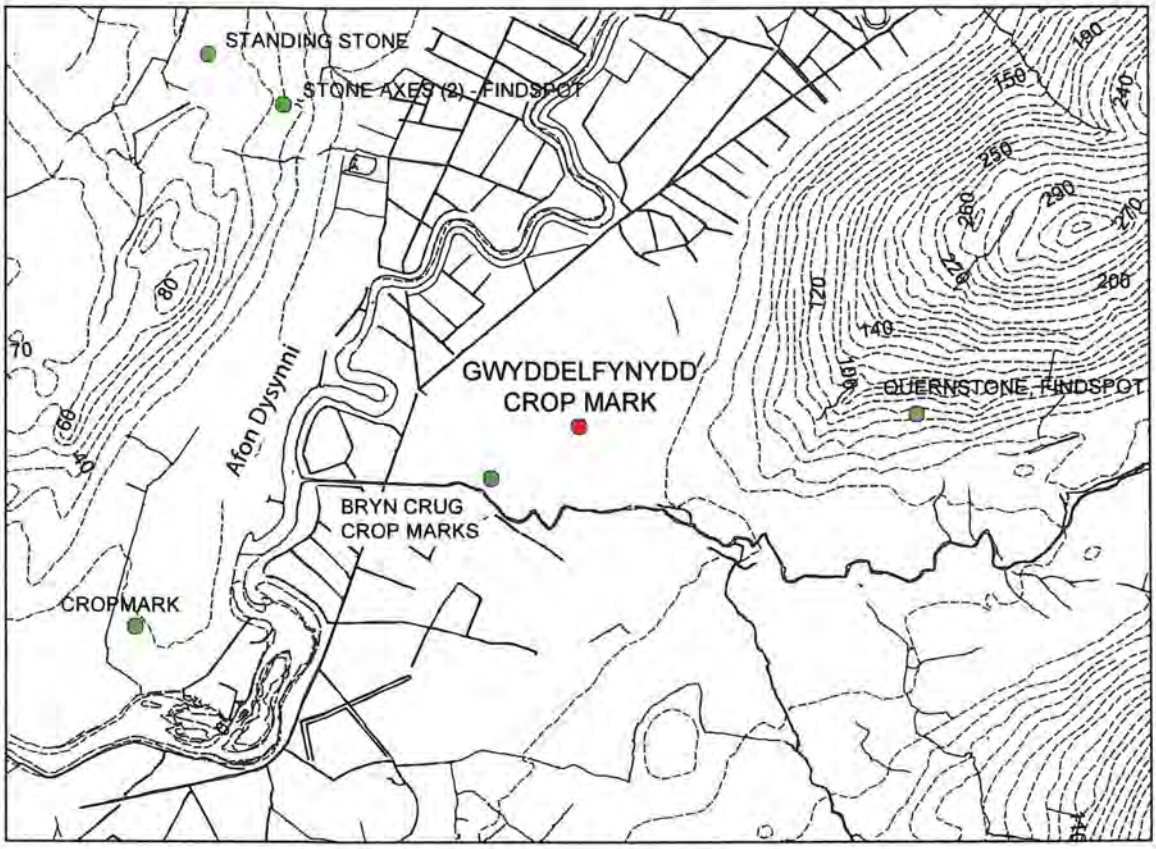


Fig. 7 Gwyddelfynydd cropmark enclosure, Bryn Crug: Topographic location.
Scale 1:25000. © Crown copyright. All rights reserved. Licence number AL 100020895

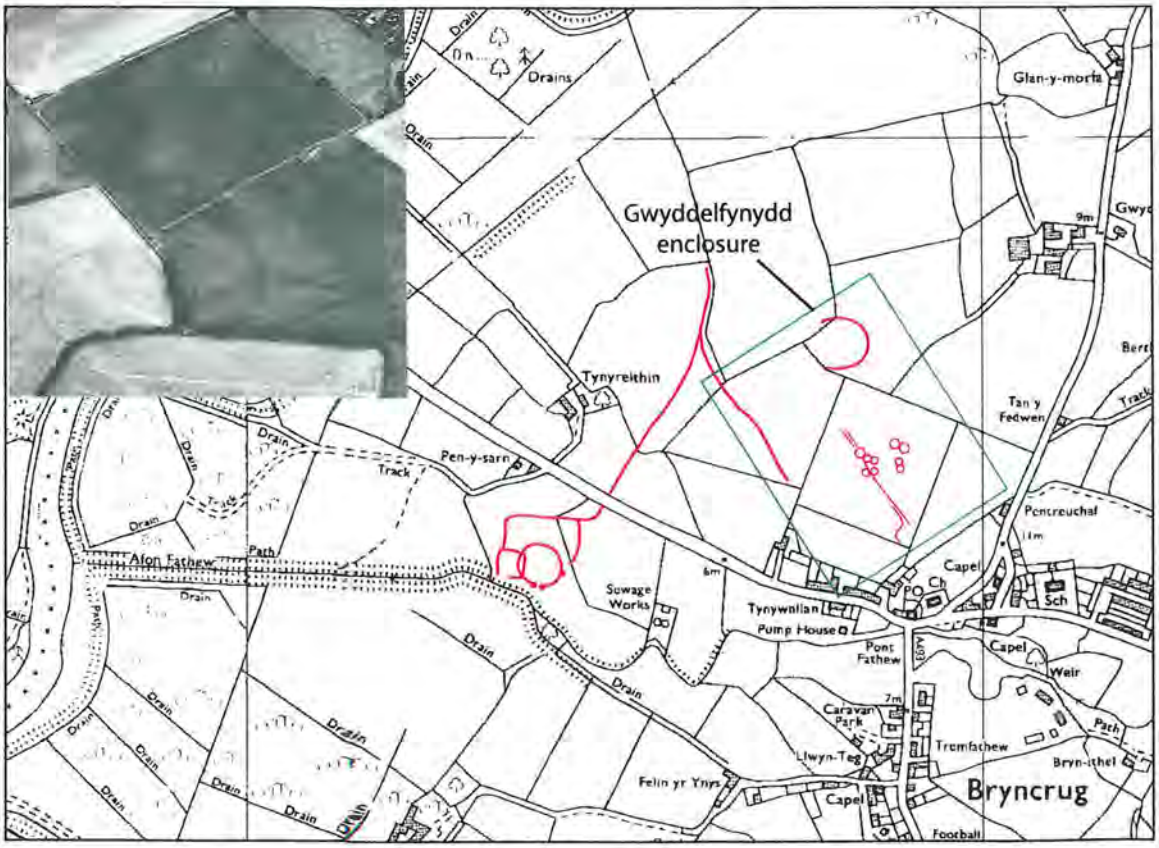


Fig. 8 Bryn Crug area cropmark sketch plot (red) by P. Crew from Univ. of Cambridge aerial photograph.
Green - area of inset cropmark photograph of Gwyddelfynydd enclosure (from north-west)

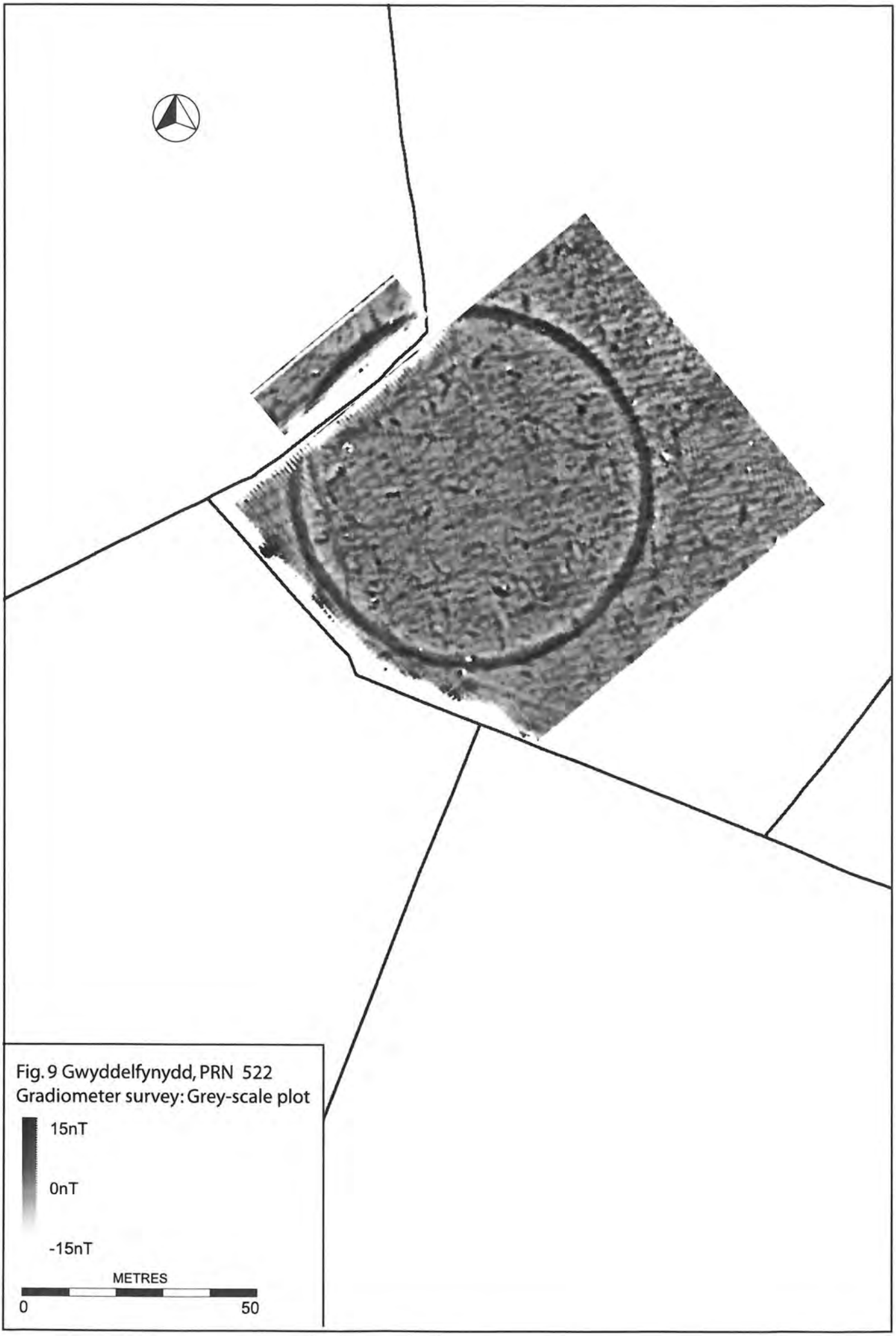


Fig. 9 Gwyddelfynydd, PRN 522
Gradiometer survey: Grey-scale plot

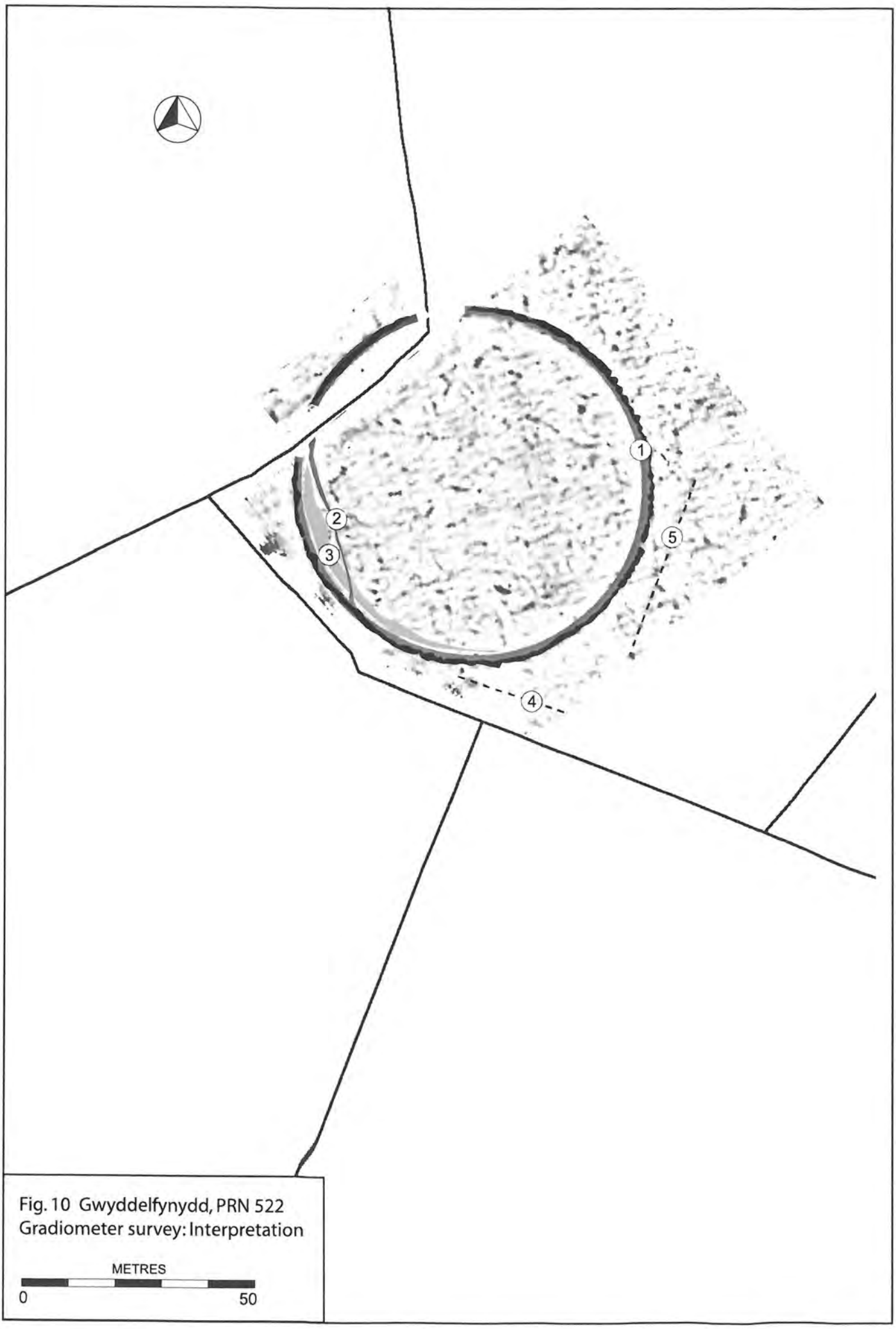


Fig. 10 Gwyddelfynydd, PRN 522
Gradiometer survey: Interpretation

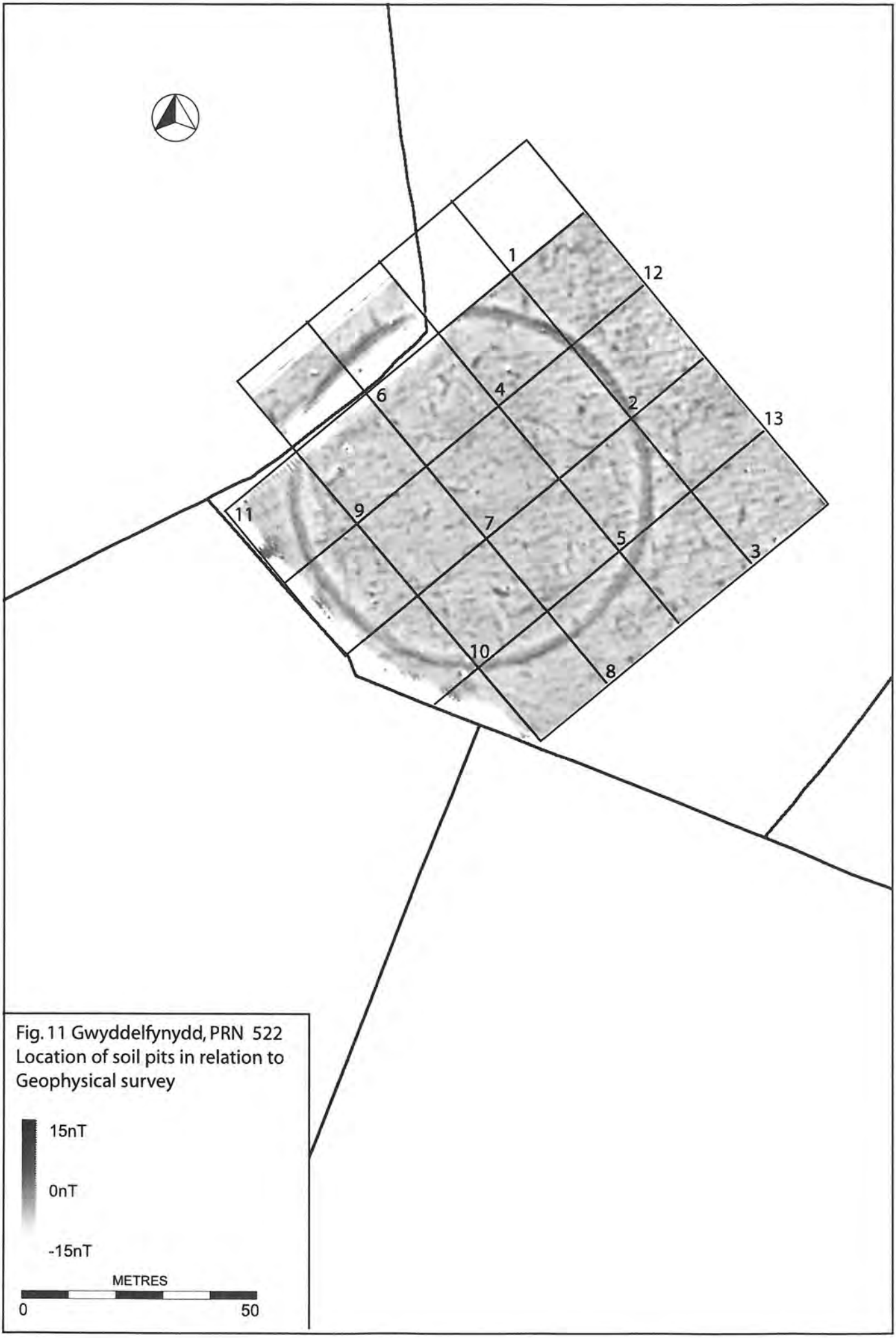


Fig. 11 Gwyddelfynydd, PRN 522
Location of soil pits in relation to Geophysical survey

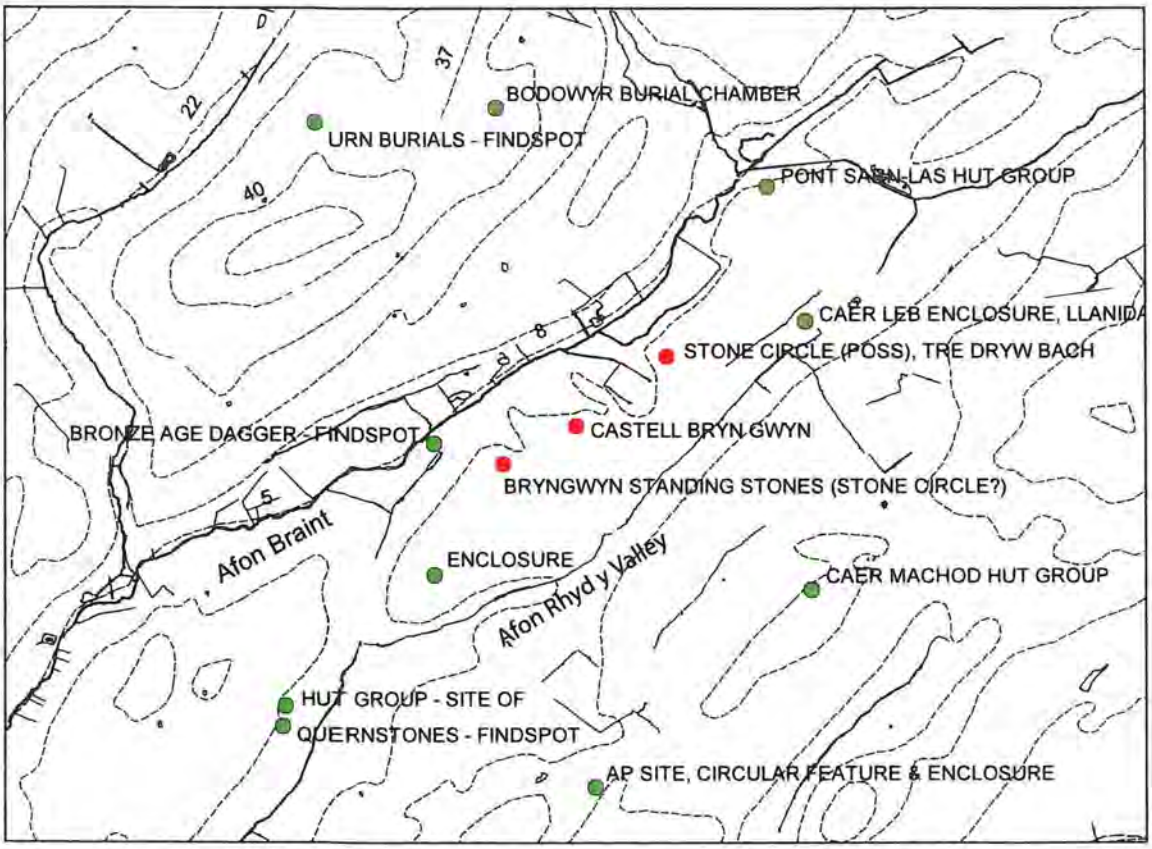


Fig. 12 Castell Bryn Gwyn and Bryn Gwyn stones: Topographic location.

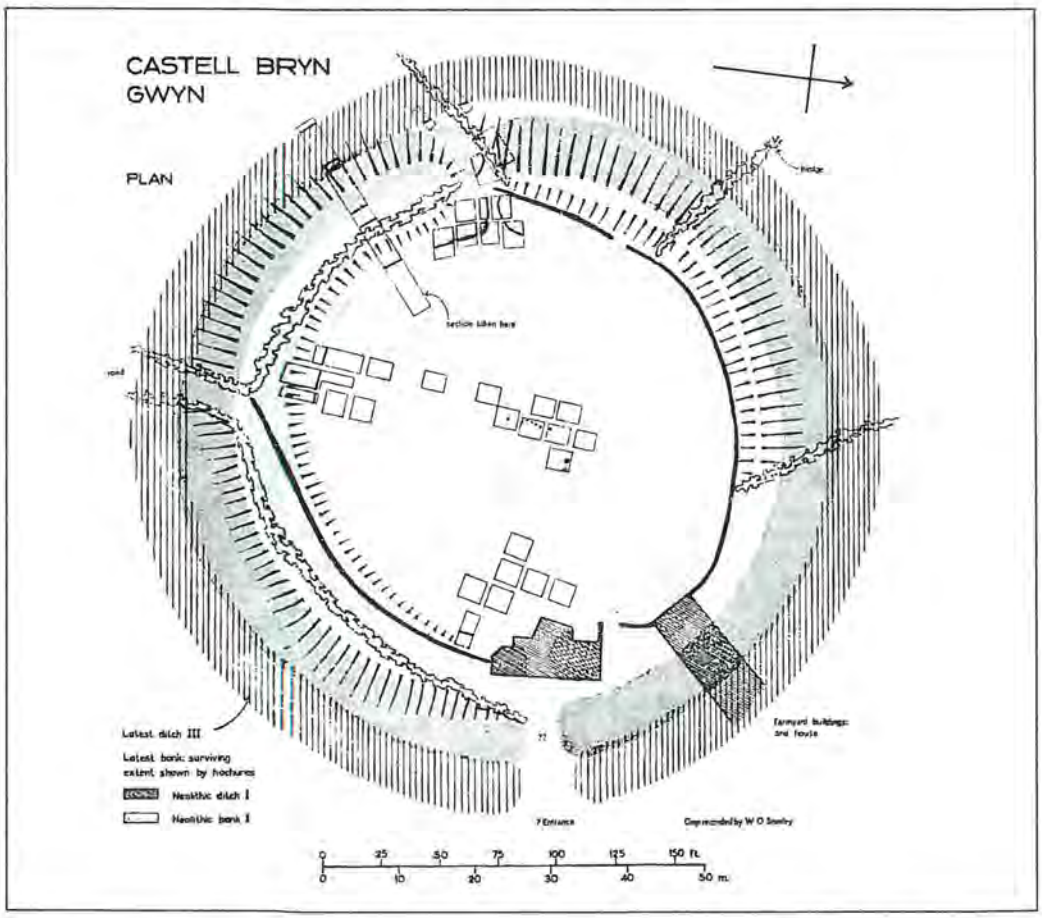


Fig. 13 Castell Bryn Gwyn: Earthworks and excavation plan (Wainwright 1962) after Lynch (1991, 100)

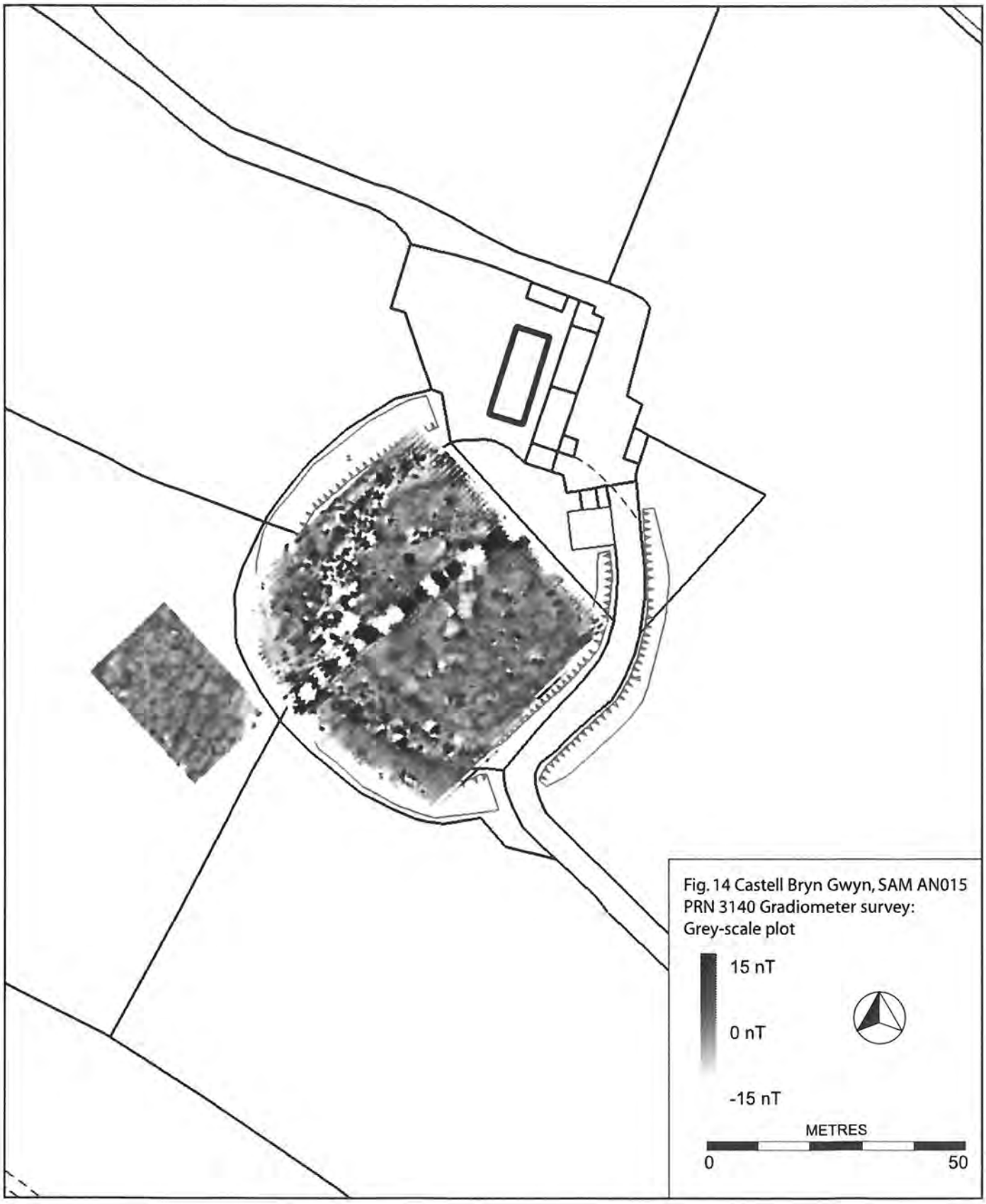


Fig. 14 Castell Bryn Gwyn: Geophysical survey

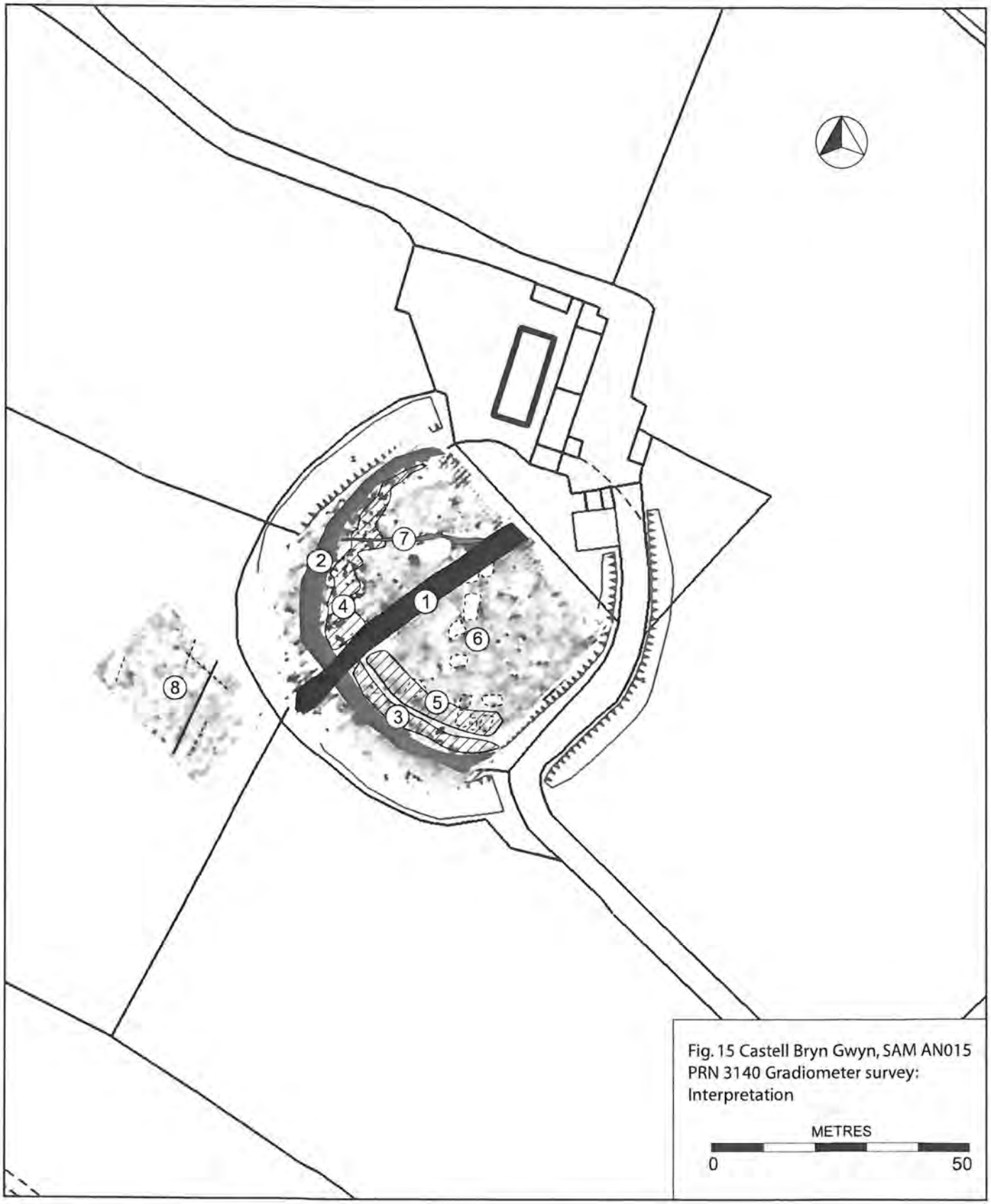


Fig. 15 Castell Bryn Gwyn. Geophysical survey: Interpretation

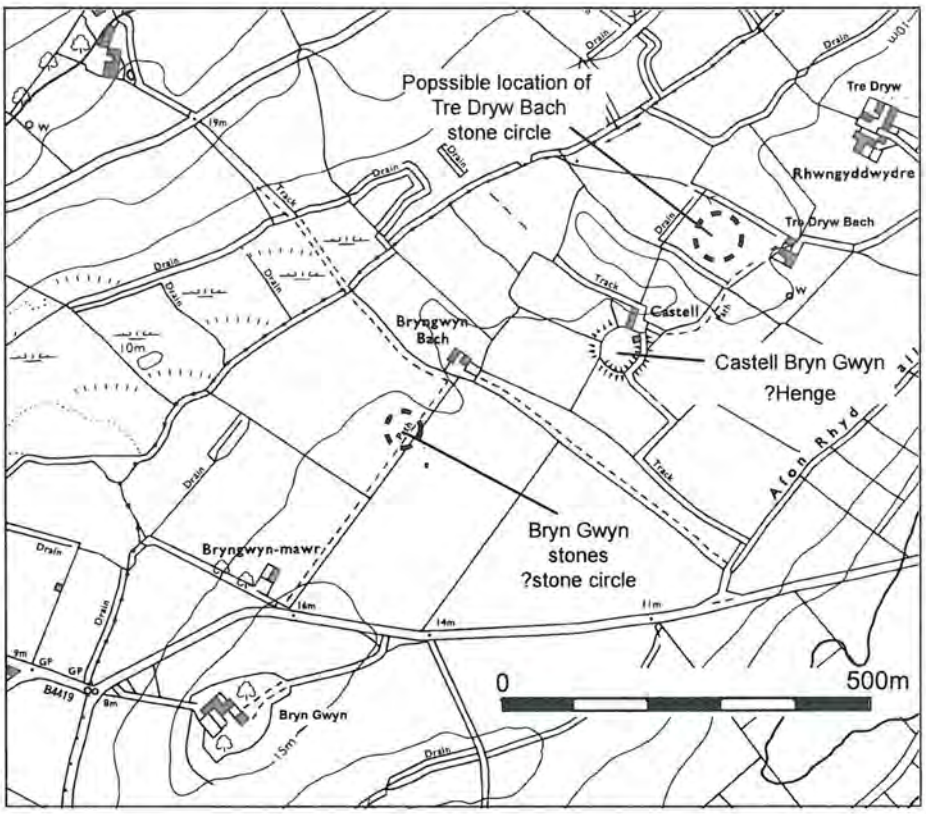


Fig. 16 The possible Neolithic ceremonial landscape around Castell Bryn Gwyn
Based on OS 1:10,000 scale map. © Crown copyright. All rights reserved. Licence number AL 100020895

Fig. 17 Photograph of the Bryn Gwyn stones from the north-east as inSkinner's sketch, Fig. 20. Stone A on the left, Stone B on the right.

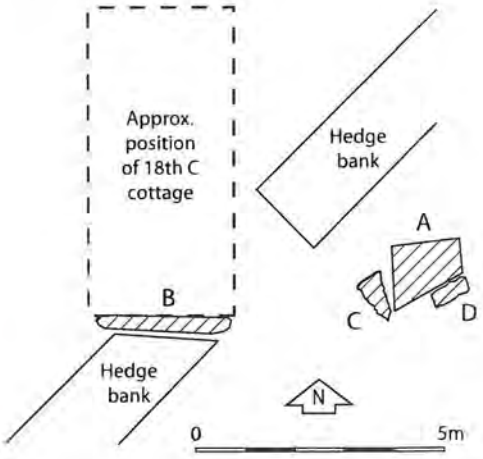


Fig. 18 Plan of the Bryn Gwyn Stones A, B, C and D, 2007

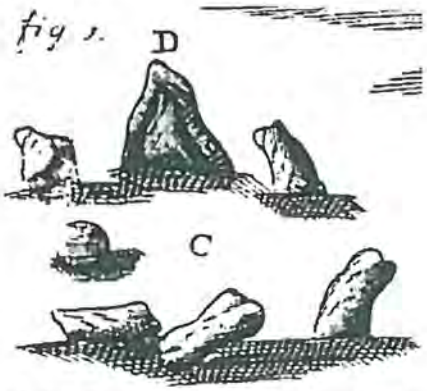


Fig. 19 Rowlands' sketch of the Bryn Gwyn stones, 1723. D is 2007 stone B.

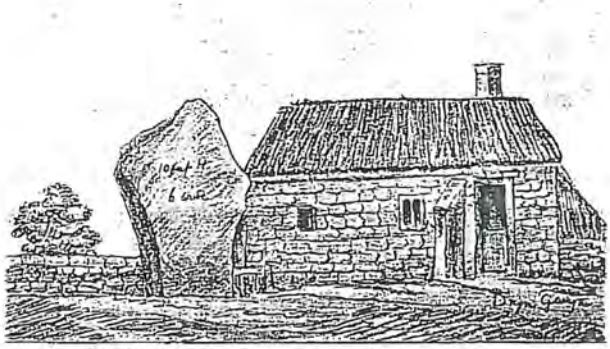


Fig. 20 Skinner's sketch of the Bryn Gwyn stone A and cottage, 1802

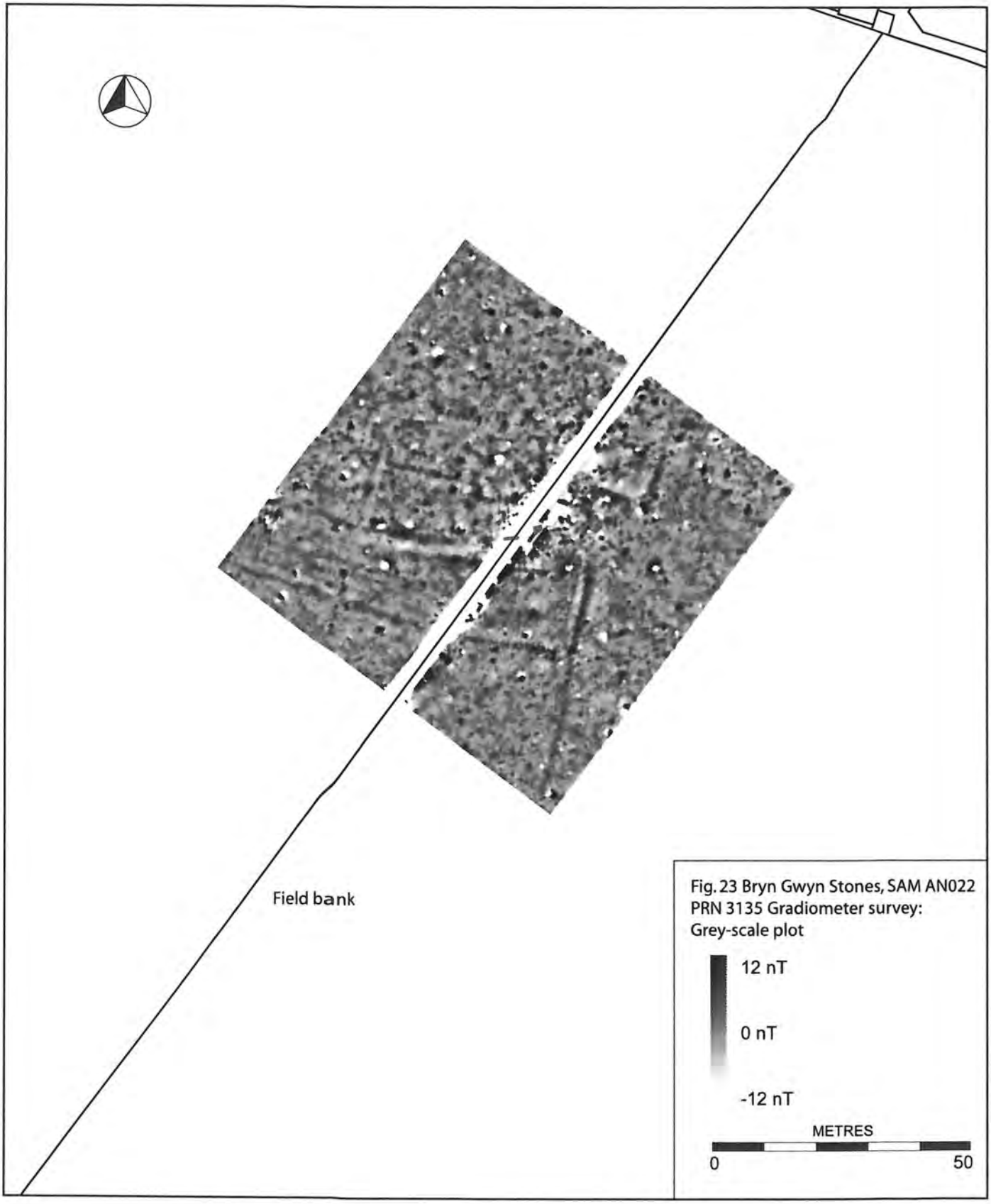


Fig. 23 Bryn Gwyn stones. Geophysical survey. Red: standing stones

Fig. 24 Bryn Gwyn stones. Geophysical survey. Interpretation. Red: standing stones

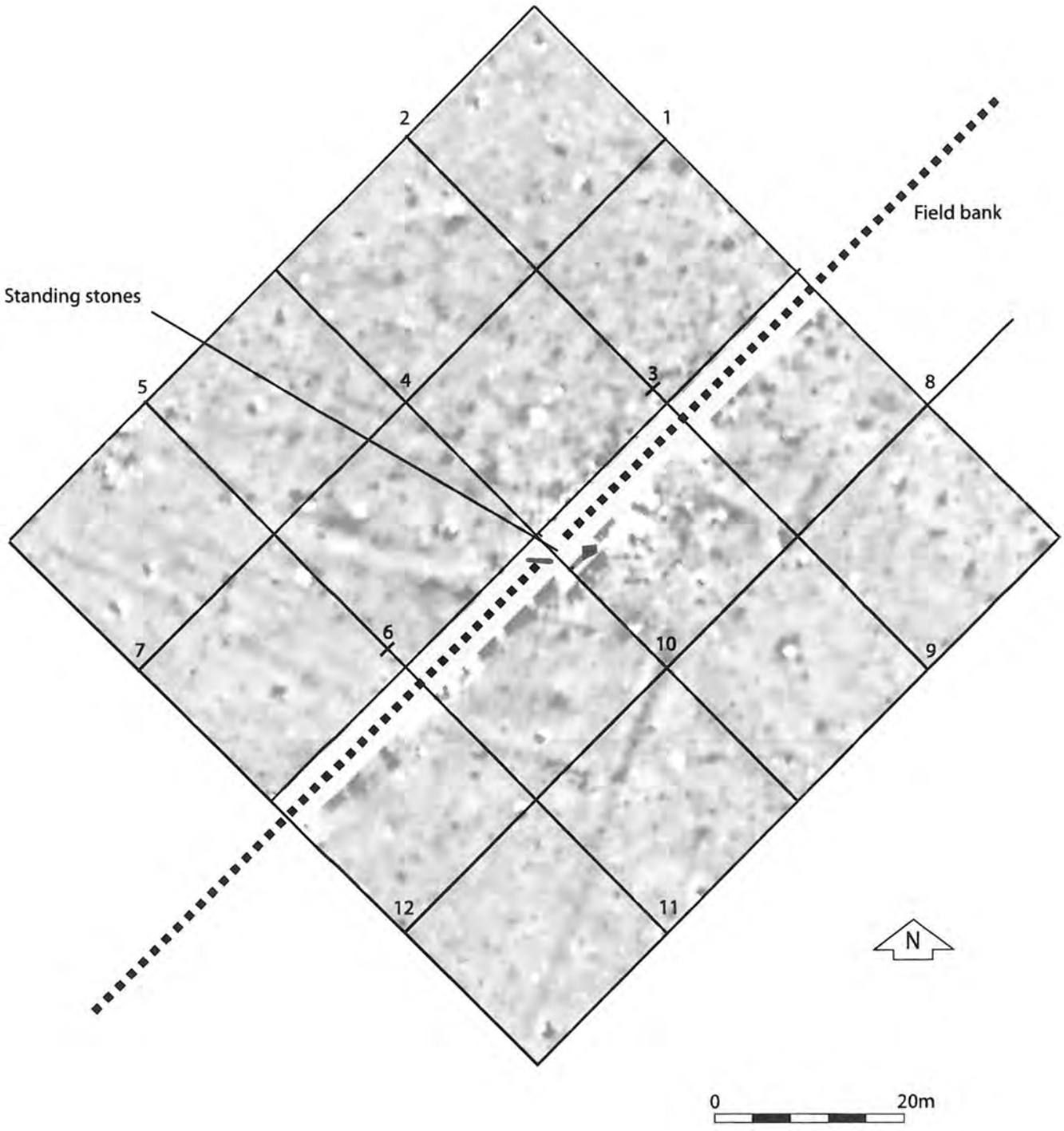


Fig. 25 Bryn Gwyn stones, Brynsiencyn, Anglesey SAM An022, PRN 3135.
Location of the soil test pits. Red: standing stones.

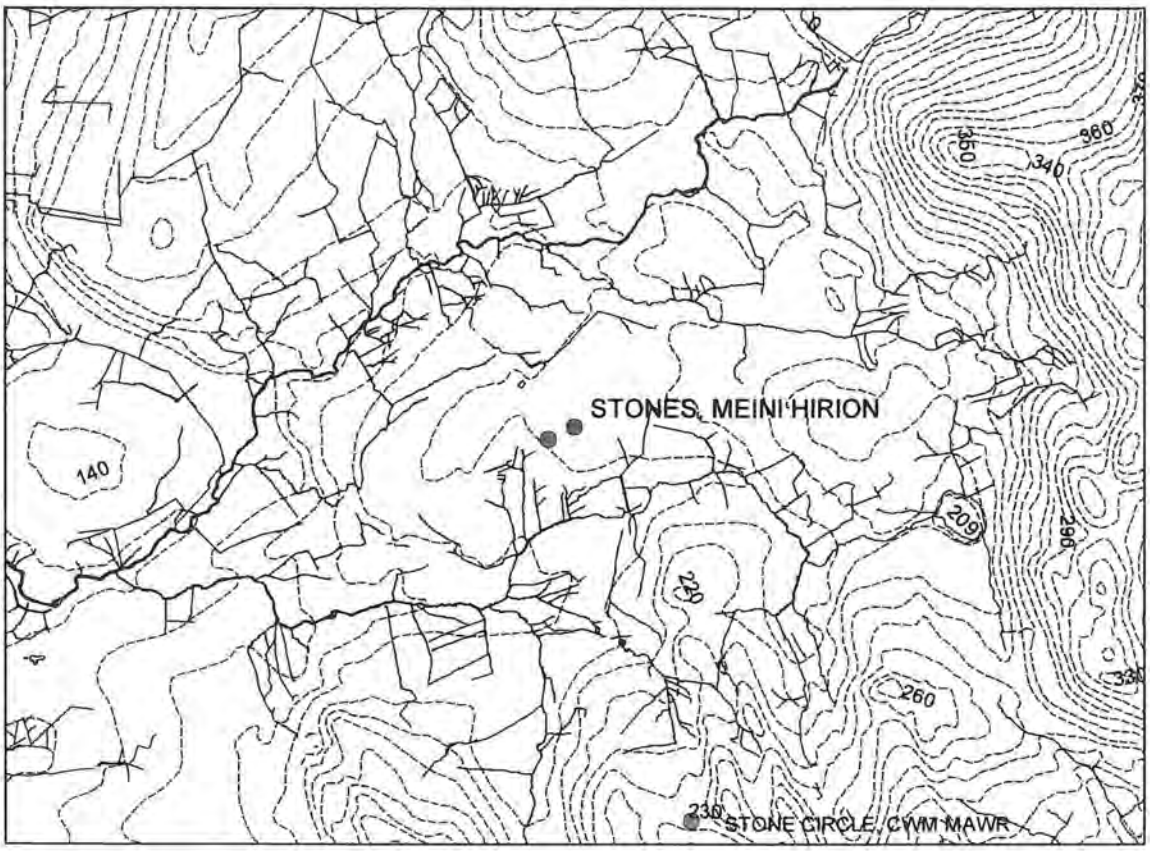


Fig. 26 Meini Hirion, Cefn Coch Uchaf. Topographic location.

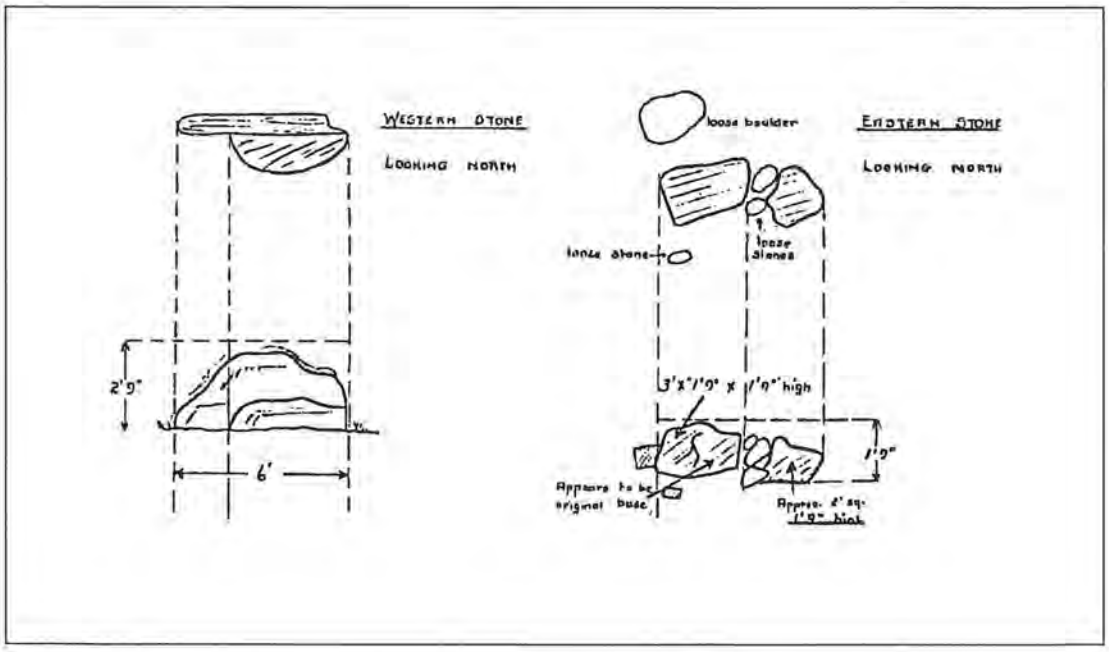


Fig. 27 Meini Hirion, Cefn Coch Uchaf. Plans and elevations of the stones by the Ordnance Survey, 1972

Fig. 28 Meini Hirion, Cefn Coch Uchaf. The western stone, from the south.
1m scale

Fig. 29 Meini Hirion, Cefn Coch Uchaf. The western stone, from the west.
1m scale

Fig. 30 Meini Hirion, Cefn Coch Uchaf. Dumped clearance stones at the west side of the field. From the east. 1m scale

Fig. 31 Meini Hirion, Cefn Coch Uchaf. Dumped clearance stones at the west side of the field. From the north-east. 1m scale

Fig. 32 Meini Hirion, Cefn Coch Uchaf
PRN 2360 Gradiometer Survey:
Grey-scale plot

Fig. 33 Meini Hirion, Cefn Coch Uchaf
PRN 2360 Gradiometer Survey:
Interpretation plan

Fig. 34 Meini Hirion, Cefn Coch Uchaf, Garndolbenmaen, possible stone circle: Location of soil test pits

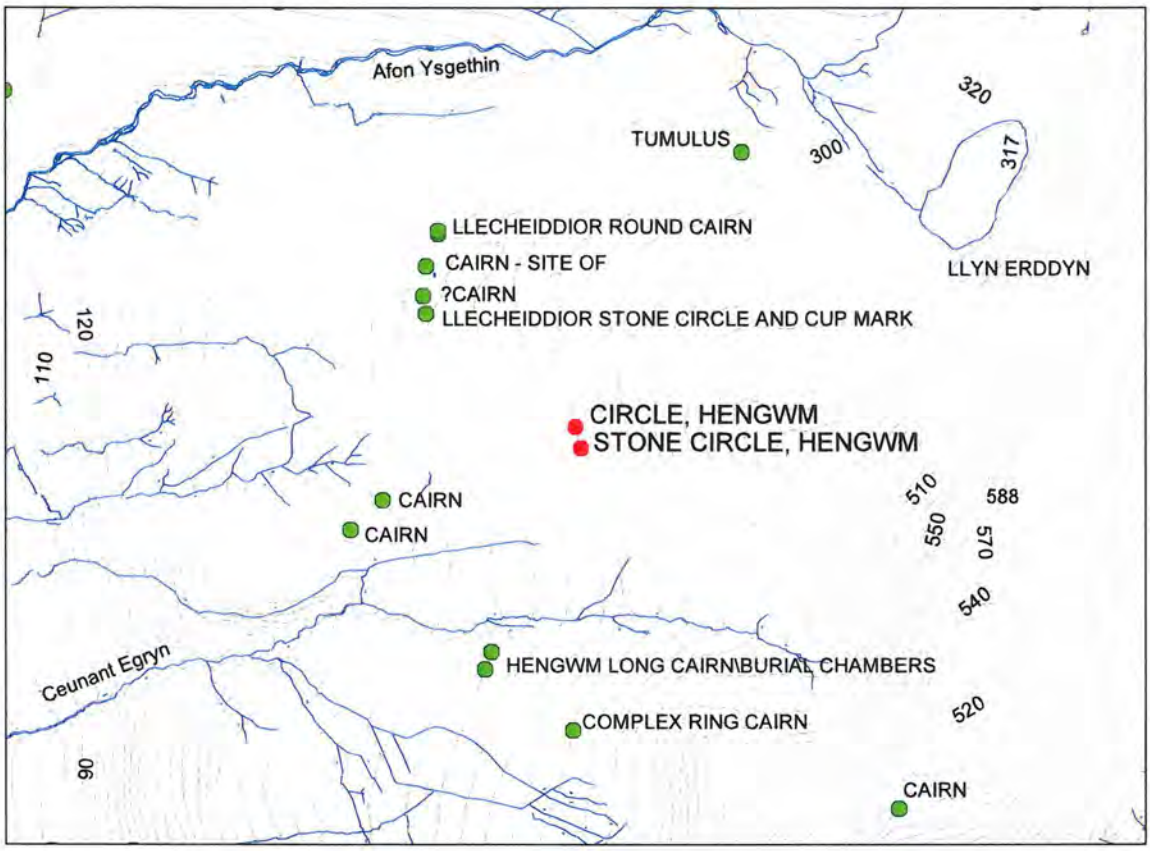


Fig. 35 Hengwm Circles: Topographic location.
Scale 1:25000. © Crown copyright. All rights reserved. Licence number AL 100020895

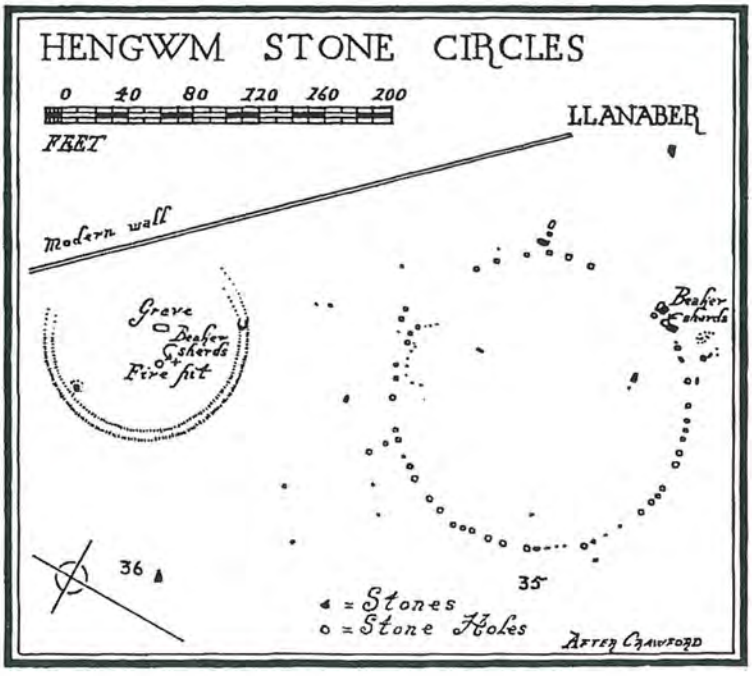


Fig. 36 Hengwm Circles: Combined plan by Bowen and Gresham (1964) derived from Crawford's plans (1920) (see Figs 33 and 37)

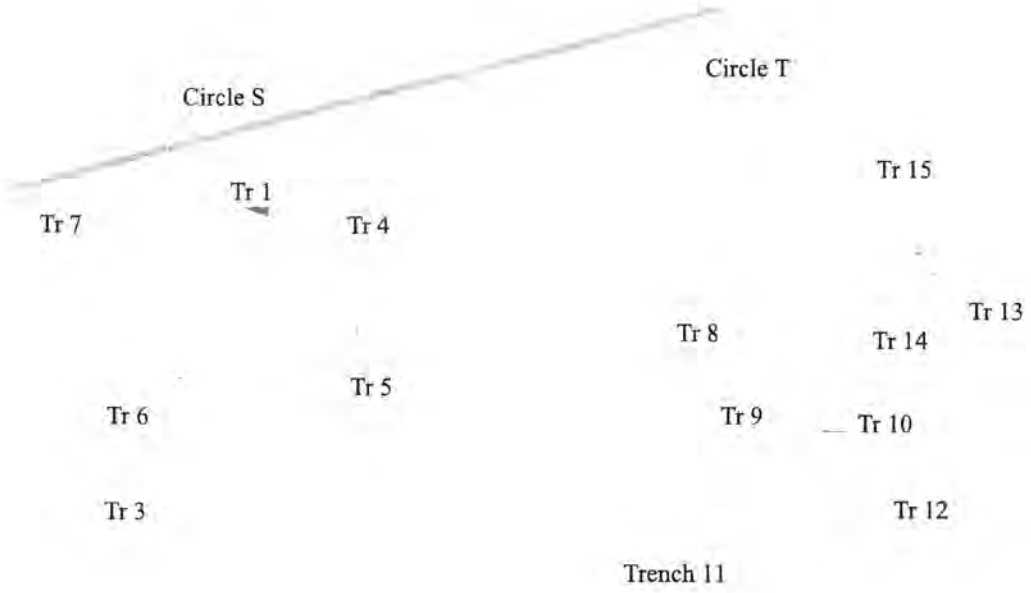


Fig. 37 Hengwm circles, Excavation plans, combined and annotated (Crawford1920)

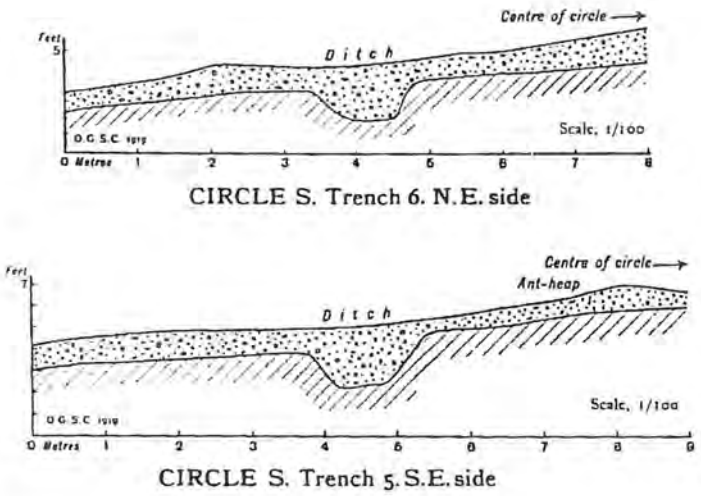


Fig. 38 Hengwm North (Circle S), ditch sections (Crawford 1920)

Fig. 39 Hengwm South (Circle T), Trench 11 from north showing stumps of standing stones (Crawford 1920)

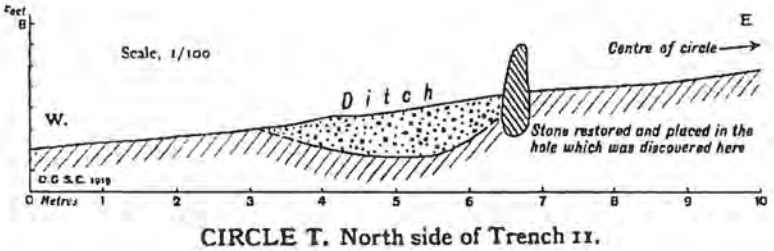


Fig. 40 Hengwm South (Circle T), Trench 11 ditch and standing stone section (Crawford 1920)

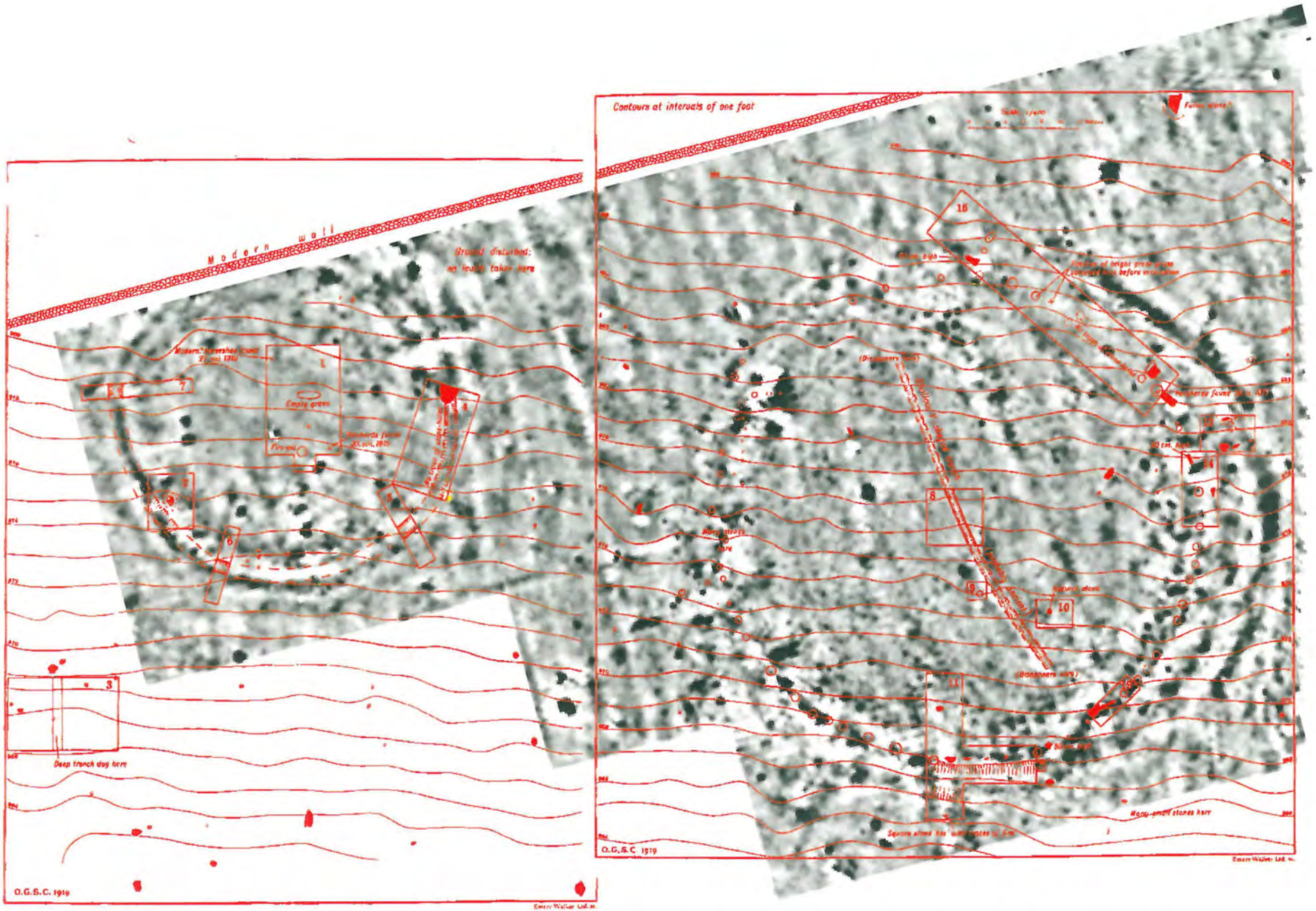


Fig. 41 Hengwm stone circles, SAM ME136, PRN 1087, 1088, excavations and ground plan (from Crawford 1919) overlying geophysical survey results

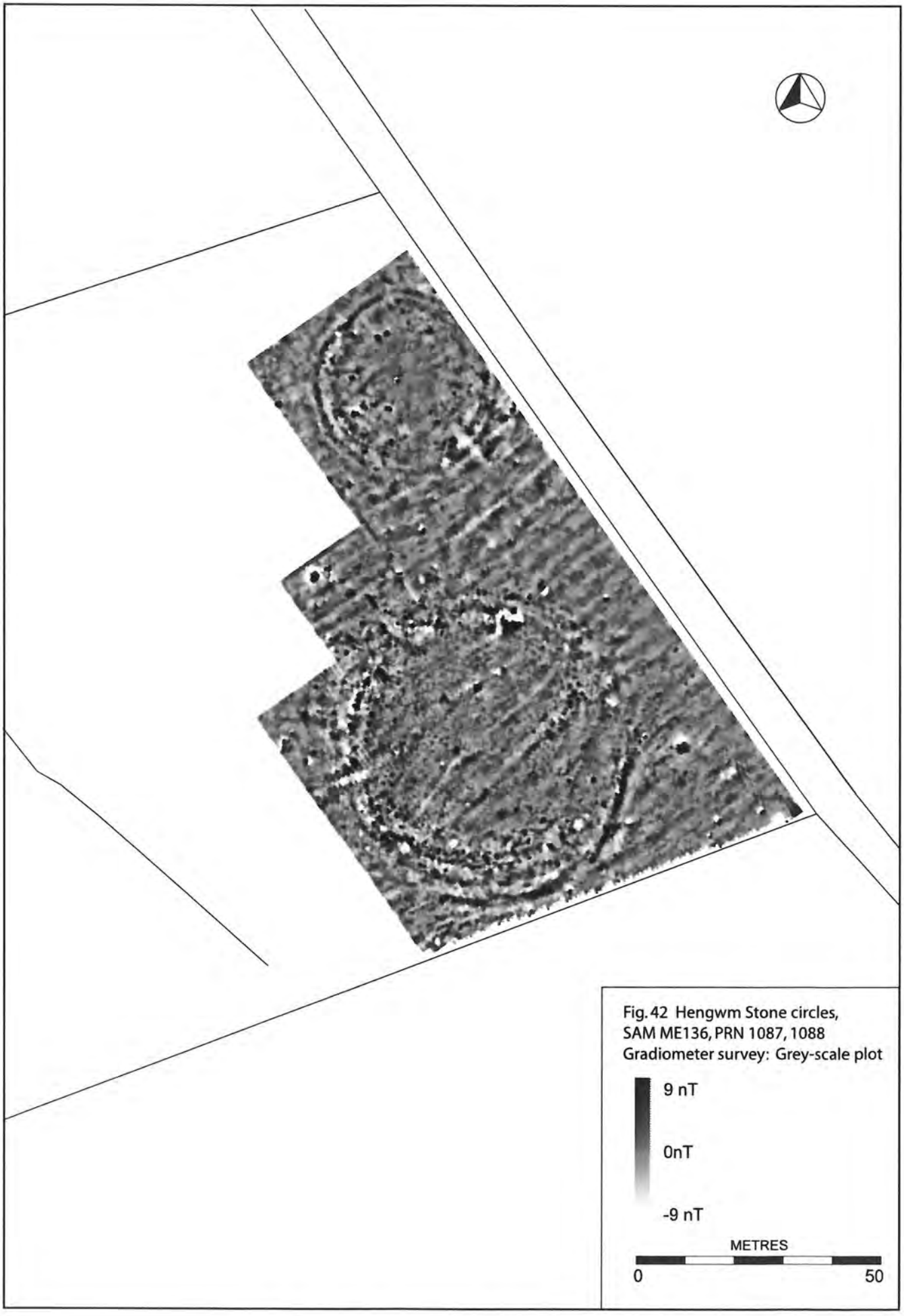


Fig. 42 Hengwm stone circles: Geophysical survey

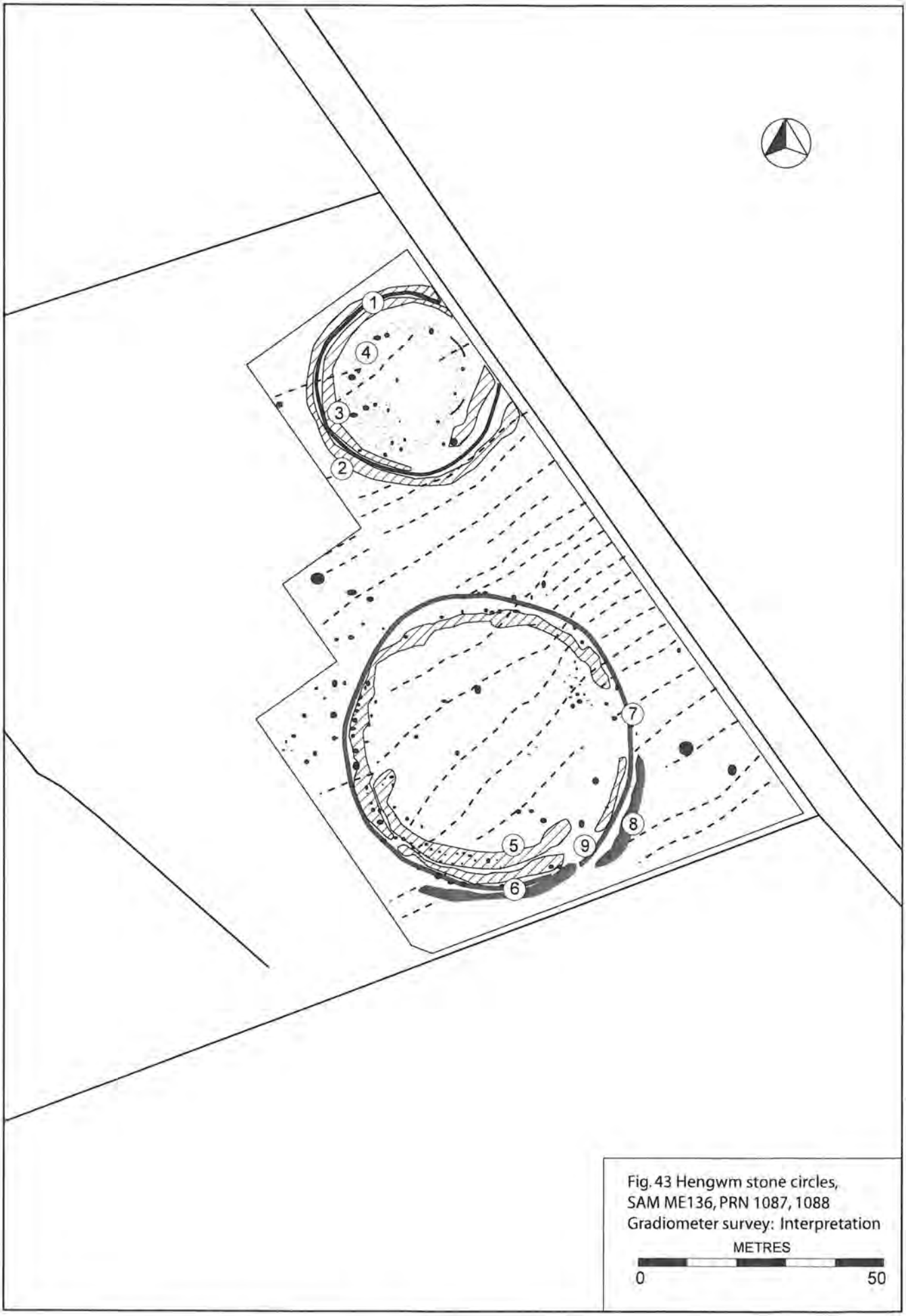


Fig. 43 Hengwm stone circles: Geophysical survey interpretation

REGISTERED · ORGANISATION · IFA

YMDDIRIEDOLAETH
ARCHAEOLEGOL
GWYNEDD

GWYNEDD
ARCHAEOLOGICAL
TRUST

Craig Beuno, Ffordd y Garth, Bangor, Gwynedd LL57 2RT Ffon/Tel 01248 352535 Ffacs/Fax 01248 370925
e-mail: gat@heneb.co.uk web site: www.heneb.co.uk